Chapter 4: PREFEASIBILITY ASSESSMENT: "TO WII OR NOT TO WII?"

In the previous chapters we have sought to arm the reader with a rapid overview of agricultural risk management, where insurance can play a role in that, and some of the main issues that relate to the WII product. In addition, we have sought to highlight where WII is best suited within the bundle of risk transfer options for weather risk and what are some of the initial advantages and disadvantages or limitations of the product.

In this and the following chapters we seek to take the reader through the practical steps that are required before one would be in a position to actually have a structured and delivered WII product in a developing country. From practical experience, three distinct steps are required:

1. **Prefeasibility assessment**: desk-based and limited field work to assess the risk, assess the suitability of the product, and determine whether necessary preconditions are in place.
2. **Technical feasibility**: the collection and manipulation of data, construction of the index, and design of the product.
3. **Field implementation**: the distribution and sale of the product to policyholders, management of the index, data flows, and establishment of sustainability.

Before we embark on tackling these challenging steps, we should make a quick remark in the spirit of caveat emptor. From a development perspective (as opposed to a commercial insurance approach), it is highly undesirable to promote WII in isolation. It is highly unlikely that there will be a single vulnerability (crop variety and area), with a single problem (single weather risk), with a single solution (WII). In order to address the normal type of multiple vulnerability, multiple problem situations, development practitioners will likely need to employ a programmatic approach. In addition, creation and promotion of a suitable enabling environment from a government, regulatory, and policy point of view is equally important and more the ambit of development practitioners than the commercial sector.

4.1 EMBARKING ON THE PREFEASIBILITY ASSESSMENT

Strictly speaking, any risk management activity should "start from the beginning." It should consider all perils and risks (for example, pests, diseases, price risk, and so on), not only weather. Equally, it should run through a review of all the various mitigation, transfer, and coping options, not just consider insurance. For the purposes of this discussion paper, however, we will be looking at a situation in which there already appears to be a weather risk and the main thrust of the effort is to determine whether WII may be an optimal solution. On this basis, prefeasibility assessment should initially seek to answer six interrelated questions:

1. **What is the overall problem that the project is trying to address?** Is it a problem of low agricultural income, volatile productivity, limited access to finance, or vulnerability to disaster leading to a poverty trap? Invariably there will already be an answer, be it from a well-articulated demand that has given rise to a project itself (for example, a bank demands that farmers are insured before accessing crop loans), or well-established knowledge that has led to a consideration of weather risk transfer products (for example, certain areas in country A are drought-prone, thus having low agricultural productivity). Which leads to the next question:
2. **How does weather risk play a role?** In some cases, exposure to adverse weather is the predominant cause, while in others it is only a marginal factor. The answer to the second question largely relies in a simple analysis of available data. If the role of weather is significant, then:
3. **What other risk management activities are there?** Before seeking to launch a pilot, it is necessary to evaluate what other provisions have been made previously in the case of the weather risk, as this will have an impact on the success of the pilot. For example, if governments regularly cancel farmers'

debts in the case of drought, this will negatively impact both farmer and bank willingness to purchase WII in the case of drought.

4. **Are the objectives commercial insurance or social protection, or both?** The answer will lie partly in policy objectives, the issue of ability to pay, and the level of risk to be managed—the interplay between private and public goods. This issue must be addressed and resolved before making any progress toward technical feasibility, as the answer will fundamentally affect the design and structure of any WII product. In either situation:
5. **Is WII an objectively practical option?** This question involves a review of prerequisites and conditions and making a "value judgment" based on both qualitative and quantitative factors assessed through desk review and field work. If it is:
6. **Is there demand for WII, or more generally agricultural insurance?** While all the technical and even practical conditions may have been met, with no demand for the product, there will be no premiums and therefore the initiative will be at high risk of failure. Unfortunately, demand assessment is far from a precise issue and presents a number of challenges.

4.2 HOW DOES WEATHER RISK PLAY A ROLE? WEATHER RISK MAPPING

A preliminary and important step would be to conduct a "simple" weather risk mapping exercise. This can be done for the agricultural sector as a whole, at the regional level, or simply at specific locations, depending on the task at hand. The key objective is to identify:

- Weather risks (wind, temperature, rainfall, hail, and so on) that are indexable
- Type of crops subject to those risks (oil seed crops, vegetables, trees, and so on)
- Number and type of producers that grow those crops
- Location of weather stations
- Agro-climatic zones
- Altitude

As an example of this activity, consider the case of a project that has an overall objective of providing drought-affected farmers with access to insurance. At the basic level, a crude weather risk map can be constructed by overlaying a country's (or a region's) map with information on the distribution of key weather risks, the location and type of crop production and farmers, agro-ecological zones, crop yield levels, irrigated zones, and location of weather stations. Notably, the map should also illustrate the overlap of different problems if they exist in the same area (which would highlight multi-peril scenarios in which WII may not be suitable).

As the term "simple" suggests, the exercise is supposed to be a hands-on, rapid assessment. It should be sufficient to base the exercise on synthesizing information that already exists, rather than conducting new studies or analyzing raw data.[8] This information is general publicly available from organizations including the Ministry of Agriculture, the National Meteorological Service, and the National Statistical Bureau. In some cases, the biggest challenge will be to make use of these existing data and present them in a new and integrated geographical information system (GIS) format.

For a more informative version of the map, additional layers of information could be added—for example, areas of concentration of poverty incidents, poverty maps, network of rural roads, coverage of financial institutions, coverage of existing development programs (if available), and so on. The integrated picture from these data will be invaluable to identify the most appropriate areas for the project intervention. For an example of terms of reference for a risk mapping in agriculture, see Annex 2.

Figure 4.1 gives examples of existing information and maps that have been used in a weather risk mapping exercise in Jamaica.

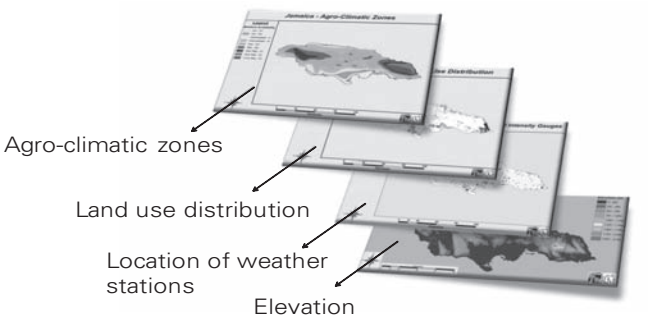
4.3 ARE THE OBJECTIVES COMMERCIAL INSURANCE OR SOCIAL PROTECTION, OR BOTH?

WII development can be guided by commercial or social objectives, or both. These objectives have a fundamental impact on how the insurance product is constructed, financed, and delivered. At the outset, a fundamental distinction needs to be made between insurance designed to help poor people protect their livelihoods and assets, and insurance designed to help households with viable farm businesses manage their risks.[9] Having a clear social objective, insurance that protects

8 For an example of a weather risk management strategy design based on such information see: World Bank (2010), Jamaica: Towards a Strategy for Financial Weather Risk Management in Agriculture at http://www.worldbank.org/agrm.

9 These two types of insurance are called *protection* and *promotion* (or *development*) insurance in the paper "Sustainability and Scalability of Index Based Risk Transfer for Agriculture and Rural Livelihoods," developed by World Food Programme and International Fund for Agricultural Development (WFP-IFAD).

FIGURE 4.1: Maps Used for a Prefeasibility Report in Jamaica



Source: Jamaica: Towards a Strategy for Financial Weather Risk Management.

lives and assets from catastrophic losses inevitably has to be subsidized and requires special delivery channels that should be aligned with relief or social safety net interventions. On the other hand, insurance that promotes agricultural development should take into account long-term commercial sustainability and be channeled through private intermediaries. However, even with commercially viable farmers, it is still unlikely to sell insurance on an unsubsidized basis, unless it is linked to a value proposition.

Often, situations require a balance of both social and commercial objectives. This may be due to the need to address many strata of beneficiaries, or the inherent mixed nature of a project (for instance, agricultural insurance development for smallholders), or mainly as a precondition to make the project sustainable in the long run. Considering a framework for a public-private partnership will be very important for these cases. Box 4.1 illustrates a public-private partnership in index insurance in the livestock sector.

BOX 4.1: Mongolia: A Public-Private Index Insurance Partnership

The insurance program under this project combines self-insurance, market-based insurance, and social insurance. Herders retain small losses that should not affect the viability of their business, while larger losses are transferred to the private insurance industry, and only the final layer of catastrophic losses is borne by the government.

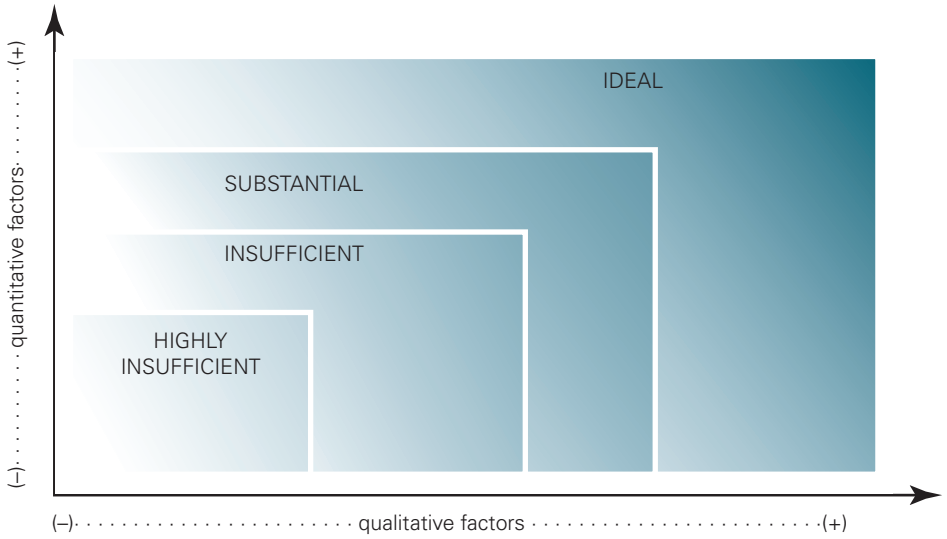
The livestock risk insurance (LRI) is a commercial risk product, sold and serviced by insurance companies. Herders pay a fully loaded premium rate for this product. Insurance companies pool these risks and use both global reinsurers and the Government of Mongolia (GoM) to protect extreme losses in the pool. This product pays out when the sum mortality rates exceed specified "trigger" percentages (6 percent). The LRI premium rates are developed using historical livestock mortality data. Payouts are made based upon a mid-year estimate of mortality by area and species. The maximum payment for the LRI is set once the estimate of mortality reaches a specified "exhaustion point" of 30 percent. Losses beyond that point are paid by the GoM with the government catastrophic cover (GCC). This safety net represents the subsidy for the Index-Based Livestock Insurance Program (IBLIP). The intent is for the GoM to pool these risk and obtain global reinsurance on the pool. It has been demonstrated that this is a more efficient way to provide subsidy. Additionally, should the GoM decide that it can no longer provide this subsidy, the LRI program can remain as a commercial insurance product. This design is unique and may have significant value for using subsidy to "crowd in" an insurance market.

Source: Mahul, Oliver & J. Skees (2006). Piloting Index-Based Livestock Insurance in Mongolia. The World Bank and personal communication with Jerry Skees, July 27, 2011.

4.4 IS WII AN OBJECTIVELY PRACTICAL OPTION? A PRELIMINARY DESK STUDY

The crude weather risk mapping exercise should identify whether, prima facie, WII may be a potential option (hopefully among a bundle of other measures). However, given the technical complexities and data requirements of WII, the next step is to assess whether a number of preconditions to create a conducive environment for WII are available. Of course, this is not necessarily a "go or not go" situation; there will rarely be an ideal situation, just as it would be rare for there to be absolutely no basis for WII application (at least theoretically). It is therefore important to understand the necessary and sufficient conditions for weather index insurance in a country and also to appreciate how one can diagnose a given case as an "ideal," "substantial," "insufficient," or "highly insufficient" proposition. Judging the circumstance in a country is certainly a nebulous process, arguably based more on art than science. For example, while 30 years of weather data are preferred, it may still be possible to proceed if other positive and mitigating conditions are in place. Additionally, steps can be taken to improve a situation. For example, if initial project champions are absent, one could design and implement an education campaign to drive the process.

FIGURE 4.2: Degrees of Acceptability of a WII Proposition



Source: Authors.

As we will see in the following section, the prerequisites and conditions are a mixture of both qualitative and quantitative factors. When considering the conduciveness of any particular situation, it is useful to consider how these two types of factors interrelate. Figure 4.2 highlights the interaction of the factors and their relationship to the issue of "go or not go."

4.5 PREREQUISITES AND CONDITIONS

In the following section we have highlighted six main areas in which data or information is required and can normally be ascertained through a desk review or through the use of remotely accessed local knowledge.

4.5.1 Weather Data and Monitoring

Clearly, given the reliance of an index on sound data, any data that is to be used must adhere to strict quality requirements. A long, "cleaned,"[10] and internally consistent historical records are needed for a proper actuarial analysis of the weather risk—ideally at least 30 years of daily data. In addition, WII contracts require a dense, secure, and high-quality weather station network, especially if it is planned to try and scale up an initial pilot to surrounding areas. Ideally such a network would consist of automated stations that report daily to the World Meteorological Organization (WMO) Global Telecommunication System (GTS) and undergo standard WMO-established quality control procedures. In box 4.2 we have sought to provide a provisional checklist that may be useful when assessing weather data and infrastructure.[11]

4.5.2 Agronomic Data

Under a WII contract, sound data is needed to assess crop vulnerability. In order to be able to design an index that will truly be representative of loss, crop data should be available in relation to the specific variety being planted in the given area, as opposed to more general data that might not represent the crop development characteristics of the actual farmers' crops. Linked with this, detailed information is required on the variety's crop cycle, as this will be an important input to the crop model that will be used for estimating the index. Obviously, multicrop production systems are particularly challenging, with different crops and varieties being grown. In such a case, data should be collected on the most important crops. Once the information is analyzed, a decision will have to be made whether the whole crop system is indexable. Normally this is not the case because of basis risk. In this situation it may be more practical to design a catastrophic product that provides for compensation but does not seek to compensate for actual loss.

10 "Cleaned" means replacing missing and erroneous data before it can be used.

11 For an example of terms of reference for the creation of gridded weather data ("synthetic"), see Annex 3.

BOX 4.2: Checklist for Assessing Weather Data and Infrastructure

To make the assessment, the relevant National Meteorological Office (NMO) will need to share its data. Many NMOs provide data catalogs, which can be requested online, usually at a cost. It will only be practicable to request data from a sample of weather stations in a few potential pilot areas. This, however, will give a sense of the overall quality, as well as consistency, of the data. Additional questions can also be asked at this stage. Usually, the following should be determined:

- Weather parameters being recorded (rainfall, temperature, solar hours, wind speed, and so on)
- Type of equipment used (automated versus manual stations)
- Availability of historical time series (approximately 30 years are needed)
- Missing data per weather station
- Sufficient quality standard of data and access (data cleaning, reporting etc.)
- Location of stations and radius of coverage, plus whether they were relocated during the period.
- Are the weather stations reasonably close to potential customers?
- Are the weather stations secure from tampering?

Key issues to be borne in mind:

- **There is no standard radius of insurable area around a weather station**. The degree to which a station truly represents weather for a given radius depends on topography and existence of micro climates (the latter being partly a function of the former). In many cases the actual assessment of radius will depend on site visits and local interviews.
- **Most NMOs are severely resource constrained and seek to charge for data**. In some countries agreements have been signed between the NMO and the Insurers Association (or individual insurer) that details the fees, provision of data for contract pricing and data monitoring for determining potential payouts. This is a beneficial situation, adding to transparency, accountability and sustainability and should be encouraged.
- **Some NMOs have analytical capacity in agro-meteorology and may ask to assist in contract modeling**. A practical approach to this is to propose a partnership between the NMO and an agricultural college and the provision to them of training contract design. This inclusive approach will ensure data provision and aid sustainability, especially though the development of local contract design capacity.

Source: Authors.

4.5.3 Financial Data

If a WII contract is seeking to indemnify for actual loss, then a decision as to the loss to be covered will need to be made. In any event, data will be needed to calculate the level of loss per farmer across the whole area to be covered by the index. There are three main types of potential loss that a WII product could seek to cover. First, input costs are based on input usage and unit cost for those inputs. Second, credit amount is a factor of input costs plus any additional financing that the farmer required. Third, loss of income is based on the lost production and a set value per unit of production. Therefore, data will be required on input costs, costs of labor, interest rates, and so on.

4.5.4 Status of the Local Insurance Industry

In many developing countries, the local insurance industry has little experience of or capacity to underwrite traditional and index agricultural policies. An initial assessment of the industry will inform future approaches in terms of consultations, capacity building, and technical assistance that may be required, as well as highlighting potential interest in offering such products.

4.5.5 Existence of a "Champion"

Although not strictly a desk-based activity, it is very important to establish, as soon as possible, who or what will be the local driver in country for the activity. The implementation of a WII product requires coordination of a large number of stakeholders and a larger number of activities to be undertaken. It is imperative that the lead on these activities is taken by a local stakeholder, otherwise sustainability will be at risk from the very outset.

4.5.6 Prospective Delivery Channels

Identification of the primary product delivery channel at an early stage is preferable. Depending on the legal framework,

product design, institutional capacity, and interest in any given country, the delivery channels for WII could be:

- Ministry of Agriculture
- Insurance companies
- Insurer intermediary
- Commodity Board
- Financial institutions
- NGOs

4.6 IS WII A SUBJECTIVELY PRACTICAL SOLUTION? THE INITIAL FIELD WORK AND CONSULTATIONS

The goal of this step in the process is mainly to assess the "qualitative" aspect of the conducive environment and also to clarify any outstanding issues highlighted during the desk review process. For example, while one can see how dense the network of weather stations is in a country from a map found online, one cannot assess the willingness of the NMO to continuously supply data for an insurance project. Likewise, while insurance law does not prohibit index instruments, it is not a given that the insurance regulator will automatically support a WII pilot. This qualitative assessment is more about the art than the science, but is a critical step in making decisions. The key qualitative issues that need to be assessed generally cover the following:

1. **Definition of insurable interest and objectives**
   - What are the objectives of the government or champion for agricultural insurance?
   - What level of cover is intended? Catastrophic events, extreme events, or more frequent, lower impact?
   - Type of coverage? Crop or enterprise specific or consequential in nature? Loss of assets, income, costs of production, credit amount or compensation not linked to actual loss, lost opportunities for income generation (for example, farm labor tied to affected crop, inability to access to markets), business interruption, damage to infrastructure, costs of disaster relief, and so on.
2. **Defining the insurance beneficiary (or target group)**
   - Who might be the policyholder? Individual farmer, cooperative, bank with aggregated portfolio, a regional government or even central government?
3. **Defining the crops, risks and areas to insure**
   - Food crops or cash crops? Annual or perennial?
   - Risks to be covered?
   - What districts, provinces, departments?
   - Coverage: named perils, multi-perils, or indexed risks?
4. **NMO**
   - Is the NMO cooperative and interested? What are they requiring for their services?
   - Are there at least pockets of high-quality weather data, not only in terms of the historical records, but also of how data cleaning and transmission are routinely handled?
   - Where are the "usable" weather stations in relation to the potential farms insured? What does the local topography look like?
5. **Mechanisms to reach farmers**
   - Which channels will be used for payouts?
   - Which channels will be used to collect premiums?
   - What financial institutions, regulators, agribusiness companies are present? Anyone with keen business interest in supporting the product?
6. **Institutional assessment**
   - Which institutions will operate the insurance?
   - Who will subscribe the risks and what is the capacity?
   - What is the operational capacity of various players?
   - What information systems are in place?
   - What are the attitudes and perspectives of the insurance regulator?
   - Is the legal and regulatory framework conducive to index insurance?
   - Are government policies consistent with the objective of the index insurance product?

This qualitative assessment can be conducted within a one- to two-week time frame. It involves meeting with key stakeholders including insurers, banks, farmers or farmer organizations, NMO, insurance regulators, and so on. In order to cover the varied topics and technicalities, it is advisable to include an expert in agriculture or agro-meteorology and another person with a financial background (preferably in insurance or agricultural finance). In order to ascertain the realities at the farmer level and as a provisional step to consider the potential of basis risk, it is extremely useful to hold farmer focal group meetings using a structured questionnaire.

These prefeasibility stakeholder consultations are usually the first face-to-face encounter between a project team and key stakeholders. Apart from enabling a first-hand understanding

of the conditions on the ground, the consultations often present the first opportunity to introduce the concept and application of WII. However, given that most stakeholders will not have encountered the product before, care needs to be taken to avoid raising expectations by advertently or inadvertently "overselling" the product at this stage. As we have mentioned, while WII has the potential to provide a risk management solution in many contexts, it is not a universal product that is suitable to all crops, problems, and beneficiaries. Overselling the product at this early stage may create much needed enthusiasm to implement a pilot (the all-important champion issue), but the trade-off is likely to be an expectation that is unrealistic and unmanaged. Such overexpectations can become a source of reputational risk for a project team, as well as for donors (if the project is externally supported).

4.7 IS THERE DEMAND FOR WII—OR MORE GENERALLY FOR AGRICULTURAL INSURANCE?

Arguably, demand assessment is the most challenging task of the prefeasibility process. While the project team can assess the initial practicalities and availability of a "conducive environment," demand is the aspect that cannot be answered definitively before a project is actually initiated. However, some groundwork on demand assessment should still be done as part of a comprehensive prefeasibility assessment. After all, if no one wants or considers that they need the product, then it will be a short-lived initiative.

There is no established methodology used for demand assessment for WII or for agricultural insurance products more generally. Understanding what drives demand for insurance, especially for farm households, is a subject that has drawn the attention of the academic, commercial, and development communities alike. As a result, a number of different approaches (both formal and informal) have been developed to assess demand. The basic outline of the three main approaches is discussed briefly below.

4.7.1 The Academic Approach: "Willingness to Pay" Assessment

The "willingness to pay" (WTP) concept has been widely considered in the literature on rural risk management. When farm households cannot manage weather risks on their own or within their community, there is a prima facie hypothesis that there should be demand for insurance. Economic studies that examine how rural households manage risks demonstrate that they already pay high opportunity costs for the risk-averse choices they make. In other words, the working poor already pay for the risks they face by making suboptimal choices and therefore there should be a WTP for insurance.

BOX 4.3: Examples of WTP Analysis for Weather Index Insurance

Sarris, Karfakis and Christiaensen (2006) applied the WTP approach to study rainfall insurance in Tanzania. The paper explores empirically the issue of the demand, namely the WTP, for rainfall-based insurance, in the context of a poor agrarian economy, with rural households significantly dependent on agricultural commodity risks. Using data from household surveys in the Kilimanjaro and Ruvuma regions of Tanzania, the paper ascertains the nature of the weather-related risks faced by smallholder growers in the context of their overall risk environment. It then estimates their desirability for weather-based income insurance as well as their demand for it by utilizing contingent valuation (CV) techniques. The results indicate that producer households are affected by a variety of shocks, of which weather-related ones are very important. The paper estimates the demand for weather-based crop insurance in each of the two regions and indicates that there seem to be considerable welfare benefits (net of costs) for such insurance, but differentiated according to regional rainfall instability, as well as producer incomes.

Source: http://www.fao.org/es/esc/en/378/444/highlight_451.html.

The academic approach can be interpreted in many ways and developed with different variants, depending on where the emphasis of the research is. It often includes formulae to capture the impact of crop insurance on the producer's expected income and variance of income. These impacts are evaluated in the context of a model of producer welfare, which features both price and yield uncertainty, as well as risk aversion on the part of the producer. Though these methods have been amply applied for crop insurance in developed economies, it is a complex exercise for developing country rural households, given their income diversification patterns, multicropping systems, and informal methods of managing risks. Box 4.3 illustrates one particular example of a WTP exercise in the context of an index insurance product in Tanzania.

The academic nature of this analysis requires extensive data collection and interviews, and this has notable implications for the costs of an initiative and also the length of time taken

to undertake such a study. For these reasons, a WTP study would more normally be conducted as part of a formal feasibility study for WII.

4.7.2 The Commercial Market Assessment Approach

This approach applies a market demand assessment technique similar to that used by commercial insurers. The key question is whether there is a business case for the product. This can be assessed by pursuing some or a combination of all the following analyses:

- Past and existing levels of insurance coverage
- Farm structure: how many farmers, distribution of land holding sizes, subsistence versus commercial farming, and so on
- Credit coverage and gaps where insurance may help unlock more credit
- Interest from agribusinesses and agricultural banks

The crude weather risk mapping exercise (discussed above) can be adapted to highlight potential demand using the commercial market assessment approach. However, while some of the questions can be answered by the weather risk map and the desk review, many still require a qualitative, on-the-ground assessment. During field visits it is often found that what looks good on paper can be much more complicated in reality. Interviews with farmers and local staff of agricultural banks or agricompanies are extremely valuable. Apart from understanding the nature of risk that potential clients face, a field visit enables a demand assessment team to understand current local risk management practices that might reduce demand for insurance. Equally, it can lead to ideas on how to package and deliver the insurance product in a way that will attract potential clients. An example of this approach is the Indonesia Weather Index Insurance Study for Maize Production conducted by the IFC (2009), (see box 4.4).[12]

As in the case of the academic approach, this can form a key section of a formal feasibility study. However, due to its more rapid and less resource demanding nature, this form of assessment is more apt for the prefeasibility stage.

4.7.3 The Development Organization's Approach: "Dry Running and Pilot Testing"

While the above approaches can provide valuable clues to a potential take-up of WII, it is often felt that effectively assessing demand cannot be done as a hypothetical exercise. For most recent WII projects in developing countries, the act of "dry running" or "piloting" itself is treated an empirical demand assessment. This entails:

- Farmers being provided with real prototype insurance products
- Provision of educational and marketing sessions
- Real purchasing decisions being made

As there are real transactions taking place, it is arguable that demand assessment through pilot implementation provides the most tangible evidence of how farmers take up WII and what are the key factors that contribute to it. However, these are clear disadvantages to this approach. This pilot exercise does require organizations to commit resources to an operation without a certainty of the project's result. In the case of insurance companies, participating in a pilot is risky in terms of financial returns.

If the decision is taken to use a piloting approach, then the demand assessment will not be part of the desk review and consultative activities, but will be integral to the implementation phase of the weather index insurance project itself. Chapter 7 will discuss the dry run and pilot implementation issues in further detail.

BOX 4.4: Story of Maize Farmers in Lombok, Indonesia

The Perigi village has a population of 10,000 people that farm around 6,000 hectares of irrigated land and 400 hectares of dry land on which maize cultivation is carried out. The main production risk is drought. Pests and diseases seem not be a relevant threat to maize production in this area. According to maize producers, if dry spells of three to five weeks are experienced around establishment and flowering, the crop is likely to fail.

Maize farmers in the Perigi village are cash constrained and finance their production activities through informal credit at an interest rate of 50 percent every four months. They do not approach local financial institutions for credit because they would not be considered eligible as they don't have land titles to serve as collateral.

Perigi farmers clearly stated that they would be ready to pay an insurance premium of over 10 percent if this enabled them to access the formal credit channels that charge an annual interest rate of 15 percent.

So, farmers are interested in insurance, if it can help unlock formal credit and lead to interest savings.

Source: Authors.

12 IFC (2009). "Weather Index Insurance for Maize Production in Eastern Indonesia." International Financial Corporation. The World Bank. Washington, DC.

Regardless of the approach one takes, a caveat should be made on demand assessments. Demand for insurance cannot be generalized. While a demand assessment may suggest a potential take-up in the area(s) studied, it does not necessarily imply broader take-up. In other words, demand in one area is not a good indicator of general scalability.

4.8 SUMMARY: A DECISION TREE

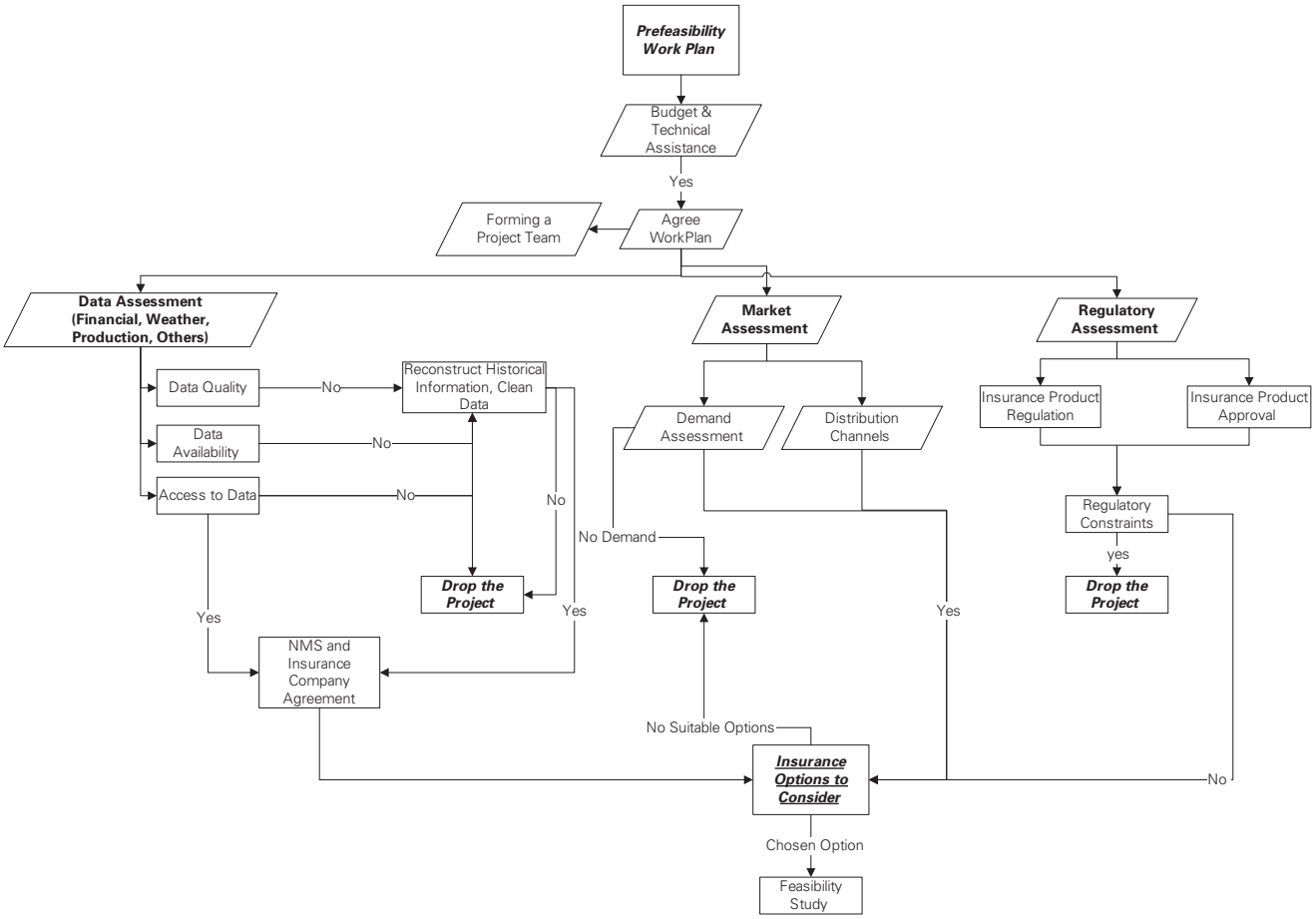
As one can see from the foregoing, the process of prefeasibility involves the consideration of multiple factors, both qualitative and quantitative. It requires the application of art as well as science. It requires decisions on trade-offs and "less than best" propositions. It is, in effect, a challenging exercise, but one that is crucial before embarking on an activity that will require serious financial resources and dedication of a specialist team for an extended time period. In order to assist parties considering embarking on such an activity, figure 4.3 presents a simplified decision tree to try and formalize the prefeasibility procedure.

While the decision tree is merely illustrative, it seeks to show the main decision points when a project can encounter unsolvable constraints and when a proposed WII project may need to be reconsidered. However, as mentioned previously, there are no clear-cut rules on decision points, and each of the above components or steps needs to be analyzed and judgments made at various stages of the process on the viability of progressing with any project. Annex 4 contains a suggested step-by-step checklist for conducting a prefeasibility pilot project.

KEY POINTS

- This chapter is not a "cookbook," but rather a pointer as to some of the key elements that need to be considered during a process of assessing the prefeasibility of any proposed WII project.
- Prefeasibility assessment should be a concise, but informative and flexible process. The overall objective is for a project team to understand necessary and

FIGURE 4.3: Decision Tree for a Prefeasibility Study



Source: Authors.

sufficient conditions for WII in a country, not finalize every issue.

- The prerequisites and conditions mentioned are a mixture of technical and practical issues. Some of them are objective and some subjective in nature.
- There are three main phases to a prefeasibility assessment: desk-based objective assessment, field work subjective assessment, and demand assessment.
- Finding the answers or making decisions about trade-offs can sometimes require the application of more art than science.
- It should be possible to categorize the level of suitability of WII. Ideally, one should be able to diagnose the operating environment as an "ideal," "substantial," "insufficient," or "highly insufficient" situation based on a given set of preconditions. However, it is also important to recognize that there is no standard set of preconditions, and the key is to understand the range of acceptability when something is less than ideal.
- Prefeasibility assessment is also about identifying the appropriate product. The exercise will highlight the options available for the intended developmental or commercial project purpose. By the end of the exercise, the team will have a set of options (with pros and cons) and can decide which option to push for the feasibility phase.
- It should be noted that prefeasibility assessment does not always have to lead to "doing something." One of the options could be "doing nothing" if the team finds no grounds for it.