Appendix B

THE CALCULATION OF LENDER TRANSACTION COSTS.

B.1 Administration Costs.

B.1.1. The administration costs of a sugar mill are the sum of the wage and salary expenses of accounting officers who deal directly with credit activity. Only a proportion of this expenditure on the officers is counted for sugar mill administration costs, as these people spend their time on other activities as well. This proportion should come from the ratio between the amount of time they spend on credit activity and their total working time, multiplied by their wage. By quantifying the amount of time that they spend on credit activity, two factors are required: their credit activities and the amount of time spent on each credit activity.

The amount of time spent on each credit activity is unknown. For this study, that proportion is approximated by the ratio between their credit activities and their total activities, times their wage, by assuming that the time spent on each activity is identical. The calculation of this ratio is around 0.2915. Consequently, the expenditure spent on credit administration of a sugar mill is the wage spent on accounting officers multiplied by 0.2915.

The sugar mill administration cost per contract is calculated from the expenditure on credit administration, divided by the number of sugar cane farmers who contract with the mill.

B.1.2. The administration costs of the big sugar cane farmers are estimated by a portion of the opportunity cost of time that big sugar cane farmers spend in administering loans. This partly accounts for the administration cost, because the big sugar cane farmers spend their time on other activities as well. This portion should come from the ratio between the amount of time that big sugar cane farmers spend on credit activity and the total amount of their working time, multiplied by their opportunity cost of time. The amount of time that they spend on credit activity cannot be observed. The ratio is taken as that of a sugar miller, as big sugar cane farmers and
sugar millers have similar activities. The big sugar cane farmers act like sugar millers, as there are small farmers delivering sugar cane to the big farmers. The administration cost of big sugar cane farmers is their opportunity cost of time multiplied by 0.2915.

The big sugar cane farmer’s administration cost per contract is expenditure on credit administration, divided by the number of sugar cane farmers who contract with them.

B.1.3. The administration costs of BAAC is expenditure on salaries and fringe benefits to BAAC officers who work in the banking and accounting departments. Since these officers spend their time on depositing and lending activities, this expenditure is counted only as a portion of the administration cost. This portion should come from the ratio between the amount of time they spend on lending activity and the total amount of their working time, multiplied by their salaries and fringe benefits. The amount of time they spend on lending activity is unknown. That portion is calculated from the ratio between the number of lending contracts and the total number of contracts (which includes both lending and depositing contracts), times their salaries and fringe benefits, assuming that they spend the same amount of time on administering the loans and deposits of each contract.

One-third of salaries and fringe benefits of the manager, deputy manager and administrative officers are counted as administration costs. The reason for counting one-third of their salaries is that they deal with all three departments of the BAAC branch organization: the banking and accounting, agricultural credit and law departments. It is assumed that they spend the same amount of time in each department.

The BAAC administration cost per contract is the expenditure spent on credit administration, divided by the number of loan contracts.

B.1.4. The administration costs of commercial banks is calculated from the sum of wage and bonuses of commercial bank officers who administer loan contracts. This cost per contract of commercial banks is the total amount of expenditure, divided by the number of loan contracts.
B.2 Information Cost

B.2.1. Information costs of a sugar mill are the sum of the salaries, bonuses and gasoline allowances of supervisors who supervise and collect information about small sugar cane farmers. This expenditure is counted only as a portion of information costs, because this expenditure goes on other activities as well. This portion should come from the ratio between the amount of time supervisors' attribute to credit performance and the total amount of their working time, multiplied by the total expenditure. The amount of time spent on credit activity cannot be observed. For this study, that portion is estimated by the ratio between the supervisors' special bonus on credit and their total special bonus, multiplied by the total expenditure. It is around 0.27503. As a result, the information costs of a sugar mill are the expenditure on supervisors, times 0.27503.

As previously mentioned, a sugar mill classifies sugar cane farmers into two groups: small and big. The sugar mill information costs, discussed above, are information costs arising from collecting information on small sugar cane farmers. The information costs arising from obtaining information on big sugar cane farmers are the sum of the salary and bonuses of the sugar mill officers who collect information on big sugar cane farmers. They are similar to information costs spent on collecting information from small sugar cane farmers. The officer's salary and bonus is partly counted toward the information costs. The information costs of a sugar mill for gathering information on big sugar cane farmers is expenditure on the officer, multiplied by 0.27503.

The sugar mill information cost per contract is calculated from expenditure on acquiring information on the small and the big sugar cane farmers, divided by the number of the small and big sugar cane farmers who contract with the mill.

The sugar mill incurs different information costs for each group. Sugar mill information costs are fixed regardless of loan size. This is because the methods of collecting information by a sugar mill are based on the borrowers' behavior and the mutual trust between borrowers and lenders.

B.2.2. The information costs of big sugar cane farmers, who lend their money to small farmers, are expenditure on the wages of their supervisors and gasoline.
Only a portion of this expenditure is counted as information costs, as this expenditure also goes on other activities. This portion should come from the ratio between the amount of time that supervisors of the big sugar cane farmers spend on credit activity and the total amount of their working time, multiplied by this expenditure. Unfortunately, the amount of time they spend on credit activity is unknown. It is assumed that the ratio is the same as those of a sugar miller, since supervisors of the big sugar cane farmers and the sugar mills have similar activities. The information costs of the big sugar cane farmers are expenditure on their supervisors, multiplied by 0.27503.

The information cost, per contract, of the big sugar cane farmers is calculated from expenditure on acquiring information about small farmers, divided by the number of small farmers who contract with them.

B.2.3. The information costs of BAAC are the sum of the salaries, fringe benefits, travelling expenses and per diem of BAAC officers, who work in the agricultural credit department. This expenditure is partly counted for the information costs, as these officers spend their time not only on collecting information about borrowers, but also enforcing the repayments of loans by the borrowers. The planning operation records on credit of the BAAC at Udonthani shows that agricultural credit officers spend 80% and 20%, respectively, of their working time acquiring information about borrowers and enforcing loan repayments.

One-third of the salaries and fringe benefits of the manager, deputy manager and administrative officer’s account for information costs, because these officers also deal with the agricultural credit department. These officers are assumed to spend the same amount of time in each of the agricultural credit, banking and accounting and law departments. The BAAC information cost per contract is expenditure on collecting information about borrowers divided by the number of borrowers.

B.2.4. The information costs of commercial banks are calculated from the spread between a commercial bank's loan interest rate, using land title and fixed deposits to secure the loan, after deducting the proportion of enforcement costs. Theoretically, information costs of commercial banks should come from salaries, bonuses and travelling expenses of the bank officers who collect information on
borrowers. Unfortunately, these expenditures are unknown. For this study, commercial banks' information costs are calculated from the spread of their interest rates. The survey finds that the difference of these interest rates is 2.25% of the loan size. The information costs of commercial banks are 1.99% of loan size, which is the residue after deducting the proportion of 0.26% for enforcement costs.

**B.3 Enforcement Cost**

B.3.1. The enforcement costs of a sugar mill are the sum of the special bonuses of supervisors collecting and enforcing loan repayments. Since a sugar mill chooses a different mode of enforcement for the small and big sugar cane farmers, the enforcement costs are different for each group.

From the survey, it is observed that the mode of enforcement imposed on the big sugar cane farmers is borne by them alone. The cost of enforcement on the big sugar cane farmers, per contract, is calculated from those expenditures mentioned above, divided by the number of small sugar cane farmers who contract with them.

B.3.2. The enforcement costs of big sugar cane farmers are the sum of the reward bonus paid to supervisors for enforcing loan repayment. The enforcement cost per contract is the sum of the reward bonus, divided by the number of small farmers who contract with them.

B.3.3. The enforcement costs of BAAC are the sum of the salaries and fringe benefits of the legal division officers, together with a proportion of the salaries, fringe benefits, travelling expenses and per diem of the agricultural credit division officers. This is because the agricultural credit officers spend their time enforcing loan repayments as well. Activities include cautioning farmers, collecting loans and extending the period of repayment for the contract. The planning operation which records the credit of BAAC at Udonthani shows that agricultural credit officers spend 20% of their working time enforcing loan repayments.

One-third of the salaries and fringe benefits of the manager, deputy manager and administrative officers are counted as information costs, as these officers are also dealing with the law department. By assuming that these officers spend the same
amount of time in the agricultural credit, banking and accounting and law departments, respectively, the BAAC enforcement cost per contract is calculated from expenditure on enforcing loan repayments, divided by the number of borrowers.

B.3.4. The commercial banks’ enforcement cost is the outlay on the enforcement of mortgages when the borrowers fail to comply with the loan agreement. Since most of the commercial banks’ branches do not have their own legal division, they have to ask a law office to enforce default proceedings in court. For enforcement of a mortgage, the lawyer will charge around 13% of the amount of money involved. The probability of the borrowers not complying with the loan contract is 2%. As a consequence, commercial banks’ enforcement costs are 0.26% of the loan size.

B.4 Risk Premium

B.4.1. For the risk premium of a sugar mill, there are four parameters to be estimated:

1) the rate of default for a sugar mill is estimated by the average default for this mill from the 1987/88 to the 1997/98 production year. The reason for using the average default instead of the default rate in the 1997/98 production year is to eliminate unusual factors such as drought, crop failure and other irregular factors. The average default is estimated to be 1.79% of the total amount of the loan;

2) the costs of loan transactions are the sum of the mill's cost of administration, information collection and enforcement. The costs to small and big sugar cane farmers are estimated to be 291.3367 and 300.431 baht;

3) the cost of the fund is 16% of the amount of the loan; and

4) the principle actually repaid is calculated from the amount of repayment collected, divided by the total amount of loan granted from the 1983/84 to the 1997/98 production year. Each baht loaned out was found to be repaid to the amount of 0.847% baht or 84.7%. This amount is lower than the 1 default rate because part of the default was not recovered.

B.4.2. For the risk premium of big sugar cane farmers, the four parameters are estimated as:
1) the rate of default is the average rate of default for big sugar cane farmers. This figure is 16.8% of the total amount of the loan;

2) the costs of loan transactions are the sum of administration, information and enforcement costs of the big sugar cane farmers. These costs are estimated to be 144,144 baht for loans of every size;

3) the cost of the fund is 17%; and

4) the principle actually repaid by proxies is the riskiest choice that the big sugar cane farmers face. This is the case of small farmers who obtain their loans from more than one big sugar cane farmer. It is found that one baht loaned out by big sugar cane farmers will be repaid by 0.65 baht or 65%.