Agricultural Lending - Self Study Guide for Loan Officers

LESSON EIGHT

Loan Portfolio Management

Objective: This lesson is designed for more senior loan officers or branch managers who are responsible for the lending policies and overall performance of their institution. It describes the types of risks that may affect the whole loan portfolio, explains how to measure loan portfolio quality and introduces various management measures that can be taken to actively control portfolio risk.

1. INDIVIDUAL VS PORTFOLIO RISK

The risk exposure of an agricultural lending institution is determined by two categories of risk - individual loan risks and portfolio risk. The first seven lessons of this study guide concentrated on individual loan risks, while this final lesson will focus specifically on loan portfolio risk.

Loan portfolio risk depends on the degree of exposure the individual loans have to covariant risks. For example, in a mainly coffee-exporting region of a given country, a drop in world coffee prices can have serious repercussions on the loan portfolio of a financial institution involved in agricultural lending. Coffee producers, processors and traders are all likely to be hit by such a price change. In addition, if a large proportion of people’s income in the region is depends on coffee production, retailers and manufacturers of household goods and other consumer items are likely to be hit as well. A prudent financial institution, therefore, needs to take into account these inter-dependent relationships and manage its exposure to loan portfolio risk in an active manner.

What determines the risk profile of the loan portfolio? To start with, each borrower has an individual risk profile. This risk profile needs to be assessed in detail in order to determine whether he/she is eligible for a loan or not, i.e. whether the lending institution is willing to take on the (limited) risk of default.

In the evaluation of individual loan risks, we noted a variety of external factors which are beyond the control of the applicant. Price developments in input (e.g. seeds or pesticides) and output markets (e.g. meat prices) can significantly influence the borrower’s capacity to repay. If these markets show negative trends, it will be difficult for an individual farmer to maintain the projected profitability of his/her economic activities. The capability of the borrower and the techniques he/she applies to mitigate these risks are evaluated on an individual level.

At the same time, regional events, sector and product market developments may have effects on the loan portfolio beyond any individual borrower. Referring to the example above, if one coffee producer fails because he is hit by a coffee disease, this is primarily a loan repayment problem with this particular borrower. However, if all coffee-producers in a specific region lose their harvest because of this pest and the total amount of loans disbursed to those producers represent 80% of the loan portfolio, the existence of this lending institution might be seriously threatened. Therefore, individual loan appraisal is a must but not enough. It must be complemented by risk evaluation and mitigation techniques conducted by the financial institution at the loan portfolio level.
2. LOAN PORTFOLIO RISK FACTORS

The key idea of loan portfolio management is to keep covariance risk at a minimum.

The basic principle is: diversify your loan portfolio over a large number of clients with different risk profiles. Then, if one risk factor turns out negative, not all the portfolio will be affected. A simple example from a manufacturing company would be to invest in producing both rain-wear and sun protection products; then, whatever the weather, the manufacturer will sell products.

We will now have a closer look at the three main categories of portfolio risk: regional risks, sector or product risks, and loan concentration risks.

i. Regional risks

As previously mentioned, there is considerable inter-dependence between different economic sectors and farming activities within a specific geographic region.

The main types of influence on regional risk can be summarised as follows:

Diagram 1: Factors influencing regional risk

Geographic conditions
- e.g. micro-climates

Macroeconomic conditions

Political conditions

Infrastructure conditions

Ecological conditions

Socio-demographic conditions

Regional Risk

Geographic conditions

In agricultural lending a major risk arises from the climate of the zones in which the financial institution is active. In this context, not only the normal climatic features are relevant but also the region’s exposure to natural calamities such as floods, hurricanes, etc. The variety of flora and fauna in a region and the productivity of the agriculture are closely associated with the climatic conditions. The type and frequency of pests and diseases also varies between different geographic zones and climates. Geographic areas with a wide range of micro-climates and accordingly a wider variety of agricultural activities undertaken by farmers represent a lower risk to lenders than areas where all borrowers depend on similar weather conditions.

Macroeconomic conditions

In general, the macroeconomic situation of a country has an impact on all economic activities in all sectors. High inflation and foreign exchange rates, which suggest that the local currency is of little value, may result in high prices for supplies. Particularly inputs that must be imported such as certified seeds, fuel or machines will be very expensive. Though this has an overall effect on the entire country, the situation might vary between regions depending on the level of dependence on imported goods. If a country is in an economic depression, with very low tax income, little donor assistance and limited access to foreign capital markets, public investments are likely to be postponed. Then new roads will not be constructed; dams and dykes will not be built to control periodic flooding that may attack specific regions, and so on.
Political conditions
In many countries, political conditions are characterised by a high level of government interference. Unfortunately, the agricultural sector is one of those economic sectors where government intervention is prevalent. In these circumstances, crops prices may be controlled and publicly-owned agricultural marketing boards may be the only organisation farmers can sell their produce to. Political leaders might advocate for debt forgiveness in certain regions or for certain groups of farmers, with negative consequences for repayment morale and credit culture. There might also be rebel groups operating in different regions making the life of farm households very difficult. In Nepal, for example, the Maoist movement has implemented local “parallel governments” in certain regions. In Colombia, the FARC guerrilla army charges “taxes” to farmers in the regions they control. In other regions where government troops are still present, they attack trucks that are transporting agricultural produce to the district towns. In both these countries, public infrastructure has been seriously damaged during the conflicts, resulting in the destruction of crop storage facilities, roads and bridges that are critical for bringing crops from the rural areas to the markets.

Socio-demographic conditions
Socio-demographic factors like population growth, age structure of the population and migration from the rural areas to the cities can also have an impact on the loan portfolio of a financial institution. If the size of families increases steadily in a particular region, this may result in more intensive land use. Overgrazing, heavy use of fertilisers and other chemical inputs and, in the long run, deterioration of soil quality and crop yields may be the consequences. If farmers migrate more frequently and for longer periods, this can undermine the social network in a region, destabilising families and cutting off access to family assistance in case of an emergency.

Ecological conditions
Together with geographic factors, the ecological situation in a region has a direct influence on farm production. Contaminated water, for example, can wipe out entire cattle herds and have a negative impact on agricultural production. Likewise, rapidly increasing erosion problems in a region can seriously affect the availability of arable land.

Infrastructure conditions
Access to comprehensive and reliable irrigation systems might be particularly important in regions where the timing and intensity of rainfall is not reliable. Once crops are harvested, there is a need for local storage facilities as well as for rice mills and other support facilities. In addition, good transport systems are vital for bringing agricultural produce to the right markets at the right time. Infrastructure does not only refer to physical infrastructure, however. It also includes the availability of extension services and the number of veterinary officers working in a region, for example.

It is important to remember that all these different regional risk factors do have an impact on individual loan performance. However, they also have major consequences for overall loan portfolio performance. They may have an impact on a large number of loans given out in a specific region. Lending institutions should, therefore, have a strong interest in monitoring the risk exposure of their loan portfolios by regions.

ii. Sector and product risks
Sector and product risks refer to the particular risk profile of a specific economic activity or product.

In order to obtain better insights into the risk profile of different sectors, we will have a look at the four types of factors presented in the diagram on the next page.
Diagram 2: Factors influencing Sector Risk

Expected sector growth
It is important to compare the expected growth rate of a particular economic sector with the expected growth of the whole economy. A sector experiencing continuous growth which is above the average for the whole economy is in a good situation. In contrast, sectors whose growth rates are rather volatile and show sharp ups and downs are more risky for lenders.

Sector growth is influenced by the following factors:

- **Domestic and international demand for the products.** If the demand for a specific product constantly increases, this will have a positive effect on the sector growth figures. Quinua, for example, was known as a traditional cereal exclusively consumed by the indigenous rural population of the Andean region and not even sold in the urban supermarkets of the respective countries until recently. However, with the increased international demand for “non-industrial” cereals, quinua has become a high-value export crop over the last decade and the land area under quinua production has significantly increased.

- **Government intervention.** Governments might deliberately want to promote certain sectors while having a little interest in others. As a result, public investments and support programmes might be particularly beneficial to certain economic activities.

- **Availability of natural resources or production inputs.** Natural resources are limited by nature. The availability of arable lands, for example, is not flexible but governed by a combination of geographical features. Taking another example, if overgrazing is already a serious problem, cattle production cannot be further expanded unless the production methodology changes from an extensive to an intensive, indoor system.

Macroeconomic risk exposure
The macroeconomic risk exposure depends on the extent to which certain economic sectors are affected by overall economic changes. What impact might overall developments in the national economy have on specific economic activities? For example, a sharp increase in the foreign exchange rate after liberalising capital markets is likely to lead to a rise in prices for agricultural supplies that have to be imported. Sectors that depend heavily on imported supplies will obviously be affected to a much greater extent than others relying exclusively on inputs produced in the domestic markets.

Market structure risk
This risk category is connected to the demand and supply situation in different economic sectors. On the supply side, for example, the level of competition needs to be considered. Are there many farm households engaged in the production of a particular crop which will result in low prices at harvest time? Or are there only a few producers specialised in this activity so that they can sell at higher prices? On the demand side, it is important to know whether there are large numbers of clients purchasing the goods or only a few. In Sri Lanka, for example, there are only 2 large companies purchasing certain vegetables used for decoration (e.g. “bonsai cucumber”) which they export to international hotel chains. Obviously, farmers selling these vegetables are dependent on the conditions that these companies dictate and have no alternative markets in which to sell.
**Sector profitability**

If farm households are engaged in several economic activities and combine different sources of income, having good information about the profitability of any one specific activity is not so crucial for a lender. However, if an institution is providing loans to farm households that specialise in just one crop say, it is essential that the lender knows all about the profitability of that crop.

**iii. Loan concentration risk**

Loan concentration risk arises when the loan portfolio is confined to a small number of large loans. If one loan fails, this then has a major impact on the loan portfolio quality. Institutions prone to insider or connected lending are very subject to this type of risk. Insider lending involves making loans to elected officials, staff and their family members, and business associates of the financial institution, frequently on a preferential basis. In these cases there are often no serious loan recovery efforts when repayment is due. Connected lending occurs when financial institutions lend a large proportion of their capital to parties directly or indirectly connected to them. Concentration, default and the permanent roll-over of loans are common features of connected lending.

Another form of loan concentration risk arises when a considerable portion of the loan portfolio is comprised of loans with similar features (e.g. all loans fall due in the same month). Imagine an extreme situation where 100% of the loan portfolio is comprised of 9-month wheat production loans that fall due in the same 2-week period. If the wheat cannot be sold at that particular moment due to a road blockage, there will be a complete liquidity dry-up in that institution. Should farmers need additional loans for storing the grain and buying food for their families until the wheat can be sold, the financial institution would not be able to do supply them because there would be no cash available. This could have serious implications for the eventual recovery of the loans once the road blockage is cleared and the wheat is finally sold. For example, the grain might have lost quality and only fetch a low price, or farmers may have turned to moneylenders to cover their emergency expenses and will pay them back first, before servicing their production loan from the financial institution.

Now let us consider from where a financial institution might obtain information which will help them assess these three types of risk that can affect the quality of a loan portfolio. Information is needed both to construct a general risk profile for economic sectors, products and markets and also to evaluate the specific exposure of the institution.

**Table 1: Portfolio Risk Categories and Sources of Information**

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Sources of information for the risk profile</th>
<th>Sources of information for the risk exposure of the financial institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional risk</td>
<td>Reports from provincial government</td>
<td>Past performance per region</td>
</tr>
<tr>
<td>Sector risk</td>
<td>Ministry of Agriculture, Ministry of Small Industries, Chambers of Commerce, Agricultural Extension Services</td>
<td>Past performance per sector and product</td>
</tr>
<tr>
<td></td>
<td>Internal information sources</td>
<td></td>
</tr>
<tr>
<td>Loan concentration risk</td>
<td>Long term analyses of financial sectors</td>
<td>Past performance per loan type category</td>
</tr>
<tr>
<td></td>
<td>Internal information sources</td>
<td></td>
</tr>
</tbody>
</table>
3. MEASURING LOAN PORTFOLIO QUALITY

Measuring loan portfolio quality is the key to loan portfolio management. Assessing the current performance status of the most important asset of a financial institution - the loan portfolio - is a basic requirement for being able to actively manage the level of risk exposure and the profitability of an institution.

In general terms, portfolio quality indicators identify performing and non-performing parts of the loan portfolio and relate them to specific factors. The indicators provide a view (i.e. a snapshot picture) of the status of the portfolio's performance. By comparing indicators at different points in time, trend analysis can be carried out and positive or negative developments identified. In the search for the specific reasons for positive or negative developments, portfolio information should be structured to enable managers to answer the following questions:

1. What percentage of the loan portfolio is non-performing?
2. What is the ratio of delinquent to active borrowers?
3. How many currently delinquent loans will turn out to be loan losses?
4. How strong is loan portfolio concentration in specific regions, sectors, products and loan term categories?
5. How does loan portfolio concentration relate to current and past portfolio performance?

As we have already addressed how to monitor individual loan quality (see lessons 6 and 7), we will concentrate here on interpreting aggregated loan portfolio indicators, with a particular focus on sector and regional risks.

i. Sector Distribution of Loan Portfolio at Risk

The loan portfolio at risk is defined as the value of the outstanding principal of all loans in arrears, expressed as a percentage of the total loan portfolio currently outstanding.

\[
\text{Total outstanding balance of overdue loans} \over \text{Total outstanding loan portfolio}
\]

When using this ratio to assess the level of risk, we are assuming that the current levels of delinquency are not an isolated, temporary phenomenon but a true reflection of the prevailing situation. In a worst-case scenario the entire outstanding balance of loans in arrears can be lost.

In order to discover which sectors (or regions) represent a higher risk exposure for a financial institution, the composition of the entire loan portfolio at risk must be compared with the overall loan portfolio structure.

AGLEND’s comparative analysis of the total outstanding loan portfolio with the loan portfolio at risk on 31 of December 2001 has produced the results which can be seen on the following page.

It is clear that the distribution of the overall outstanding loan portfolio differs significantly from the distribution of the loan portfolio at risk. There are several sectors that have a more significant presence in the loan portfolio at risk than they do in the total outstanding loan portfolio. One example is the coffee sector. This analysis shows that these sectors represent a higher risk to the institution than other sectors because of their higher loan amounts in arrears. Such evidence should be regarded as a red flag!
<table>
<thead>
<tr>
<th></th>
<th>Total Outstanding Loan Portfolio (USD)</th>
<th>%</th>
<th>Loan Portfolio at Risk (USD)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee</td>
<td>284.000</td>
<td>14,2%</td>
<td>40.775</td>
<td>23,3%</td>
</tr>
<tr>
<td>Wheat</td>
<td>278.000</td>
<td>13,9%</td>
<td>22.225</td>
<td>12,7%</td>
</tr>
<tr>
<td>Rice</td>
<td>214.000</td>
<td>10,7%</td>
<td>19.600</td>
<td>11,2%</td>
</tr>
<tr>
<td>Maize</td>
<td>106.000</td>
<td>5,3%</td>
<td>16.450</td>
<td>9,4%</td>
</tr>
<tr>
<td>Vegetable</td>
<td>326.000</td>
<td>16,3%</td>
<td>14.875</td>
<td>8,5%</td>
</tr>
<tr>
<td>Cattle</td>
<td>196.000</td>
<td>9,8%</td>
<td>26.775</td>
<td>15,3%</td>
</tr>
<tr>
<td>Pigs</td>
<td>62.000</td>
<td>3,1%</td>
<td>5.600</td>
<td>3,2%</td>
</tr>
<tr>
<td>Poultry</td>
<td>48.000</td>
<td>2,4%</td>
<td>4.025</td>
<td>2,3%</td>
</tr>
<tr>
<td>Services</td>
<td>126.000</td>
<td>6,3%</td>
<td>8.575</td>
<td>4,9%</td>
</tr>
<tr>
<td>Trade</td>
<td>360.000</td>
<td>18,0%</td>
<td>16.100</td>
<td>9,2%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2.000.000</td>
<td>100,0%</td>
<td>175.000</td>
<td>100,0%</td>
</tr>
</tbody>
</table>

In order to interpret these figures appropriately, however, several factors need to be taken into account.

First, the table above represents a snap-shot of one specific moment in time. The loan portfolio at risk is obviously influenced by the repayment schedule and maturity of loans. Let’s assume that all loans for one specific agricultural crop are due in March and they are paid in one single instalment (including all accumulated interest) at maturity. Obviously, none of these loans will show up as overdue in December. The loan portfolio at risk for this sector would therefore look perfectly fine. However, in March and April the loan portfolio at risk might show a completely different picture. Careful analysis is therefore necessary to avoid jumping to the wrong conclusions.

Secondly, even if the evolution of the outstanding loan portfolio versus the loan portfolio at risk were to be compared over a longer period of 6-12 months, we might miss the point. In order to distinguish between temporary and persistent structural repayment problems associated with specific sectors, a historic comparative analysis covering several years should be carried out.

ii. Sector Distribution of Loan Loss Rate

We can carry out such a historical analysis of loan portfolio performance by calculating the loan loss rate. The loan loss rate refers to the amount of loans that has actually been written off during a specific period of time. These are explicit losses that an institution has acknowledged because there is no possibility to recover or enforce the loan. In a large number of institutions, the loan loss rate is calculated on an annual basis as follows:

\[
\frac{\text{Amount written off during period } n}{\text{Average outstanding loan portfolio during period } n}
\]

The loan loss rate must be carefully analysed as it is influenced by the institution’s write-off policy. Some institutions do wait a very long time before writing-off loans as they fear that this could be misinterpreted by loan officers and borrowers that the institution is soft on loan repayment. However, as a consequence the quality of the loan portfolio is overestimated and a very low loan loss rate may be hiding the real loan portfolio risk level.
AGLEND writes off loans when they are more than 360 days overdue unless they have to be written off earlier for one of the following reasons:

- The borrower has died or disappeared;
- The collateral or guarantee cannot be enforced as it is either missing or seriously damaged and/or the guarantor has died or disappeared.

The following table summarises the loan loss ratios as percentages of each sector portfolio. It shows, for example, that 5.9% of the average outstanding loans to the coffee sector had to be written off during 2001.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee</td>
<td>3.2%</td>
<td>3.1%</td>
<td>3.0%</td>
<td>5.1%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Wheat &amp; Rice</td>
<td>2.9%</td>
<td>2.4%</td>
<td>2.2%</td>
<td>2.2%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Maize</td>
<td>5.3%</td>
<td>5.4%</td>
<td>16.0%</td>
<td>5.1%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Vegetable</td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Cattle, Pigs &amp; Poultry</td>
<td>1.5%</td>
<td>1.3%</td>
<td>1.4%</td>
<td>1.5%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Services &amp; Trade</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.2%</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>2.3%</td>
<td>2.2%</td>
<td>3.1%</td>
<td>2.4%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

The table indicates that not all sectors show a stable trend or performance. In 1999, for example, the maize sector had a very bad loan recovery performance with a loan loss ratio of 16.0% of the average loan portfolio outstanding to the maize sector during that year. This shows that in order to interpret the figures correctly, we must have sufficient information about the problems that different sectors faced during period we are analysing.

Some institutions use complex econometric models to find out why there were loans defaults in the past and whether the default is a result of individual or broader sector or regional risks, or both. The results of this analysis are then transferred into credit scoring models. These can be used to support loan assessment in a systematic way, identifying the probability with which a new loan might show repayment problems in the future.

Questions:

1. Which sectors contribute more to the loan portfolio at risk than to the overall outstanding loans?

2. Compare the loan portfolio at risk per sector with the historic data provided in the table on loan losses. Does the information of the two tables correspond?

3. What kind of additional information would you require to be able to interpret the historic figures about loan losses and current loan portfolio at risk appropriately?

4. What are the sectors in your institution that show the highest loan losses over the last years? What are the reasons for these high losses in the different sectors?
**Exercise:**

AGLEND’s internal audit report 2001 makes several startling observations regarding the loan portfolio quality. The internal auditor found that several loans to coffee producers are still registered in the books even though they have been overdue for several years. If the write-off policies had been applied correctly, these loans would have been written off according to the following scheme:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount to be written off</th>
<th>Average loan portfolio for coffee sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>12,000</td>
<td>500,000</td>
</tr>
<tr>
<td>1998</td>
<td>18,000</td>
<td>550,000</td>
</tr>
<tr>
<td>1999</td>
<td>14,000</td>
<td>520,000</td>
</tr>
</tbody>
</table>

How would the loan loss rate change for the years 1997-1999 if the write-offs had taken place as indicated in the table above in addition to those already carried out?  
(Answer at end of lesson)

With this new information, how would you modify your assessment of the historic loan loss rate for the coffee sector?

### 4. STRATEGIES FOR ACTIVE LOAN PORTFOLIO MANAGEMENT

Let us now have a look at how credit policies can be designed to manage loan portfolio risks and what kind of measures are taken to keep the risks at an acceptable level.

#### i. Exclusion of certain regions and economic sectors from accessing loans

Every lending institution defines a specific target market that it wishes to serve. Among the criteria that are used for determining the target market, risk considerations play an important role. If there are strong indications that loans in a specific region or economic sector show a very high probability of loan default, it may be wise to exclude these groups from lending. There is no blueprint for identifying high-risk sectors, however.

These are examples of criteria that AGLEND uses to determine which sectors and regions it should avoid:

- Areas at risk from frequent, severe and extended periods of natural calamities;
- Areas where households are dependent on one crop and the profit margins are less than 60% of costs;
- Sectors heavily affected by government intervention in production and marketing;
- Regions with a history of subsidised credit programmes (e.g. where more than 50% of the population received loans under these programmes);
- Regions occupied by guerrilla movements.

Needless to say, these criteria and also the sectors and regions excluded from lending need to be modified over time as risks change and new risks arise. If, for example, AGLEND knows that a severe coffee-disease is expanding in a neighbouring country and will soon reach AGLEND country, it could cut off lending to this sector until the disease is over. The loan manager must therefore continuously observe how the risks associated with specific sectors and regions are changing over time and whether they are reaching a level of severity which makes it necessary to stop lending to these sectors and regions.
ii. Inclusion of certain sectors or regions only under specific conditions

A less restrictive method than excluding the entire economic sector or region from access to loans is to allow farm households that produce a specific main crop or are located in a specific region to obtain loans - but under certain restrictions.

If we review the checklist for screening borrowers in lesson 3, for example, we will see that producers of coffee, potatoes and maize are given special treatment. They only pass the screening test if they have a variety of income sources. In the case of coffee and potato producers, they must have a minimum of 3 different income sources. With regard to maize producers, they must have at least 4 different sources of income, including one off-farm activity.

What conclusions can we draw from this? Coffee, potato and maize producers seem to be classified as high-risk borrowers. They will only be served if they can off-set possible problems associated with the production of their respective crops by other sources of income.

Other conditions which could be defined for any given sector include:

- Minimum level of experience required in the activity in question;
- Access to irrigation;
- Higher collateral requirements, etc.

iii. Sector and regional limits

In order to ensure that the loan portfolio is diversified so that major problems in one sector or region do not wipe out the entire loan portfolio, limits on the proportion of loans disbursed to specific sectors or regions should be defined. Lower and upper limits can be set, defining the optimal range that each sector or region should occupy in the overall loan portfolio. The lower limit defines the benchmark below which the contribution of a specific sector (or region) would ideally not fall. The upper limit is the maximum loan portfolio exposure that is desirable in one specific sector (or region).

Let’s see how AGLEND has defined the upper and lower limits for various economic activities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Lower limit</th>
<th>Upper limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Wheat</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Rice</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>Maize</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Vegetable</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Cattle</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Pigs</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Poultry</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Services</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>Trade</td>
<td>10%</td>
<td>30%</td>
</tr>
</tbody>
</table>

As we can see, the largest portfolio concentrations are allowed for trade (10-30%), vegetable and wheat production (10-20%). Obviously, these sectors must have the better risk profiles.
How does AGLEND ensure that the actual loan portfolio structure is spread out in the way indicated above? And what does AGLEND do when an upper limit is reached? Does AGLEND close the doors in the face of a rice producer just because 15% of the loan portfolio is already allocated to the rice sector?

First, let’s have a look at what can be done to reach the lower limit of a regional or sector loan portfolio. Here is a story told by one of the branch managers in the Pramot region:

"... Until two years ago, AGLEND had not given any loans to the poultry industry. Then a 2% lower limit was introduced for this sector and the branch managers were given a 6-month period to achieve this. In order to stimulate our efforts, a competition was set-up between the branches. The branch that hit the 2% limit first, would win a big prize. Those that needed more time to achieve the target would get smaller prizes. Those that failed to achieve the target would be punished with a reduction in their bonus payment.

My branch is No. 1 in the region. So both I and the loan officers wanted to do everything possible to win this prize. Our reputation was at stake! We sat down and made a plan. First, we contacted the local shops where poultry and eggs are sold to find out who were the best poultry producers in the region. We then ranked the poultry producers in terms of their sales volume, quality of produce, reputation etc. Next the loan officers personally visited all the producers near the top of the list.

In order to inform the general public that AGLEND were now interested in financing poultry producers, we participated in the semi-annual poultry market in our district town. This is a large fair where all poultry producers come together from the region. We held a lottery and more than 300 people participated. The top prize was a cash prize of 10,000 USD. The other prizes were in-kind and included equipment for poultry production and coupons for the veterinary service. It was a big marketing success. …"

Now that we have heard about successful marketing efforts to reach the lower limit, how do we manage the upper limit? What should a financial institution do, if it reaches the upper limit? Let us turn again to AGLEND to see what they did when they hit the 10% ceiling for cattle loans last year. The following policies were applied to implement “credit rationing” for cattle loans:

- **Loan approval transferred to a higher level.** While loans are generally decided at branch level, new loans for cattle producers that would increase the sector share to more than 10% of the overall portfolio were to be decided by the district credit committee. Here, all cattle loans that were submitted from the different branches could be compared. Only the “top” loans were approved and loans with the slightest deficiency or weakness were turned down.

- **Preference given to existing customers.** Preference was given to those cattle producers that AGLEND already knew from previous loans. First-time borrowers were asked to wait.

- **Stricter borrower selection criteria.** The selection criteria for borrowers became more rigid. The benchmarks to be attained in the loan assessment were increased. Only loan applicants with an excellent repayment history were allowed to obtain new loans. The requirements in terms of accumulated repayment capacity etc. were also increased.

- **Stricter collateral requirements.** Collateral requirements for cattle producers became tighter relative to other sectors. Cattle themselves were no longer accepted as the only collateral; additional items such as household goods had to be provided as well.

- **Risk premium.** All new loans granted beyond the 10% threshold had to pay an additional risk premium of 1% per annum. This means that borrowers were in fact not being treated equally. A new borrower had to pay an additional charge for increasing the overall risk of the sector portfolio despite potentially having the same repayment capacity as any of the producers who got their loans earlier. Although this seems unfair from the perspective of the individual borrower, it makes sense for the lending institution to obtain compensation for accepting higher sector risks in the portfolio.
As a consequence of these measures, the cattle producers’ demand for AGLEND loans decreased. By the same token, loan losses in the cattle sector were cut as the repayment and risk profile of the remaining cattle borrowers significantly improved.

iv. Limits for individual loans

Another method which helps to diversify the loan portfolio within each sector or regional sub-portfolio is setting individual loan limits. So the higher the risks associated with a specific sector or region, the lower the maximum loan amount that is permitted for individual loans in that region or sector.

Let’s have a look at AGLEND’s individual loan limits, i.e. the maximum amount in USD that can be disbursed for various activities.

<table>
<thead>
<tr>
<th></th>
<th>First-time borrowers</th>
<th>Renewals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat / Rice / Vegetable / Cattle</td>
<td>10,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Coffee / Maize</td>
<td>2,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Pigs / Poultry</td>
<td>5,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Services and trade</td>
<td>20,000</td>
<td>100,000</td>
</tr>
</tbody>
</table>

In general, AGLEND treats first-time borrowers and repeat borrowers differently. Maize has the lowest limits in both categories. The reason is that maize is considered a high-risk economic activity in the country where AGLEND operates and they, consequently, prefer to finance only smaller producers. The highest individual loan limits can be found in the service and trade sector. These relatively high individual loan limits seem to be the logical consequence of the equally high sector limits previously noted. The service and trade sector are considered relatively low-risk so that large individual loans in these sectors do not represent a major threat to loan portfolio quality.

v. Loan Provisioning

Provisioning is done on a regular basis to cater for potential loan losses. The minimum requirements for provisioning are defined by the Central Bank or the Supervisory Authority. In the event that a lending institution does not have a license as a bank or non-bank financial institution and is not supervised by any local authorities, it is recommended that it follows international best practices as regards provisioning. Provisioning rates normally take into account:

- The number of days in arrears;
- The loan maturity and repayment frequency;
- The quality of collateral.

It is usual to establish a loan classification system with differing rates of provision. AGLEND applies the following loan provision policy:

<table>
<thead>
<tr>
<th>Days with overdue payments</th>
<th>Provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Normal</td>
<td>0 days</td>
</tr>
<tr>
<td>II. Watch</td>
<td>&lt; 30 days</td>
</tr>
<tr>
<td>III. Sub-Standard</td>
<td>30 - 90 days</td>
</tr>
<tr>
<td>IV. Doubtful</td>
<td>90 - 180 days</td>
</tr>
<tr>
<td>V. Loss</td>
<td>&gt; 180 days</td>
</tr>
</tbody>
</table>
AGLEND caters for the specific risk profile of each economic sector by applying sector-specific provisions for the “normal” category. For the other categories II-V there is no differential treatment by sector; uniform provisions are applied regardless of the sector the overdue loans belong to.

For example, when new loans are disbursed, an up-front provision is made that appears in the “normal” category. When loans are disbursed to high-risk maize producers, a loan loss provision of 5% is set aside. In contrast, the up-front provision for vegetable producers is only 2%. With this risk-based approach, AGLEND builds up a loan loss reserve that matches the expected loan losses due to the different risk exposure per sector.

The additional risk premium to maize producers as compared to vegetable growers is charged to the customer. AGLEND’s credit manager is very clear on this policy: “Not all customers are equal. We have to give them differential treatment. Customers who are less risky than others should also pay less. In contrast, those that represent a larger risk to us should pay an appropriate risk premium.”

It is very important that the provisioning policy is monitored regularly and adjusted if needed. AGLEND, for example, reviews and adjusts its provisioning policy on a quarterly basis. Whenever the AGLEND management identifies major threats such as an imminent coffee pest, expected floods or major disruptions in the international crop markets, it reacts immediately and raises provisions for the loans disbursed to those sectors. AGLEND is not alone in its endeavour to mitigate loan portfolio risks properly. The importance of sound provisioning, for example, was shown when hurricane Mitch hit Central America in 1999. To the surprise of many experts, Financiera Calpiá in El Salvador was not severely affected. Thanks to the large loan loss reserves it had built up, it could weather the storm without major difficulties.

vi. Write-off policies

Writing-off should be done in such a way as to provide a clear picture about the real situation of the loan portfolio, indicating the true level of (potentially) earning assets. As has already been pointed out earlier in this chapter, AGLEND writes off loans that are overdue for more than 360 days unless there are explicit reasons for doing so earlier. This benchmark was based on the experience that had been accumulated with overdue loans over a number of years. Surprisingly, it was shown that even loans that were overdue for several months could be fully recovered if the loan officers and the borrower intensively work on a solution. So although the entire outstanding balance of an overdue loan is already fully covered by loan loss provision after 180 days, AGLEND decided not to immediately write the loan off at that time but rather keep it in the portfolio for another 6 months.

Whether a loan is written off or not, however, does not reduce the obligation of a loan officer to continue trying to recover all loans he/she originally recommended. Therefore, loan officers continue recovering loans that have been overdue even for long periods, including those that have already been written off. This gives a clear signal both internally and externally that there is no lax treatment of problem loans. This is a very important signal that prevents write-offs becoming “a simple solution for bad portfolios”.

vii. Differentiated loan monitoring

Loans to high-risk economic sectors or regions should be monitored differently from those that are disbursed to low-risk farm households. At AGLEND, for example, visits to clients primarily engaged in coffee, potato and maize production are scheduled more frequently than to other sectors. For these sectors, monthly loan instalments are required which represents an additional monitoring device. Also overdue loans in these sectors are more quickly followed up. While there is a general period of 5 days to contact the customer, AGLEND loan officers are required to contact overdue borrowers in the coffee, potato and maize sector within 2 days maximum.
5. What kind of techniques would you apply to ensure that loans to wheat farmers make up between 10-20% of the overall loan portfolio?

6. What could be the medium and long term negative effects of the “credit rationing” policy applied by AGLEND to restrict the expansion of the cattle loan portfolio?

7. Go back to the checklist for screening borrowers in Lesson 3 and review it again from a loan portfolio management perspective. Which economic sectors and regions are apparently excluded from access to loans? Which groups can become eligible for loans if they meet certain conditions?

8. Compare the sector limits on p.10 with the actual distribution of AGLEND’s loan portfolio on p.7. Which sectors are within and which are outside the sector limits? It is possible that the loan portfolio share of a specific sector is outside the range of defined sector limits. What would you do to control such a situation?

9. Why not develop a loan provisioning policy for your institution that takes into account sector and regional risks? Try to define different loan risk categories and an appropriate level of provisions.

Answer to the Exercise on page 9:

Revised loan loss ratios for the coffee sector:

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee</td>
<td>5.6%</td>
<td>6.4%</td>
<td>5.3%</td>
</tr>
</tbody>
</table>