Chapter 6: INITIAL IMPLEMENTATION: THE DEVIL IN THE DETAIL

Despite having discovered that the product is technically feasible, the task manager should be aware that reaching this stage successfully does not always mean that ultimately a product can be developed (see box 6.1). This chapter will attempt to present some of the areas that can cause complications during implementation.

Technical feasibility is only one facet of program development, and any successful program must address and overcome a number of challenges associated with expanding a new financial product into a market. Notably, when considering farmer-level WII, we are considering financial products targeted toward clients who have limited financial literacy and whose experience with insurance products is, in most cases, almost nonexistent.

BOX 6.1: Where Does Feasibility Stop and Implementation Begin?

Chapter 5 discussed how to carry out a feasibility assessment. While this activity will give a good indication if and how a WII program could be implemented, it cannot predict or determine all the challenges that may lie ahead. In reality, the only true test of feasibility is trying to implement a program and offering the product to clients. There is a significant overlap between determining feasibility and the beginnings of the operational program. The steps involved in implementing a WII program are outlined in this chapter, and while some of these things have been completed in the feasibility work, in other cases they may not have been completed. The depth of the feasibility report carried out will determine how much work remains to be done in order to implement a pilot program. In many cases, feasibility will cover the general aspects of program development, while in other cases feasibility goes into much more detail outlining specific operational activities and potential partner arrangements.

Source: Authors.

With these limitations in mind, it is clear that the success of WII program development will be heavily dependent on the actual demand for the product and the completion of the business processes and operational arrangements that will give clients access to them. In order to see more clearly how these factors run throughout the implementation process, we have broken the process down into two distinct phases:

- Meeting the preconditions
- Implementation

6.1 MEETING THE PRECONDITIONS

A number of preconditions must be met for implementation of a WII pilot, and they will influence the ease of program implementation. While there are numerous factors, two basic preconditions must be satisfied in order to move forward: ability to identify and reach clients and data availability and access.

6.1.1 Ability to Identify and Reach the Client

Before a program can be developed, the specific use of indexing should be established and client need identified so that an appropriate product can be designed. Client needs must dictate contract design and program development, otherwise the product will suffer from lack of demand or will fail to meet the expectations of all involved parties. In general, clients fall into one of two groups in agriculture. Either they are farmers ("micro" clients) or they are operators in agricultural supply chains (banks, input/service suppliers—"meso" clients). When deciding whether to market products to farmers or to institutions, it is important to consider the tradeoffs between the two; these are considered in table 6.1.

Providing financial services to rural clients is more challenging than to urban for a variety of reasons (poor infrastructure, lack of formal financial sector, small or geographically dispersed land holdings, and so on). To access potential clients, insurance providers must develop a cost-effective way to offer and provide information on new products. In the case of meso-level clients, this can often be done fairly directly and at relatively low cost. Farmers, on the other hand, are poorly

TABLE 6.1: Comparison of Micro- and Meso-Level Products

	FARMER-LEVEL INSURANCE	INSTITUTIONAL-LEVEL INSURANCE
Program planning and implementation	• Farmer outreach critical—can require coordination with farmers' organizations or other rural service providers • Services need to be farmer focused • Implementation complicated by number of clients and their dispersal	• Smaller number of potential stakeholders • Outreach not as relevant • Programmatic decisions can be made relatively by the financial institution or portfolio client
Contract design	• Contracts must meet needs of specific farmers or groups of farmers, while also being generic enough to be scalable • Designing a contract that acts as an accurate proxy for the risk of each farmer is critical for take-up and program efficacy	• Products can be tailored to meet the specific need of a single client rather than a large number of clients • Determining average weather risk of a large group of farmers rather than the risk to a specific farm can simplify index design
Basis risk*	• Only small levels of basis risk will be accepted by farmers • Weather at the stations must match the weather on the farmer fields with a high degree of confidence • Basis risk and its management are a major challenge, especially to sustainability	• Portfolio clients are interested in average payout, which minimizes basis risk • Portfolio clients are risk aggregators, with many clients and areas, and are therefore more capable of absorbing basis risk events than individuals
Communication and education	• Education and training for farmers are critical marketing components and enable farmer understanding of basis risk • Given numbers of individuals involved, fact that insurance is a new concept to many, and that WII is technically complicated, resource investment in education and training can be significant	• Education and training limited to a much smaller group of individuals, many of whom already have a higher understanding and awareness of financial products • Given the foregoing, costs involved with these clients are invariably much lower

* Basic risk is the potential that the weather at the station used in the index can differ from the weather on the farmer's fields.

Source: Authors.

connected to markets, and reaching them can be challenging and expensive.

Unless a commercial partner can be found who is willing to invest the time and financial resources to engage in sufficient outreach to potential clients, any program is unlikely to succeed in an initial product offering and will certainly be at high risk of low sustainability.

6.1.2 Data Availability and Access During the Contract Period

Historical data from weather stations is critical for deriving the indexes that underlie the products. In addition, accessing data on a real-time or semi-real-time basis is critical for settling the contract, guaranteeing that insurers and reinsurers want to participate in the contract, and providing transparency in contract administration. The challenges associated with accessing both historical and real-time data to support the project should not be underestimated.

Getting agreement from the National Meteorological Service (NMS) to provide data to clients can prove challenging. In many cases, state institutions are either unwilling or unable to share it. Use of weather data for commercial purposes is rare in many countries, and therefore there is no set system for sale of data or provision of services from the NMS. Many pilot programs have been delayed by months simply because access to data (even though it existed) could not be gained. Box 6.2 illustrates some challenges you might encounter trying to access weather data to be utilized for designing agricultural index insurance for most countries.

6.2 IMPLEMENTATION

If the above preconditions (and other previous steps, such as prefeasibility) can be met, then there may be potential for a program to move forward. At this stage of program development, activities move from being largely technical to much more practical, requiring extended work in country with the local program partners. These activities will vary from program to program, but here we group them into eight general activities.

6.2.1 Establishing a Work Plan

Program implementation usually requires 6 months or more to sufficiently prepare to offer policies to clients, and it is important to coordinate the work planning with the cropping cycle. Because WII programs have to be coordinated with preseasonal activities, it is important to ensure that all activities in the work plan take this into consideration.

For a work plan to be effective, it must be supported by the diverse stakeholders who will be required to move the program forward, all of whom have differing roles and responsibilities for program success (see table 6.2). This often requires careful coordination of activities and stakeholders,

BOX 6.2: Why Data Access Is a Complicated "Business"

"Publically available" does not mean free . . . although sometimes it does. Some NMSs require purchase of data, while others share data freely; when it is for sale, prices can vary significantly. While initial payment for data may not be significant, the terms for payment should be considered carefully, since additional data will be required to scale up the program to additional stations.

Data that is purchased must be sharable. It is important that the terms of any data purchase or release permit the data to be shared with all parties involved in the pilot (including international reinsurers and local insurers). Failure to ensure this will make it very challenging to underwrite the program.

Daily data is preferred. Often NMSs are willing to share weekly or dekadal data. While this is helpful and can provide a basic overview, accurate analysis of the weather risk and, specifically, design and underwriting of any insurance product require daily data.

"Missing" data may not be missing. Summaries of available weather data from NMSs are often misleading. Invariably, NMSs only provide summaries of data that has been cleaned and digitized. In reality there is commonly much more data available that has not been cleaned or is held in other formats (for example, records kept at weather stations, logs and reporting cards held by the NMS, and so on). This data is often in handwritten form and yet to be digitized. Harvesting this data and digitizing it significantly increases the scope for access to weather data.

Ongoing access to data is just as important as access to historical data. During the insured crop season, the NMS will need to provide data at an agreed-upon frequency. This data is essential to determine when and if there is a payout from the contract. Any gaps in data provision must be monitored and remedied.

Automated stations are preferable. Automatic weather stations are preferred because of their heightened ability to provide source data without the potential for physical interference and also to provide more timely data provision. Manual stations can act as backup stations. Where only manual stations are available, these are acceptable for the purposes of insurance as long as they have the appropriate security. However, it should be noted that automatic stations do need maintenance and regular recharging of mobile phone cards if they are reporting via mobile networks.

Source: Authors.

TABLE 6.2: Stakeholders in WII Programs

CATEGORY	POTENTIAL STAKEHOLDERS	ROLE
Insurer	Insurance companies, insurance association	Underwrite risk, contract design, marketing
Reinsurer	Reinsurance companies, hedge funds	Risk transfer capacity
Agribusinesses and financial partners	Agricultural banks, rural service organizations, nongovernmental organizations (NGOs), MFIs, input suppliers, agribusiness companies	Clients, agents for marketing and education, collecting policies and premiums
Farmers	Farmer association, cooperatives	Clients
Government departments	Meteorological service, insurance regulator, Ministry of Finance, Ministry of Agriculture, planning ministries, research and specialist institutes	Provide data, agronomic information, and research; assist in contract design; maintain weather infrastructure; regulate product
Donors	Technical assistance, financing key investments	Research and development (R&D), weather infrastructure

Source: Authors.

which may necessitate the appointment of a local project manager or a team tasked with pushing the work forward. It is vital that the roles and responsibilities of the various stakeholders are set out from the beginning; this is often best achieved through the signing of a memorandum of understanding by the stakeholders. An example of a work plan can be found in Annex 10.

6.2.2 Identify the Potential Pilot Areas and Complete Risk Assessment

Generally, the feasibility work will identify some preliminary target areas. These areas should now be vetted to determine the best location to launch the program. When WII is first discussed, most people consider areas that are frequently affected by extreme weather. However, these areas are actually the least suitable for a weather risk transfer product. WII (like all insurance products) is most suited to areas where payouts are not regularly required. Similarly, in those areas where risks are extremely infrequent, it will be challenging to market a product to farmers whose perceived risk is extremely low.

For pilot programs it is often best to start with a large pool of diverse areas and clientele. This will both allow the best areas for the program to be selected and also offer various options for the approach being piloted (for example, working with an MFI or retailing directly to farmers). Of course, the

final area selection will be dictated by both the technical and operational realities.

In the preconditions we discussed above, we noted the importance of identifying clients and the ability to reach them. While a partner may have indicated their willingness and ability to work on the program, their ability to do so should be reconfirmed during the process of area identification. There should be a thorough determination of the planned delivery channels for reaching end users, through institutions such as a bank, financial intermediary, or farmer organization, and clarification that they can efficiently and cost effectively deliver the product to farmers (or other intended beneficiaries). The institution must have both sufficient outreach to provide marketing and education to clients and the organizational capacity to handle a new financial product.

6.2.3 Contract Design and Establishing a Premium

Contract design is a core activity of any WII program and requires considerable attention in both staff time and financial investment. Primarily, it involves the design of prototype contracts and ultimately the design of a contract that provides the most accurate proxy for clients' risks, while establishing a premium that a client is willing to pay.

Prototypes are simply generalized contracts with the basic terms determined purely by agronomic modeling and input from clients. Determining premiums is a relatively straightforward process, and initial quotes can be obtained to ascertain how inexpensive or expensive the contract will be. Prototypes provide the basis for discussion with clients and will provide clearer indications of client commitment to the program. This discussion also provides feedback on the terms of the contract and initial reactions to the premium level. In addition, if there are any serious design constraints, prototyping will identify these and allow for testing of other contract designs or approaches to indexing the risk.

Contracts to be retailed directly to farmers must be designed to balance simplicity of contract structure with ability to capture the complex dynamics that the index seeks to mirror. The contract must provide effective insurance for the buyer, by faithfully capturing the identified risk. It must compensate a farmer for losses and thereby satisfy client needs and insurance regulatory requirements. A contract that achieves a balance of agro-meteorological and practical considerations is most likely to facilitate a farmer's acceptance and the marketing process.

A key consideration in contract design is to ensure that the product offers adequate protection to a farmer, who may often have more than one crop or income stream. To ascertain this, the team should consider whether a payout based on a weather index would effectively compensate a farmer for the worst potential economic loss the farmer might experience. This overall vulnerability of a farmer to external shocks is often better managed by simpler index contracts that focus on more extreme events.[15] The same consideration also holds for intermediaries like banks and MFIs, who are concerned about the aggregate risk of many farmers, rather than the specific risks of individual farmers.

6.2.4 Test the Contracts, Determine Marketability, and Finalize the Product

Once the contracts have been designed, they should be discussed in detail with the program stakeholders. They need to be evaluated both for technical accuracy and to determine actual client demand.

While contract design is a detailed and lengthy process, the sooner a prototype can be developed for testing and sharing with stakeholders, the better, as this can add significant clarity to project development and allows contract refinement based on field conditions. Testing contracts can be executed through focus groups with farmers, clients, and industry leaders. Simple strategies that demonstrate the years a contract would have paid, the triggers for payout, and the overall terms of the contract can provide good illustrations of how well a contract matches the farmers' risks.

Finally, the terms of the contract need to be set. These include the trigger levels for the contract, payout levels and amounts, and start and end dates for the contract. Finalizing these will require agreement among the insurers and reinsurers as well as the clients.

These terms will have a significant impact on the cost of the premium. While initial pricing can be done on a provisional basis (see above), the final cost of the product is ultimately determined by these terms and by loadings selected by the insurance company offering the product. The insurance company will combine a number of different costs to come up with the overall price. The primary components of the premium are the pure risk and administrative costs, but insurers will also load contracts to account for catastrophic payouts

15 Hess, U. "Innovative Financial Services for Rural India: Monsoon-Indexed Lending and Insurance for Smallholders." Agriculture and Rural Development (ARD) Working Paper 9, The World Bank, 2003. Hartell, J., H. Ibarra, J.R. Skees, and J. Syroka. Risk Management in Agriculture for Natural Hazards. Rome: ISMEA, 2006.

(which is a largely subjective process). Before a program can be launched, the insurance company has to decide and communicate in writing to stakeholders and clients the final terms and premiums for the contract. This information then needs to be shared with potential clients.

6.2.5 Identify and Carry Out the Business Processes

In parallel to the technical work, it is critical to commence the business processes that will also drive the program. While the contract design work underpins the contract, the operational work is equally as critical for a fully functional operational program and ultimately drives the transaction.

These business processes are some of the areas in which WII programs face their biggest obstacles. Of course, most of the challenges are not unique to WII and are common in the rollout of many new financial products. The actual challenges or difficulties that a program will face in this area differ according to the particular situation and stakeholders involved. However, in general terms, these are the main areas that need to be addressed or considered:

- Determine how and when the product will be marketed
- Determine how premiums will be collected and payouts distributed
- Develop policy documents
- Finalize agreements between stakeholders
- Prepare marketing material
- Adapt internal Management Information System (MIS) and accounting systems

6.2.6 Obtaining Clearance from the Insurance Regulator

Clearly, it is important to work within the existing insurance laws and regulations of the program country. This can be a complicated issue with WII, as its definition as insurance will be dependent on laws and regulations applicable in each country. In Chapter 7 we will discuss this issue in more detail. From an operational point of view, obtaining the clearance will normally require presenting a draft contract to the regulator for approval. In some cases it will simply require providing information on the terms of the contract to the regulator. In all cases it is necessary to make sure that the regulator has approved the product and any associated documentation as is mandated by the jurisdiction in which the pilot will operate.

6.2.7 Sourcing Insurance and Reinsurance

One of the potential advantages of index-based products is the ease with which they can be underwritten by insurers and reinsurers. However, in most developing countries, these products are new, so many insurers are hesitant to expand their business with this product too quickly. Additionally, the capacity of domestic insurers' staff to understand, design, process, and administer WII contracts is low, and this presents an obstacle to increasing the volumes of business transacted. However, this is an area in which the program can seek to provide dedicated "hands on" capacity building as the pilot proceeds.

While many pilots have low total values at risk and could therefore be conducted without transferring any risk to the international reinsurance market, there are a number of reasons why reinsurance should be considered. First, while the exposures may be small, the product is new and untested for many insurers, and they are therefore cautious about underwriting on their own. Second, as the insurance program expands, management of catastrophe exposures through reinsurance will be necessary. Third, there are clear benefits to establishing relationships between national and international reinsurers.

Fortunately there is an active reinsurance market for WII. This interest is based on a desire to engage in new markets and diversification of risks. It is generally based on the belief, or at least hope, that there will be a growing market for weather risk in a country. However, it should be noted that reinsurers' interest in pilot programs (which are generally quite small) is likely to be high only if they see the prospect of significant market expansion. For small pilot deals, international reinsurers have little or no financial incentive to participate. In most cases proportional reinsurance is used for new programs, as the insurer and the reinsurer are involved in taking risk in a contractually proportional manner, and this may be converted to a nonproportional program as exposures grow. Clearly, the retention capacity of the national insurer(s) involved with WII in a given country will dictate the levels of necessary reinsurance purchase.

If the product is going to be reinsured, obtaining a commitment from a reinsurer should be completed before the program is launched. It is advisable to obtain quotes from a number of reinsurers to get the most competitive terms for the contract, including both price for the deal and length of the contract (single year versus multiyear). These terms should also include the type of reinsurance agreement that will be utilized (stop-loss, proportional, and so on), the terms of that agreement, and the costs. In many cases these agreements will be made by reinsurers verbally, but it is advisable to try to obtain a formal written offer in advance of sales. It is important to discuss with the reinsurer the size of the deal and to establish in advance whether the offer of reinsurance is contingent on the particular volume of business. In many

BOX 6.3: Some Considerations When Providing WII Education and Marketing to Farmers

Client/product characteristics. For micro, unbundled, or standalone products, a long window should be allowed for marketing and education. For meso or bundled products, less time may be necessary. For the first group there should be repeated information sessions, question and answer (Q&A) sessions, peer consultations among the potential buyers, and retraining of sales staff.

Deadlines. The sales period for index insurance must close before the insurance coverage period actually begins. For weather insurance this means before farmers are able to predict how weather will impact their crop. A grace period between contract purchase and coverage is meant to control "antiselection" (also known as "adverse selection"), whereby farmers buy insurance only in bad years.

Integration with seasonal activities. In case of a loan-linked program, marketing and education are often more efficient when linked to existing orientation or training programs that banks provide to borrowers and potential borrowers.

Key messages. Marketing and education must focus on reminding farmers that they are vulnerable to weather risks and that they are likely to be worse off unless the risks are properly managed. It is important to demonstrate clearly how the insurance product could help them. This can be done by (1) asking the farmers to recall big weather events that affected their lives in recent years, (2) analyzing what would have been historical payouts had the index insurance contract been bought, and (3) comparing the index insurance product with the existing coping strategies in order to highlight the product's effectiveness and complementarities with existing measures.

Local delivery, local staff, local language. Marketing and education need to be brought to the client. Marketing sessions conducted in the local villages are generally most effective. It is critical that they be carried out by local staff in local languages, as this makes farmers feel more comfortable and increases understanding. Building trust with clients is a key component that will encourage take-up.

Preconceptions about insurance. It is not uncommon that the target clients will have negative preconceptions about insurance. This may be related to previous experience with agricultural or other types of insurance. It is important to anticipate these reactions from clients and prepare to address them effectively.

Cash availability. It is critical to consider clients' cash flow when marketing the product. Many clients will have access to cash only immediately following harvest. In those cases it may be necessary to sell policies well before the season or to make arrangements to finance the cost of the premium.

Source: Authors.

cases reinsurers will offer capacity only if business volumes meet a particular threshold.

6.2.8 Market the Product

The marketing of the product can be relatively straightforward or extremely challenging, largely dependent on the targeted clients. Client selection—micro versus meso—will dictate whether marketing needs to be done at the individual level to a large network of small farmers, or if it can be done to a smaller group that has greater outreach.

In those cases in which the identified client is an institution, an agribusiness, or a larger farmer, the resources required for marketing and education can be relatively minimal and will require only a limited number of meetings and interactions. On the other hand, if the clients are individual, smaller farmers, a relatively large amount of resources should be dedicated to marketing and development of delivery channels. This is one of the areas in which costs of a pilot program can increase significantly, with implications for financial sustainability. It is critical to strike a balance between the need to educate clients and the demands of running a financially sustainable program.

Where WII is being offered bundled into a loan or input package, the education and marketing requirements do change. Since clients ultimately are making decisions based on the entire package (for example, loan and insurance) and the insurance is usually a secondary element of the package, marketing will require a less detailed education program for the insurance component. This can lower the costs of marketing and may increase take-up of the product. However,

care must be taken to ensure regulatory compliance and true client understanding of their coverage.

If products are being offered to farmers, education and marketing are generally best carried out by stakeholders who regularly work with the farmers (for example, banks or input providers). Often these stakeholders will have previously provided education on new products, and that experience can provide valuable inputs for WII marketing. Product marketing and education are heavily influenced by the education level of clients, cultural considerations, and previous experience with insurance products. Box 6.3 summarizes a list of issues to be addressed when designing an education or marketing strategy for farmers who are not acquainted with agricultural insurance.

6.2.9 Finalize the Operational Aspects and Monitor the Program

The operational partners carrying out sales of the product will need to complete sales in sufficient time to enable them to provide policy and premium schedules to insurers and reinsurers. This is simply a list of the number of policies sold and the associated premiums. This requires communication from the client level to the insurer and, depending upon the operational arrangements in place, could involve a number of different institutions. In addition to recording the sales, maintaining the appropriate records, and transferring this information among the different parties, premiums will also need to be transferred from the clients to the insurers and reinsurers. This will need to be done relatively quickly and will require that transfer arrangements and the necessary business relationships for transferring the funds are established in advance.

6.2.10 Monitoring and Evaluation

The program development process is not completed once the policies have been issued. In fact, one of the benefits of WII is that the contract can be measured throughout the season. This allows underwriters and policyholders to monitor the situation as the season develops, which provides greater transparency for the clients, hopefully leading to greater trust between the parties.

Under the project the NMS should provide daily weather data on agreed dates. In cases in which a few days are missed due technical or other problems, parties need to have a previously agreed procedure to fill in the data gaps (for instance, by relying on a backup station or historical data). In cases in which equipment fails altogether and is missing for an extended period of time, the parties should consider including a termination clause for the contract.

BOX 6.4: Carrying Out a Dry Run

A dry run of a WII program might be a suitable option in various cases:

- When stakeholders are uncomfortable with a full operational pilot in the first year of operation
- When there is insufficient time to get the pilot running for the season

Starting a program prematurely can undermine future opportunities for implementing weather insurance. Therefore, even when there is sufficient time to run a full pilot, a dry run can be helpful for testing how a pilot will work and also for providing hands-on education and training to stakeholders and partners.

A dry run was carried out in Thailand (2006) with the Bank for Agriculture and Agriculture Cooperatives (BAAC). BAAC was interested in piloting a WII program in Nakhon Ratchasrima Province (a major maize area susceptible to drought). BAAC began collecting rainfall, yield, and other key agro-meteorological data, interviewing farmers, and designing a prototype rainfall WII contract. The stakeholders then decided to implement a dry run instead of a full pilot.

The reasons for this were twofold. First, the stakeholders wanted to test the marketing of noncompulsory and unsubsidized WII insurance to farmers to enable them to better assess the potential demand for the product. Second, the dry run allowed stakeholders to practice product marketing and customer enrollment and to develop a robust rainfall monitoring system.

Apart from operational insights, the dry-run provided the pilot team with the following:

- Input from farmers, which improved the prototype rainfall index
- A better understanding of the risk environment by BAAC and the farmers in the pilot area
- A clearer understanding of the role of the WII product within existing risk management measures

Source: Authors.

Basic contract monitoring sheets should be developed that can indicate whether there might be a payout under the contract. It is important that the insurer develops a contract monitoring sheet to be shared with project partners. Each time records of the weather parameter are received, the project manager in each organization should use that data to

update the sheet. The sheet should reflect how the contract payouts are developing as more and more data is fed into the model (index), a procedure called "marking to model." This information is important for all parties concerned. It helps the insurer set up his outstanding loss reserves and update it as more data is received. If communicated well to the farmers, it helps them gauge the extent of basis risk between their fields and the weather station, a piece of information that helps in refining contract design and any likely payouts.

In addition to contract monitoring, the project should be monitored by the stakeholders to detect any unanticipated outcomes, determine if all participating stakeholders are meeting their commitments, and evaluate the performance of the program in relationship to client's expectations.

6.3 DRY RUNS: A CHANCE TO EXPERIMENT

Experience has shown that many pilots are often implemented in situations that are less than optimal. This is hardly surprising when one considers the technical and innovative nature of WII and the relatively low sophistication of financial markets in many developing countries. An alternative to a full-blown pilot (and the inherent risk of failure) is to hold a dry run. This is effectively the same as a pilot, except that the clients will not have paid premiums and will not be holding real policies. Effectively it gives project implementers, insurers, reinsurers, and clients the opportunity to see how a WII contract performs without having any fiscal exposure should there be technical or practical problems incurred during implementation. An example of such a dry run is described in box 6.4.