

# Talking About Money



No.5

## EXPLAINING HOW TO MANAGE RISK

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## Introduction

This booklet is part of a series that is designed to be used by farmer discussion groups, farmer field schools and extension or advisory officers involved in agricultural or rural development.

The ability to adopt or introduce changes to agricultural production methods and non-farm enterprises depends on the availability of money. It is, therefore, very important for farmers to be able to think carefully about their financial circumstances. Predicting costs, prices, profit margins and cash flow patterns is vital for planning and decision-making and the poorer the farmer, the more important it is.

These concepts need to be explained in a way which small scale, possibly illiterate, farmers can understand. The "Talking About Money" booklets aim to introduce financial topics to farmers using a variety of tools, some of which can be used even when people are not able to read or write. The concepts are intended to provoke discussion and be used in a participatory manner.

Field officers involved in giving agricultural advice in developing countries are most commonly technical experts of some kind, e.g. agronomists, livestock, irrigation or engineering specialists. They usually do not have much experience in giving advice about money and this topic is generally avoided, apart perhaps from some simplified profit calculations. It is hoped this series will help them "talk about money" more readily and enable them to give good advice to farmers about the use of financial services for saving, borrowing and managing risk.

The figures used in this book are largely fictitious and should not be taken as representative of any particular currency at any given point in time. The \$ symbol is used simply as a generic money symbol. If the book is being translated for a specific local context, the figures can be replaced with appropriate amounts in the local currency.

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# 1 WHAT IS RISK?

Aim:

- To show how risk is part of all decision-making
- To review the sources and consequences of risk

## Taking decisions



Life is about taking decisions. Every day from morning to night we face choices and have to decide what we are going to do.

Lots of decisions are purely personal:

- What time to get up?
- What jobs to do today?
- What food to organise?
- What things to buy?
- Which way to travel - on foot, bus?

If you are running a business though, you will face many more choices and a constant need to take decisions. That is your main task as a business manager. A simple definition of management says: "Management is about deciding what you want to do, and then doing it."<sup>1</sup>

Let's think of some of the decisions a farmer might be confronted with on any working day:

- What task to work on today?
- What to do about the sick cow?
- Whether to go to market today?
- Which variety of seed to purchase?
- Whether to hire extra labour for weeding?
- Whether to buy a new ox yoke?



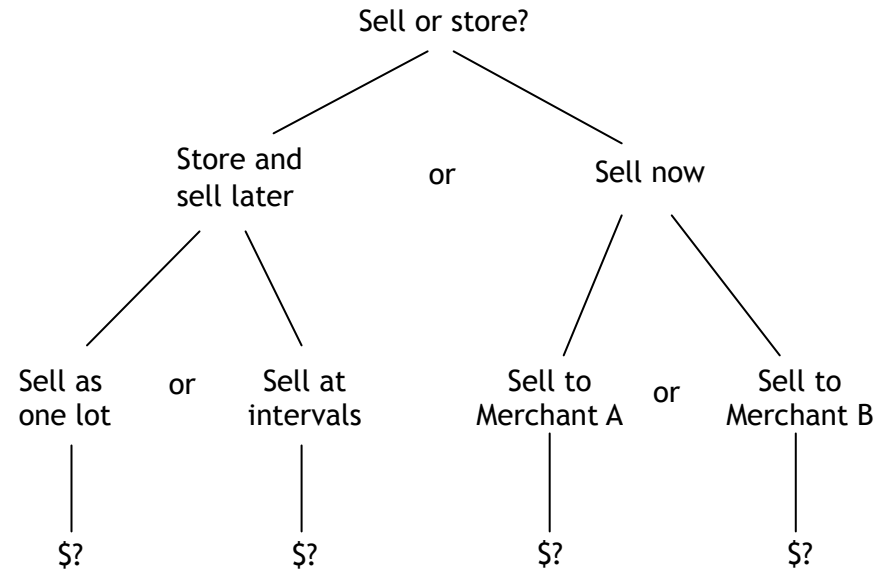
And so on... the list could be endless.



Think about everything you have done in the last 24 hours. Can you write down ten decisions you have made?

Some decisions might be quite trivial, while others might concern major issues that will affect the business significantly. You may have a lot of options to consider or just a few. You may find one decision has a lot of other decisions embedded within it.

For example, considering whether to sell or store a crop involves a number of decisions and each decision will have an effect on the returns from this crop:



The question is; how do you decide what to do when confronted with a choice?



Discuss this with your colleagues and see if you can work out how you make your decisions.

You may have decided that you can only answer the question if you distinguish between big strategic decisions that will affect your business for a long time and everyday tactical decisions that usually only have short term impact.

For the everyday decisions you might have answered that you rely on your judgement and past experience. You decide because you have done it before and are fairly certain of the outcome of that action. You might need some new information, such as a weather forecast to help you decide whether to start planting or harvesting on a particular day, or current prices to help you decide whether to sell now or not.



Strategic or long term decisions generally require a lot more thought. Starting or stopping an enterprise; changing the production system; investing in a machine or specialised building; opening up some new land; these are all decisions that can have an influence on your business and the rewards from it for years to come. Past experience is less useful in these decisions. You usually have to collect information from other people by observing their experiences, talking to them, or reading what they have written in order to get an insight into the possible outcome of the action you are considering.

Whatever the circumstances decision-making is characterised by the fact that decisions are based, at least in part, on information from the past about events that will happen in the future. As a result actual outcomes may be better or worse than expected.



If we knew what the outcome of a decision was going to be, it would be really easy to decide what to do but we don't! Have you ever said "If I'd known this was going to happen, I would never have done that"? This is what we call risk. You have to take decisions knowing there is a risk the outcome will not be the one you expect.

## Sources of risk

Let's take some time now to consider where the risks come from when you are running a farm business. Farming is often thought of as being particularly risky.



*Can you write a list of the things that most affect how successful your farm enterprises are each year?*

Does your list include some of these things?

- Rainfall
- Pests and diseases
- Timeliness of planting
- Cost of inputs
- Family health
- Market demand
- Product prices
- The government

You might also have included things like fire, wind, theft, machinery breakdowns, input availability, changing technologies or the availability of credit.



*Now have a look at your list and put a number beside each risk factor to represent its significance as a source of variability in your business. Number 1 would represent the most important factor; number 2 the next and so on.*

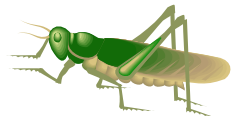
*If possible compare your ranking with that of other farmers in your study group. Do you all agree?*



It is very likely that, if you are a crop farmer, you ranked rainfall or other weather events at or near the top of your list. There can be too much rain or too little; it can arrive late or early and stop too soon or go on too long. This variability can lead to droughts or floods, both of which severely affect crop growth and resulting yields. Wind and rain can lead to soil erosion and badly damage crops during severe storms.



It is the exposure to weather events that makes farming so uniquely risky and while seasonal patterns of rainfall and temperature are well known, extreme events are generally unpredictable.



Pests and diseases which can kill crops and livestock or reduce their yields are also major risk factors in farming. Farming is based on the production of living organisms which are all vulnerable to attack by other organisms.

Timeliness of critical operations like planting is another production risk. Delays may be caused by machinery breakdown or adverse weather but should often be preventable with good preparation. Production risks always rank highly in their significance to farmers but market risks are also very important.

The risk of changes in the cost or availability of inputs can have a big effect on a farmer's production potential. Higher input prices may stop a farmer buying sufficient fertiliser, sprays, livestock feed or medicines to achieve optimum yields. A lack of spare parts or shortages of fuel may cause serious delays.



However market and price risks are probably more significant for the products that farmers are trying to sell.

Price fluctuations can occur within a marketing year as well as between years. Some seasonal or cyclical trends can be predicted but other fluctuations may result from unexpected competition, over-supply or changing demand. Higher prices mean higher income but lower prices or a lack of demand will result in reduced income.



Following production and market risks you may have ranked family health or human risk as highly significant. Accidents, illness or death can severely disrupt work on the farm and make it difficult to achieve the results that had been expected. Human risks are largely unpredictable.

Financial risks are additional risks faced by farmers that rely on borrowed funds to operate their business and may be ranked highly by them. Loan terms and conditions and interest rates become significant risk factors in this situation and repayment obligations can place pressure on a farmer's cash flow.

Legal and social risks include things like government price and income support programmes, trade regulations and environmental policies. All of these can affect markets, prices and production decisions but when policy changes are made farmers should have the time to take them into account in their decision-making.



Theft and fire may only be occasional events but can be very damaging if they affect a farmer.

### *The consequences of risk*

So anyone who chooses to invest in a business activity knows that the outcome of his or her enterprise is affected by risks. Investment decisions always involve expectations about future prices, costs, yields and other factors, which may or may not come to fruition.

If outcomes are good, a farmer will usually be able to feed his family and generate a profit which can meet other household requirements and enable loans to be repaid or the business to be expanded. If outcomes are poor, the reverse is true.

People vary in their ability to cope with poor outcomes. If a business makes losses it becomes difficult to meet family needs and may lead to a reduction in the capital available to continue the business. This effect is much more marked when borrowed capital is used to run the business.



In Book 2 of this series we looked at this problem in the section on “Borrowing to grow”. Do you remember the Credit Game? This encouraged you to look at the consequences of variable returns on businesses with different levels of borrowing.

Here is an example from that game showing the effects of a positive return of 20% on three businesses with different levels of borrowing:

Own capital at start of year	1000	1000	1000
Amount borrowed	0	500	1000
Total capital invested during year	1000	1500	2000
Annual return on total capital @ 20%	200	300	400
Less Interest on loan @10%	0	-50	-100
Net profit	200	250	300
Less Family drawings	-125	-125	-125
Net addition to capital at end of year	75	125	175
Total capital at end of year	1075	1625	2175
Less loan repayment	0	-500	-1000
Own capital at end of year	1075	1125	1175

As you can see the owner’s capital has grown in each case and it has grown faster as a result of borrowing more capital to invest. The farmers are all better off.

Now let’s look at the same three businesses and see what happens if, instead of profits, they make losses. We will assume a negative return of 15%.

Own capital at start of year	1000	1000	1000
Amount borrowed	0	500	1000
Total capital invested during year	1000	1500	2000
Annual return on total capital @ -15%	-150	-225	-300
Less Interest on loan @10%	0	-50	-100
Net loss	-150	-275	-400
Less Family drawings	-125	-125	-125
Net reduction in capital at end of year	-275	-400	-525
Total capital at end of year	725	1100	1475
Less loan repayment	0	-500	-1000
Own capital at end of year	725	600	475

Each owner suffers a reduction in capital, partly to cover the loss but also to cover family drawings. You will see that the business that borrowed most loses most and could well struggle to survive. Of course it is very likely that a business in this situation would fail to repay the loan in full.

So risk bearing ability depends greatly on the financial position of a business. The higher your equity share the greater your chance of surviving unexpected losses and continuing to invest in your business. Nevertheless borrowing may be necessary if you want to increase your income and the important thing will be to calculate the risks carefully and ensure you can manage them.



*Why not play the credit game again and remind yourselves of the effects of variable returns on a business?*

## 2 HOW CAN WE MANAGE RISK?

### Aim:

- To explore the steps you can take to reduce your exposure to production, marketing and other types of risk
- To review how a business can recover from any losses

### *Reducing your exposure to risk*

So we have seen how every decision we make carries the risk that the outcome will differ from that which we hope for. If it is better than hoped we are generally very happy! Our main concern, however, is with the situation when the outcome is worse than we hope.

To deal with this we need a risk management strategy. This means taking action to reduce the chance of an unfavourable event occurring or to reduce the adverse consequences if the event does occur. Do you think you already do that - try to minimise the risk of loss in your business?

Let's suppose you are a farmer growing a number of crops and rearing some livestock. This means that weather, pests and diseases are likely to be important sources of risk affecting your production levels.



*Can you think of five ways in which you can try to minimise the impact of poor weather conditions or attack by certain pests and diseases?*

Perhaps your list contained some of these suggestions:

- Having a good crop rotation system to reduce disease spread
- Growing crops and varieties that have always given reliable yields on your farm in the past
- Having sufficient grazing or feed reserves for your livestock
- Using pesticides, fungicides or livestock medicines to control pests and diseases
- Storing water and using it to irrigate crops

You might look at your list and think you have simply defined how to be a “good farmer” and this is true. Good farmers are always better able to cope with risks because their production methods are usually more resilient and able to withstand shocks.

The fact that farmers usually grow more than one crop is both a good practice from a husbandry point of view because it allows for crop rotation and it also reduces risk because the farmer has not “put all his eggs in one basket”. In other words the farmer's income is not totally dependent on the production results of a single enterprise.



A good farmer knows his land and which crops are best suited to which plots. He would grow drought resistant crops or varieties in areas prone to dry out. He might also take steps to improve his soil by applying mulches and manure to increase organic matter. Using conservation agriculture techniques will improve soil productivity by minimising soil disturbance and maintaining permanent soil cover.

Good farmers make sure machinery and equipment is properly maintained which reduces the probability of breakdowns and have a store of spare parts to enable repairs to be made quickly.



Likewise maintaining stocks of chemical sprays and spraying equipment will enable a farmer to respond quickly to the incidence of pests and diseases in crops and dips and medicines will keep livestock healthy.

Many good husbandry means of reducing risk will lead to better yields and perhaps increased income as well, but some strategies may simply increase costs and thus reduce income. Some decisions such as sticking to low risk crops may result in lost opportunities for increasing income by growing higher value crops.

So production decisions to reduce risk may involve choosing a slightly lower income in order to secure a more stable income. Now let's turn our attention to some of the other sources of risk. Most farmers feel that they are at the mercy of markets and cannot influence the prices they receive. However, there are actions they can take to strengthen their position as sellers.

The first step is to gather as much market information as possible. One place to start is your own cash book where you should be able to find details of prices you have received in the past and how they have changed during and between seasons. You should write these down and study them. Have you achieved the best prices? Do they vary too much? Were the buyers reliable? What has been the best marketing strategy for your products?



*Why not stop and compare your marketing strategy and price experiences with others in your study group?*

To get a picture of current or future price trends, however, you need to visit markets, or talk to processors or local traders, or read bulletins produced by market information services or reports in newspapers. Some market information services can send price information to your mobile phone.



Armed with better information, you may be able to make better selling decisions. How long should you store your produce before selling? Should you spread your sales throughout the year? Should you sell to this buyer or that one? Is it better to build a relationship with one buyer or shop around for the best deal each year?

These actions, however, do not completely remove market and price risks. The only way to do that is to enter into a forward contract with a buyer.

If you set up a contract with a buyer, that person or company agrees to purchase your products at a specified future date, so you eliminate the risk of finding a market. The buyer may also agree to a specified price for a product in which case price volatility is eliminated for the production delivered under the contract. The product would normally have to reach a specified quality standard for the agreed price to apply.

Not all contracts will offer a fixed price agreement. Some buyers specify the price as the prevailing market price at the time of delivery plus a premium or deductions based on delivered quality. So these do not protect the farmer from price fluctuations in the market. However, offering a premium for higher quality produce guarantees a reward for a farmer who achieves the required standard. Some buyers may even provide technical advice as part of a contract arrangement.



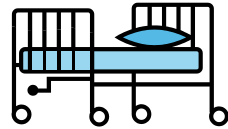
So forward contracts can reduce your market and price risks, but the cost of this reduction is a loss of flexibility to exploit unforeseen marketing opportunities and price rises. Contracts can also introduce new risks if, for example, you are unable to meet your delivery obligations or the buyer fails to pay for deliveries in a timely fashion. How would such disputes be resolved? You should always check the terms of contracts very carefully.

One other way that a farmer can reduce market risks is to collaborate with other producers to negotiate better trade terms for products or discounts for inputs. Marketing cooperatives can pool members' deliveries, improve the grading and storage of products and negotiate contracts which will result in better returns for their members. Bargaining associations do not handle their members' products but negotiate with buyers for price and other terms of trade on behalf of their members.





What about human risks or the risk of theft and fire? Can you reduce your exposure to these? You can do your best to look after your own health and that of your family to reduce the risk of illness. This may involve some costs but preventive measures are probably cheaper than having to incur hospital expenses or purchase medicines. It is important to avoid accidents when working on the farm and ensure that your employees take appropriate precautions so that they do not get hurt.



With theft, fire and incursions by wild animals you can only take the best precautions you can to try and prevent damage and losses from these causes. Building fences, constructing fire breaks and setting up deterrents are all possible preventive measures to reduce exposure to these types of risk. Valuable tools, machines, carts and bicycles may need protecting in locked buildings.

Is it possible to reduce your exposure to financial risks? These arise primarily when borrowed funds are used to finance a significant proportion of your business. In consequence managing financial risks means exercising caution with regard to the use of credit.

The only way to determine whether you can manage repayments associated with a proposed loan is to prepare a cash flow plan as explained in Book 1 of this series. Further examples are given in Book 3 relating to machinery purchase. It is important to remember that a financial plan or budget involves estimating future yields and prices. So if you want to assess the effect of risk on your ability to repay a loan, you need to examine the cash flow plan and work out the consequences if yields and/or prices are worse than expected.

This is known as sensitivity analysis. The best way to think of it is as a series of “what if...?” questions.

- What if my maize yield is reduced by 25% or 50%?
- What if I only get K30 per kg for my cotton?
- What if broiler mortality reaches 20%?
- What if I can only sell 60% of my milk?



The “what if” questions you choose should relate to your main enterprises and the risks most likely to affect them. So, if you had estimated an income of \$2,000 from a crop of groundnuts by multiplying an expected yield of 1000kg by an expected price of \$2 per kg, and you think price variation is the greatest risk facing this crop, you might recalculate the income using the lowest price you



are likely to get. Let’s say this is \$1 per kg. Then you would recalculate your cash flow using an income of \$1000 for groundnuts to see what effect this would have on your ability to repay a loan or to meet your planned monthly expenses.

If you have a good cash flow plan you should use it to ensure that any loan terms you agree are feasible in terms of size and timing of repayments. This will help to reduce any risk of default.



*Make a list of the “what if...?” questions that you will ask when analysing your cash flow plan.*

You can see that there are many ways in which a farmer can try to reduce the effect of risk on his business. The risks remain, however, and sometimes weather events are so devastating that property, crops and livestock can all be lost. What then? How can you recover?



## Recovery strategies

When, despite your best efforts, you have lost crops or livestock, suffered damage to your property or face a medical emergency, you will need reserves to fall back on. Reserves can be held in kind or in cash. In English we call it “saving for a rainy day”!



On a farm reserves are often held in kind. Grain stores well and can be kept both for family consumption and to provide seed for replanting. It can also be sold to provide cash if needed. Other crops can also be stored; some such as cassava can remain in the ground for emergency use.

Livestock also act as a reserve, particularly small stock such as poultry, pigs, goats or sheep. Obviously it is preferable not to sell or kill breeding animals as this reduces future production potential, but stock that is destined for home consumption or the market can be sold if cash is needed to aid recovery from losses.

Any possessions may be used as reserves in an emergency - dried fish, household goods or jewellery for example, although they may not fetch the best price when sold under duress.

Saving in the form of cash avoids this. Cash reserves are immediately available for use when needed. However, there are risks to saving at home as money can be stolen or lost in a fire or flood, so if it is possible to deposit your savings in a financial institution or with a savings group it is more secure and may also earn interest.



So if you have sufficient reserves you might be able to survive periods of reduced income, purchase new inputs, replace equipment or repair your house. That is why saving is so important. But it is not always possible to save enough to cover all the risks you may face.

There is another way of obtaining funds to help you recover from losses or cope with unplanned expenses and that is to take part in an insurance scheme.

Insurance is a way of joining forces with other people who face similar risks to build up a joint reserve from which any individual losses can be compensated. In this way an individual can contribute a relatively small sum of money to the joint reserve and have access to a much larger sum should the need arise.



The contributions you make into the joint reserve are known as premiums. If you need to draw on the reserve you make a claim, otherwise you do not take anything back from the fund. So you are, in effect, paying to protect yourself from a situation from which you might not be able to recover on your own.

We are going to look more closely at insurance in the next chapter and the different types of schemes that may be available, but what can you do if you do not have insurance or adequate reserves to help you recover from losses or unforeseen expenses?

You will probably try to borrow some money. Most people turn first to their family and friends in an emergency, hoping that they will be able to help them. If you can borrow within the family the loan may be interest free and repayment terms flexible.

If you have to borrow from a money lender or a financial institution, you will have to pay interest and meet specific repayment terms, so you will need to plan very carefully to ensure you can manage these additional demands from your future income.



It is possible you will need to consider new sources of income to help you recover from a loss. Can you or a member of your family get off-farm work or start a new enterprise?

A recovery strategy might involve a mixture of actions, for example, using some savings, borrowing some money and taking steps to earn some extra income.



*How well do you think you could recover from the effects of a severe weather event on your business or an accident which stops you working? Do you have sufficient reserves? Would you borrow?*

### 3 THE ROLE OF INSURANCE

#### Aim:

- To explain how insurance works
- To look at small scale mutual insurance solutions
- To look at commercial insurance providers

#### *How does insurance work?*

As we have already noted in the previous chapter, insurance is a system whereby people contribute to a fund which can be used to help those contributors who experience losses from an agreed risk. Insurance does not eliminate the risk but it helps people to return to the position they were in before the specified event took place.



*What insurance schemes do you know about in your area? Write down all those you can think of.*

Here are some examples of schemes that you may have come across:

- A funeral or burial society
- Health insurance
- Life insurance
- Car insurance

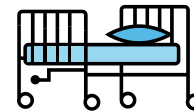
Other examples might include property insurance, livestock insurance or crop insurance.

Let's think about the risks that these insurance schemes are addressing.

A funeral society exists to help people pay for the funeral costs of a family member, so the risk being faced is death.



Life insurance is also concerned with the risk of death. Holders of life insurance know that their families will receive some money to help them cope with any loss of income following their death.



Health insurance is dealing with the risk of illness or accidental injury. Holders of this type of insurance expect to receive a sum of money to help pay for hospital and other medical costs.

Car and property insurance is dealing with the risk of damage or loss following an accident, a fire or theft. Holders of this type of insurance can use the money they receive to pay for repairs or to replace the lost item with a new one.



Livestock insurance is normally concerned with the risk of an animal's death and crop insurance with the risk of a crop being destroyed in some way so that there is little or nothing to harvest.

If you look at all these examples you can see that the commonest risk being covered by insurance is death - either of a person, an animal or a crop. The other main risks are illness, accidental damage or theft. One thing they all have in common is that the adverse event, if it occurs, is clearly identifiable, but it is also unpredictable. You don't know when somebody is going to die or become sick or bump into a tree.

These characteristics are important if insurance is to work properly.

To set up an effective insurance mechanism against a particular risk you need a sufficiently large group of people to contribute to the fund from which only a few people will suffer the adverse event that results in them receiving some money from the fund.

Let's consider how a group of farmers could set up an insurance fund for their milk cows. Suppose the typical cost of a cow is \$100.



*What would you have to know to decide how big a fund is required to provide compensation to those farmers whose cow dies?*

You would need to know how many cows might die in a typical year, i.e. the expected mortality rate. Let's say that one cow in ten is likely to die; that is a mortality rate of 10%.



*If there are 20 farmers in the group, how big should the fund be and how much would each farmer have to contribute in a year?*

If each farmer had one milk cow, then in a normal year two might suffer the loss of a cow. So they would each need \$100 to buy a replacement cow. Therefore a fund of at least \$200 is needed which would mean each farmer has to contribute at least \$10 a year.

What would they do if three cows died one year? They would have to go back to the members and collect another contribution of \$5 from each member.

Do you think the farmers would consider it worthwhile to pay \$10 or \$15 a year to protect themselves from the risk of losing their milk cow? Perhaps they would if the cow is a vital source of income but some might think it is a waste of money to spend \$10 and get nothing back because their cow remained healthy.



*Can you think of any other problems that this cow insurance scheme might face?*

Some farmers might fail to look after their cows properly knowing that the insurance fund will pay out if they die. This is known as "moral hazard" and is a problem for all kinds of insurance. Usually rules have to be put in place to try and prevent such a response, e.g. claims will not be paid if the cow has not been vaccinated.



A farmer might claim an insured event has happened when it has not. This is known as "fraud" and it must be prevented by checking that a claim event has actually happened.

A disease epidemic could occur and kill all or most of the farmers' cows. A small fund would be unable to cope with this unless it could share the risk with other groups. Of course a bigger fund can be built up over time and invested to make it grow so that more claims can be met if necessary.

. . .

We have been looking at a very simple, basic type of insurance scheme but it should already be clear that it is not so simple to organise. It has nevertheless shown us the fundamental way that insurance works.

Let's summarise that and introduce all the key words that it is important to understand when discussing insurance.

When you take part in an insurance scheme you should have a "policy" document which sets out all the details of the agreement you have entered into and the period it covers.



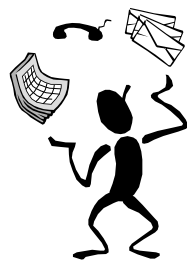
The money you have to pay into a scheme is called the "premium", while the payment you receive in the event you make a "claim" is called a "benefit" or "indemnity". A policy may specify the maximum amount you can receive for a claim and that is the "sum insured". You may have to meet part of the loss yourself before you can claim a benefit and this amount is known as a "deductible" or "excess". This discourages false claims.



If you insure your life, you must name a “beneficiary” who would receive the benefit in the event of your death.

There may be “exclusions” listed in an insurance policy which are specific conditions or circumstances that are not covered by the agreement and for which the policy will not pay out any benefits. Sometimes there is a “waiting period” before the policy becomes effective.

Insurance schemes obviously need careful planning and good management! Somebody has to decide if a risk is insurable and if there is enough information available to estimate the level of risk. Somebody has to work out what premium is reasonable and then collect them from those participating in the scheme. The fund has to be kept safely, claims have to be assessed and benefits paid to the right people.



A small group scheme might be managed by a committee or someone employed to be a manager. Groups like this are known as “mutuals”. Alternatively an insurance scheme can be started by a business who then sells insurance to those who wish to buy and the premium they pay includes an element of profit for the business.

We will now look at these two alternative ways of organising insurance.

### **Mutual insurance schemes**



Mutual insurance has been practised for a long time. The earliest known schemes concerned shipping and the risk of losing goods at sea. Merchants would contribute to a fund from which they could be compensated if they experienced a loss.

Funeral or burial funds also have a long history and work on the same principle. A contributor to a funeral fund is able to receive an agreed amount when a member of his family dies to cover the funeral expenses. These may operate as small social clubs or may be quite large concerns. Here is an example from Kerala in India:



In return for a subscription of two rupees (~4 US cents) per week into a Funeral Cost Fund a household in Cochin can claim immediate funeral costs following the death of any of its members, at the rate of 1,000 rupees for an adult or 500 rupees for a child. Funds run for a year at a time and any unused subscriptions are returned to members at the end of the year. However, if claims are above average early in the year, members may be asked to make extra subscriptions.

Experience has shown that a membership of at least 300 subscribers is needed to keep a scheme running without having to ask for frequent extra subscriptions. Each member gets a printed pass-book in which the rules are set out. The Secretary and Treasurer of the fund each hold some cash at home to enable instant pay-outs to bereaved families; the balance is banked.

Source: A Critical Typology of Financial Services for the Poor  
S. Rutherford 1996

The decision to set up a mutual insurance scheme can be taken by any group of people who face a common risk. Since everyone faces the risk of illness or death a health or funeral fund is the most common form of mutual insurance.

However, people involved in a particular type of business tend to face similar risks, so groups of craftsmen, shopkeepers, farmers or fishermen may find common cause and establish a fund to protect themselves against certain risks. In industrial countries there were once many thousands of such groups, known as friendly societies, benevolent funds or fraternities, covering a wide variety of risks.

In BNP Bazaar in Dhaka, Bangladesh, several hundred small tradesmen and shopkeepers set up an insurance fund. They each put in 2 taka (~2 US cents) a day and the money is banked by an eleven-man committee. Their street is often damaged by floods, fire or City Corporation bulldozers and the fund is used to help repair the shops and workshops. (S. Rutherford, 1996)



So what are the advantages and disadvantages of mutual insurance schemes?



*Write down what you think is good about this type of insurance scheme and what you think the main problems will be.*

Some of the advantages are:

- The contributors are also the owners of the mutual and decide for themselves what risk or risks they want to cover.
- In smaller mutuals the members know each other and this will minimise bad risk behaviour and fraud.
- Successful risk prevention can be directly rewarded through lower premiums or profit sharing.



Some possible problems are:

- The scheme may be run by unpaid volunteers who lack experience in the field of insurance.
- Only people more likely to make a claim may join - a problem known as adverse selection.
- Premiums have to be set low to ensure affordability but may then fail to provide sufficient funds to meet all the claims.
- People may drop out, reducing the scheme's ability to survive.

Small scale mutual insurance schemes such as a burial fund may operate without being registered as a legal entity. However, most schemes ought to use a bank for the safe-keeping of funds and they will need to be legally registered as a society or a cooperative to do this.

This means that bylaws must be created which set out what the objective of the group is, who controls it, how it is governed, what the rights and obligations of the members are, how the premiums are fixed, how the payments are regulated and how the funds are managed. The members will need to elect a board to manage the group's affairs.

Good administrative organisation is also essential. Policies have to be constructed and application forms designed. An insured person should be given a book in which premium payments can be recorded. One or more members may act as agents for the group, helping people to complete applications and collecting premium payments. They can also help people make claims. The other key essential is a good central record-keeping system.



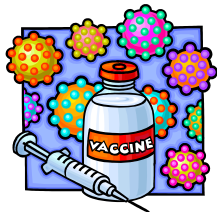
Let's look at how a mutual insurance scheme was set up in Vietnam to help farmers protect themselves against livestock mortality.<sup>i</sup>

Encouraged by an NGO, interested livestock farmers organised themselves into self-selected mutual assistance groups of 14 to 38 members according to the types of animal owned. The average size was 23. Each group elected two key people: a group leader and a treasurer and the NGO assigned a para-veterinarian to each group as the third leader. Together they comprised the Group Management Unit (GMU).

Participants in each group paid a premium for every animal that they wanted to insure, up to a maximum of five animals. The insurance cycle was related to the animal's production cycle, e.g. six months for a sow, four months for fattening pigs, one year for a cow or buffalo. The premiums were 200,000 VND (\$12.57) per cycle for a cow, 50,000 VND (\$3.14) per cycle for a sow, and 10,000-15,000 VND (\$0.63-\$0.94) per cycle for a fattening pig.

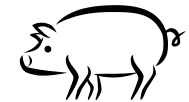


The insurance provided cover in the event of sickness or death of an insured animal, as well as access to veterinary services. As soon as the premium was paid, the group vet visited the farmer and vaccinated the insured animals against the listed diseases. If the animal became sick with one of the listed diseases during the insurance cycle, the vet treated the animal free of charge. If an animal died and the death was due to one of the listed diseases, the farmer received a specified payout. Normally the amount of payout was not sufficient to replace the animal but it was enough to buy a smaller animal and start again.



The claims procedure was timely and accessible. The vet lived in the village and was able to be highly responsive to farmers' requests for treatment of a sick animal.

If an animal died during the insurance cycle, two to three members of the group, one of whom was the vet, visited the farmer. The group members verified that the animal was dead and the vet determined the cause of death. If the death was due to one of the listed diseases, the mutual insurance scheme provided payment within 7 to 10 days of the death. There was no paperwork for the farmer to fill out.



Here is a summary of the policy conditions for the sow insurance:

Premium	50,000 VND (\$3.14)/cycle/animal
Premium collection	One time at the beginning of the cycle
Insurance cycle	Six months
Listed diseases covered by policy	<ul style="list-style-type: none"> <li>• Swine Fever</li> <li>• Salmonella or paratyphoid</li> <li>• Pasteurellosis (pneumonia or respiratory disease)</li> <li>• Leptospirosis</li> </ul>
Conditions	All insured animals are dewormed and are vaccinated against the listed diseases. Sows receive vaccinations 3-5 days after separating from piglets. Piglets receive vaccinations when 20 days old.
Benefits	<ul style="list-style-type: none"> <li>• Free treatment and medicine provided for the four listed diseases.</li> <li>• In case of animal death (from a listed disease), up to 6 months after the vaccination, the owner of the sow receives 50% of the value of the sow.</li> <li>• The owner of a piglet receives 50% of the value based on the market price of the piglet at the time of death.</li> </ul>

The NGO trained the group leaders in cash flow management for the group fund. They developed an accounting book, in which the financial transactions of the group, including premiums collected, medicine and vaccines purchased, animal treatment fees collected, commissions paid to the Group Management Unit and fees paid to the vets, were recorded.

They recorded all cases of animal illness and fees for treatment and clearly reported them at the quarterly group meetings. They also reported the groups' financial transactions and results at year-end meetings to ensure accountability and transparency in the use of funds.

Although these mutual assistance groups received considerable support from an outside agency, many of them continued to operate independently after the NGO withdrew. However, some of them have failed to maintain premium collection and their funds are declining. Some no longer have access to a local veterinarian. As independent groups they may struggle to survive.



*Would you consider participating in a mutual insurance scheme and what risk would you cover?*

### **Commercial insurance**

Another method of providing insurance arose in the 17<sup>th</sup> century when private individuals agreed to cover a share of the risks involved in shipping cargo overseas in return for payment of a set amount - the premium. This led eventually to the development of private companies which sell insurance as a form of business.



Insurers make money in two ways:

1. Through underwriting, the process by which they select the risks to insure and decide how much to charge for accepting those risks
2. By investing the premiums they collect from the people who buy the insurance offered.

Insurers aim to collect more in premium and investment income than they pay out in claims and expenses in order to make a profit. So the most crucial aspect of an insurance business is setting the price of policies. It has to be a price that potential customers will accept as well as being one that will enable the insurer to make a profit.

The first thing an insurer has to do is market research. Who will they target? What risks are those people most worried about? What levels of coverage and types of benefits are most important to them? What would they be willing and able to pay?



Then the insurer has to make calculations using historical data about the frequency and severity of losses from a selected risk to work out the premium that would have to be charged. The calculations are very complex and are done by people who can use statistics and probability to estimate the rate of future claims from a given risk.



If it looks feasible to offer an insurance product to the selected target market, all the terms and conditions must be worked out - eligibility requirements, premium amounts and payment options, the benefits that will be offered, exclusions, claims procedures and so on. Finally the insurer will have to decide how the product will be marketed and sold to potential customers. They can sell it direct to their customers or through another organisation or individual agent.



Commercial insurers are regulated and licensed under insurance law. Many are very large businesses operating on a national or international basis. Some are able to insure the insurers, thus helping them to reduce their risks! This is called reinsurance and it is a very important part of the insurance business.

Most commercial insurers concentrate on life insurance which is less risky, easier to manage and more likely to generate a profit. Car insurance is also very common since car owners are usually obliged to have insurance by law. Another important commercial product is health insurance.



When commercial insurers sell their policies direct to customers they carry all the costs of checking applications, collecting the premiums and processing claims. Thus, just like commercial banks, they prefer better-off customers who live in towns and rarely offer their products to poorer people in rural areas.

However, there are increasing numbers of commercial insurers selling their products through partner agencies that handle all the administration and thus keep the insurer's costs down. So it may be possible to buy life or health insurance through a microfinance institution or cooperative society.

Let's look at an example of this approach. ASA (Activists for Social Alternatives) is an NGO working with the rural poor in India. They offer a variety of services to the communities they work with including loans and insurance. The details of the life insurance they sell can be seen on the next page. It is backed by three commercial insurance companies. ASA has ensured the terms and conditions as simple as possible.<sup>ii</sup>



*Can you name any commercial insurance companies operating in your country? Are any of them selling insurance products through institutions near you?*

### ASA's Life Insurance Product

Product Feature	Comment
Annual Premium	Rs 125 (\$2.78) (of which Rs 50 goes to the insurer)
Insurable Event	Death of the client (due to any cause)
Age Limit	18-60 years
Screening	Visual appraisal by ASA field officer
Waiting period	15 days
Exclusions	None
Benefit	Rs 20 000 (\$222)
Term	One year
Premium Collection	Yearly
Lapses	Any non-renewal

Sometimes governments organise and sell insurance products and sometimes NGOs decide to develop and sell their own insurance products to the people they work with. In this case they bear the insurance related risks and are responsible for any financial losses. To manage this risk and avoid losses, they need competent staff, adequate reserves, and must adhere to regulatory requirements

The Self-Employed Women's Association (SEWA) of India saw improved health care as crucial to their strategy of improving their members' quality of life. They began as an agent for United India Insurance Company (UIIC) but decided to insure members themselves because of UIIC's rigidity and lack of maternity coverage. They copied the coverage and pricing of UIIC but added some benefits such as maternity, cataract, hearing aid and denture coverage. Now they also offer their members policies to cover other risks, for example house and business assets can be insured against losses due to natural calamities, human-made disasters and fire, although losses due to heavy rains and floods are not covered.



Do commercial insurers develop products that can help farmers protect themselves from the risk of losses due to weather, pests and diseases?

In countries with big commercial farms, insurers do sell policies to cover crops and livestock. Crop insurance can be designed to cover losses from one or more perils. The event can be a particular named peril, such as hail or frost, or a multi-peril insurance can cover a number of risks. The more complex the insurance, the more expensive it becomes.

Named-peril policies pay out according to the actual damage that is experienced and involve individual farm assessments. Multi-peril policies are based on shortfalls of expected yield and use a farmer's crop yield history as a baseline. So crop insurance schemes are very costly to administer and often require to be subsidised by governments. In countries with large numbers of small scale farmers they are not usually viable.

However, insurers have come up with an alternative method of offering some protection from weather events to small scale farmers in emerging markets. It is known as index-based insurance. With this type of insurance individual losses do not have



to be assessed. An index is selected which is closely linked to the yields that will be achieved in a given location - rainfall for example - and when this index is recorded at a level above or below the established norm for that area, it is assumed that yields will suffer and the insurance pays-out to all policy holders in that area.

Let's look at how a weather-index insurance policy for drought risk was constructed for farmers in South Africa.<sup>iii</sup> They first established the different amounts of rainfall needed for optimal growth at different points in a crop's life. This enabled them to work out when drought, assessed by measuring the amount of rainfall received at a local meteorological station, would seriously reduce crop yields in that local area.

The assumption is that, although rainfall will not always be exactly the same throughout the area, in cases of severe drought all farmers within a given radius will be affected in a similar manner.

This is what a contract might look like:

Crop	Groundnuts
Measurement station	ABC Weather Station
Insured farmers	Those within 20 kilometres of the weather station
Peril covered	Drought



Parameter	Crop Growth Stage		
	Germination and establishment	Flowering	Maturity
Length of phase	50 days	30 days	40 days
Upper trigger	35 mm	140 mm	35 mm
Lower trigger	30 mm	30 mm	20 mm
Payout rate (per mm)	R1600	R73	R533
Sum insured	R8000	R8000	R8000
Maximum payout	R8000		
Premium rate	R560 (7% of maximum contract payout)		

So with this contract, if at the end of 50 days from the contract start date, the weather station has received more than 35mm of rain, no payout will be made. If less than 30 mm has been received, this farmer will receive R8000 (about US\$ 1150). If the rainfall is in between the triggers, 33 mm say, the farmer will receive 2mm (35 - 33mm) x R1600 which equals R3200. This will compensate him for the expected reduction in yield. Once the maximum payout has been made the contract is ended.



*Can you work out what the farmer would receive if the rainfall recorded in the flowering stage was only 80 mm?*

He would receive (140 - 80) x R73 = R4380

#### 4 IS INSURANCE RIGHT FOR YOU?

##### Aim:

- To introduce the idea of a risk management strategy
- To suggest a range of questions you should ask when buying an insurance policy
- To identify who can provide advice

##### Developing a risk management strategy

What sort of farmer are you? Do you want to avoid risks as far as possible or are you on the look-out for new opportunities that might involve a leap into the unknown? Do you think carefully before taking a decision and calculate all the possible outcomes or do you prefer to ignore the possibility of things going wrong?

Everybody is different in their attitudes towards risk.



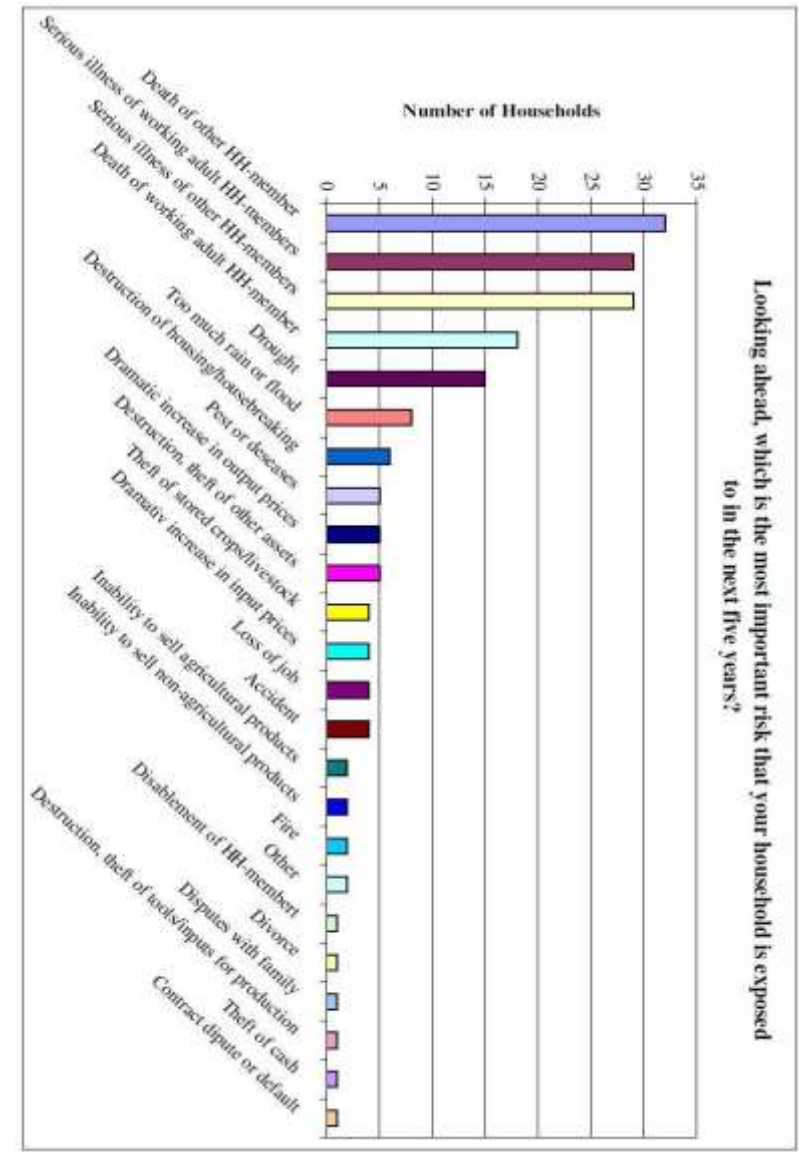
*Imagine you are given the choice between two options. The first results in a sure gain of \$700. The second carries some risk - there is a 75% chance of winning \$1000 and a 25% chance of winning nothing. Which option would you choose?*

Most people prefer a smaller gain that is certain to a larger one that is uncertain. That is why most farmers diversify their production, preferring a lower, more stable income to a higher, more variable one that can result from specialisation.

How you feel about risk very much depends on your personal circumstances. If you have dependents, you are likely to be more risk averse. If you are young and working on your own, you are likely to be willing to take more risks. Everyone, however, should have a risk management strategy. In farming this usually means integrating a variety of responses to a variety of risks.



This diagram shows the results of a survey in rural Ghana to find out which risks households thought were most likely to affect them in the next five years.<sup>iv</sup>



In the list you can see production and marketing risks, as well as theft and fire, but it seems the biggest concern is the possible death or illness of a member of the household, particularly a working adult member.

To develop a risk management strategy you need to know what you consider your greatest risks to be. Then you have to evaluate how robust your current situation is in relation to those risks.

- Are you growing the right crops?
- Are you using the best production methods?
- Could you increase water storage?
- Are you protecting your livestock from disease?
- Should you diversify further?
- Can you store things securely?
- Could you improve your marketing?
- Could you obtain a forward contract?
- Do you have assets you can sell in times of need?
- Do you have enough cash savings?
- Are your debts manageable?

Ideally you will prepare a cash flow plan and conduct a sensitivity analysis on it as described in Chapter 2. This will enable you to assess what your position would be if the risks you most fear do affect your business or your personal life, and help you plan your response.

When should you consider insurance as part of your strategy? As you know, it costs money to buy and you may or may not claim any benefit from it. So, small risks which occur quite frequently and only cause minor problems are best covered by your own reserves. Risks which only occur occasionally but have very serious consequences are the ones that it may be worth insuring against because recovery may be very difficult otherwise.



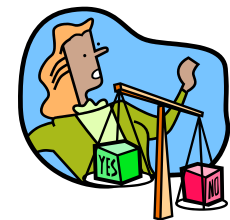
If, like the people in rural Ghana, you fear the consequences of losing an adult member of the household as a result of illness or an accident, then life insurance is worth considering. It can provide some peace of mind by ensuring your family receive some money following the death of the policy-holder to help them manage the loss of income. Some financial institutions require borrowers to purchase a “credit-life” policy which will pay the borrower’s outstanding loan balance should the borrower die before the end of the loan term.

Of course your decision will depend on how reliable you believe the insurance provider to be. If it is a commercial company you have to trust that they will deliver the policy benefits in a reasonable time frame and without placing too many obstacles in your path. Some demands for certificates or other documentary evidence to support your claim can be very difficult to obtain and can be subject to corruption with officials demanding payments. Under these circumstances, insurance can appear less useful.



You have to evaluate the options that are available in your own local area. There are increasing numbers of organisations offering micro insurance which are policies geared to the low-income market and these may have products which suit your circumstances. When available, health insurance is usually a good investment.

Weather or livestock insurance is less common. If a product is available, you have to decide if your vulnerability to drought or flood or disease makes it worth paying the proposed premium. You might consider how the premium compares to other items of expenditure in your cash flow plan and weigh this up against the level of risk. It is a very personal decision.



If you purchase index insurance for a weather risk, it is important to appreciate that there is a chance your individual circumstances may not match the measured index exactly. You might experience a loss but not receive any payment because the index threshold value has not been met. Conversely, of course, you may receive a payment when you have not experienced any loss. This potential mismatch is known as basis risk and is one of the weaknesses of this type of insurance.

### **Questions to ask when buying an insurance policy**

Whenever you are considering buying insurance, it is important to understand exactly what you are buying. Hopefully you now have a good idea what insurance is and how it works, but each policy is different and you must check that it really does provide the protection you want or expect. You should do this even if you are obliged to buy a policy by law, as part of a loan deal or because you belong to a group.



What should you ask? The following list is not definitive but it will give you an idea of points you should consider.

- What type of policy is it - life, health, property, livestock, etc. or a combination of these? Is it voluntary or compulsory?
- What events does it cover? Examples might be fire, death, disability, flood, theft, hospitalisation, accidental damage, storm, etc.
- Who does it cover? The policy may cover just the policyholder or may include other members of his or her family or household.
- Who is eligible to buy the policy? Life and health policies may be confined to a certain age group, e.g. 18 - 60 years. Some policies may be confined to members of a specified group or to farmers in a specified location.

- Is any documentation needed when buying the policy?

- What is the premium? Is there just a flat rate for the policy or are there different premiums for different levels of cover?



- How is the premium to be paid - in cash or as a deduction from a loan or savings account? Will someone come and collect the premium from you?

- How frequent are premium collections - monthly, quarterly, annually? What happens if you miss a payment?

- What are the benefits? Check the limits that are imposed and, if the policy covers a combination of events, check that you understand them all.

- What is the period of cover - a year, six months, a production cycle? Some life policies run for many years but are only valid if premiums are paid every year.

- What is excluded? Most policies specify a range of circumstances that are not included in the cover, e.g. suicide as a cause of death; health problems that exist before taking out the insurance; war, riot or weather catastrophes that affect everybody.

- Is there a waiting period before the policy becomes effective? Does it apply to all the benefits included in the policy?



- Is there any deductible or excess to be paid before a claim can be settled? How much is it and is it the same for every claim?

- How will the benefits be paid? Cash settlements may be most convenient but some insurers will settle with cheques which means you have to take it to a bank. Some health insurances only pay on a reimbursement basis which means the policyholder has to pay the bills first and then make a claim. Some insurers pay the healthcare provider directly, so the insured does not experience any out-of-pocket expenses.

- Who can be named as a beneficiary in a life policy? Are there special provisions if a child is named as a beneficiary?
- How do you know when a trigger level has been reached in weather index insurance? Does the insurer notify policy-holders?
- How is a claim submitted? What type of documentation is needed? Is getting that documentation practical? How long does it take to settle claims?



### ***Who can provide advice?***

Insurance is a financial service, so the best place to look for information and advice is at a financial institution. Even if they do not sell insurance policies themselves, they may have information about who does and how to contact them.

With the growth of micro-insurance products designed for low-income customers, microfinance institutions, savings and credit cooperatives and rural banks should all be in a position to give some advice about using insurance as part of your risk management strategy.

Agricultural extension officers may also be able to help with strategy planning and links to insurance agents in the area.



*Discuss and compare your risk management strategies with other members of your study group and invite some local insurance providers to a meeting so you can practice asking questions about their products.*

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<sup>ii</sup> Source of information: “Microinsurance and Microfinance Institutions: Evidence from India” CGAP Working Group on Microinsurance, Good and Bad Practices Case Study No. 15 September 2005

<sup>iii</sup> Source of information: “Weather Index Insurance; The Case for South Africa” by Shadreck Mapfumo, Micro Insurance Agency February 2007

<sup>iv</sup> Source: “The Demand for Microinsurance in Rural Ghana” by Lena Giesbert, Research Fellow at the German Institute of Global and Area Studies December 2008