

PROMOTING LINKAGES BETWEEN FORMAL AND INFORMAL FINANCE IN AN AFRICAN COUNTRY: A CASE STUDY

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1. Problems

Jonathan Mutumbo, citizen of a South Sahara African state, wants to move from the country to the city together with his family. There he hopes to find a better job. At first he moves to the city alone, where he has to get by with odd jobs and seasonal work (street vending, small trade, cook shops). His wife, who remained behind with two children, contributes to the family income by taking small sewing jobs. Mutumbo lives with a relative. However, his greatest wish is to build or buy a small house for himself and his family.

1.1. *Housing Finance Through Formal Financial Institutions*

To this end, Mutumbo goes to the First National Housing Bank, the largest source of housing loans, and (after he has gathered up all his courage) asks for a loan to build or buy a house. The Housing Bank, however, makes high "solvency" demands. It denies Mutumbo the loan, claiming that from their point of view repayment of the loan out of his regular income or that of his family cannot be guaranteed, and that Mutumbo's idea of a house does not meet the bank's requirements for sufficient collateral. For in the so-called squatter areas (these areas on the outskirts of the city are occupied by settlers without legal title) a secure tenancy does not exist, so that at most the building material could be counted as collateral, which the Housing Bank does not accept because of the high expenditure involved. Moreover, in their opinion, Mutumbo does not have a sufficient amount of individual capital (the bank requires up to 40% of the house price as down payment).

1. Do you think these demands on low-income families are justified? Which consequences do these demands have for the credit seeking population?

1.2. *Informal Finance Through Rotating Savings & Credit Associations (RoSCAs)*

Mutumbo describes his experiences with the bank to a friend. This friend - a man very well respected by the whole community - has had similar experiences already some years ago. He suggests that he, Mutumbo and 28 other members of the community, who he knows well (especially in regard to their views on punctual credit repayment), form a *Rotating Savings & Credit Association (RoSCA)*. Both the friend and Mutumbo have already participated in earlier RoSCAs (while they were still living in the country).

In such a RoSCA the members agree to pay *on a regular basis* (generally monthly) a certain sum of money, which is the same for all members. Every time the accumulated

contributions (the "*fund*") have reached a previously fixed amount, *one* member receives *the whole fund* ("*rotation of the fund*"). The first cycle of a Rotating Savings & Credit Association ends once every member has received the fund in this way (additional cycles are possible). The number of participating members in *one* cycle of a RoSCA remain constant. The member who is the first to receive the fund thus receives an *interest-free credit* to the amount of the fund minus his own contributions (RoSCA as a *credit instrument*). The member who is the last to receive the fund has saved without getting interest payments and thus has not profited from his membership. However, compared to the situation in which he would have saved the whole amount on his own, he has not lost anything either (RoSCA as *saving instrument*). All other members profit from the RoSCA, because they receive the fund earlier than if they had saved on their own.

At a meeting in the home of Mutumbo's friend it turns out that all of the thirty prospective members have a monthly income of about 300 Currency Units (CU) (3.600 CU p.a. = average income). They agree that every member *monthly* pays 20% of his income into the fund as his membership contribution. After long discussions the amount to be allocated is fixed at 1.800 CU. This amount is sufficient to build a very simple house (from simple building material, with a lot of individual work and help from neighbours), which can later be enlarged or improved on with small loans (e.g. from additional RoSCA cycles). The members can use the fund also for other purposes. The first fund is to go to Mutumbo's friend, whose job as the acknowledged foreman it will be to manage the fund and collect the contributions (at the monthly members' meetings in his home).

- a) What is the earliest at which Mutumbo could start building his house? How long does one cycle of this RoSCA take, and which problem could arise for Mutumbo, if the annual inflation rate in the country is at 5%?

The members cannot decide whether the fund is to be allocated *by lot*, *by decision of the foreman* (Mutumbo's friend) or *by auction*. In an auction the members would make a secret offer or bid on the amount of discount on the fund they would be willing to pay when they receive the accumulated membership contributions (in their respective rounds). The one offering the highest discount (or the lowest fund amount) then is allocated the appropriately reduced fund. The discount is distributed among *all* the members (including the bidder) in the form of a reduction in contributions in the following month.

- b) Which advantages and disadvantages do these methods of allocation have? Which one would Mutumbo chose?
- c) Where are the strengths and weaknesses of Rotating Savings & Credit Associations?

Do you see possibilities to support RoSCAs, allocating the fund by lot or by decision of one or more members, with external money?

1.3. Linking up Rotating Savings & Credit Associations with Formal Financial Institutions

The government of the state in which Mutumbo lives has, over a number of years, watched the success (regarding the repayment of credits) of such RoSCAs, which can be found not only throughout the country but also worldwide, and have noticed their weaknesses. Therefore, the government decides to start a *National Housing Finance Programme*, with which the successful Rotating Savings & Credit Associations of the country will be supported and linked to formal financial institutions (especially the First National Housing Bank). To this end a *pilot project* will be started with fifty selected RoSCAs, which have been working successfully for a period of at least two years. These RoSCAs first have to convert (by signing an appropriate document) from temporary to permanent groups with the *status of joint and several liability*. The government has worked out two propositions on how to support the RoSCAs.

Proposition A: Contractual savings & loan scheme between RoSCAs and Housing Bank:

The 50 Rotating Savings & Credit Associations continue with their successful system unchanged, including the allocation of the fund by auction, which has come to be accepted all over the country, but the discount amounts of those members who eventually receive the reduced fund are paid by the foreman into an account for the RoSCA at the First National Housing Bank. Based on these deposits ("savings" of the RoSCA) the individual associations work out a contractual savings & loan scheme with the Housing Bank, covering the following points:

- The savings of the RoSCA, which are paid monthly into the account, remain with the Housing Bank as collateral.
 - Based on these savings, the bank distributes *credits* to the individual RoSCAs. The extent of those credits is calculated *twice a year* by multiplying the current account balance by a factor derived from the number of RoSCA-cycles with satisfying repayment. This factor could, for example, start at 1.0 and be raised *twice a year* by 0.25 for every successful cycle up to a possible maximum of 4 or 5.
 - The interest payment for the savings deposits and credits between the RoSCAs and
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the Housing Bank are fixed at the normal bank rate. However, the interest rates between the RoSCAs and their members are left to the *discretion of each group*.

- RoSCAs act in this case as *financial intermediary*, which collects the contributions and repayments from members and manages the savings and credits of the group with the bank, thereby considerably reducing transaction costs for the Housing Bank.

At the end of each cycle, every RoSCA has the option of constituting itself as a RoSCA with a nonrotating permanent fund, or to convert into a nonrotating Savings & Credit Association (SCA). This SCA would then use the accumulated savings as a basis for bank credits and relend these amounts to their members.

Proposition B: Revolving Funds for nonrotating Savings & Credit Associations

The 50 selected RoSCAs are firstly converted into *nonrotating* Savings & Credit Associations (SCAs). In these associations the members monthly pay a certain sum into a fund, from which (after a certain period of saving) they *can* receive a credit (with a limited extent) on the same conditions. These groups work like a "*revolving fund*", which continuously gives out small credits and refunds through membership contributions and credit repayments. The currently available credits are usually allocated by lot.

The *potential for self-financing* in this informal contractual savings & loan scheme is very *limited*, for two reasons:

- As long as *only internal resources* of low-income families are mobilized, the system has only a poor financial basis.
- The new start-up takes a *long time*. With a generally low overall accumulation of capital, the credit needs of the population will soon exceed the available means, so that longer waiting periods are inevitable. However, long waiting periods can be very demotivating for the population.

Due to these problems the government wants to make available to the 50 (by this time already nonrotating) Savings & Credit Associations *1 million currency units* of development aid as start-up money through the First National Housing Bank over a period of *20 years*. The capital is to serve the Savings & Credit Associations as a *revolving fund* in the sense that the repayments of the individual credits have to be used immediately to provide new credits. With this capital the bank is to grant credit applications made by the *solely*

responsible foremen of the individual SCAs. The foremen of the Savings & Credit Associations are supported by a local employee of the bank in questions of accountancy, organisation and contribution payment. All money of the respective SCAs is kept in a separate bank account, i.e. the members continue to pay their contributions to the foreman and he (or the bank employee) pays them into the bank account where they are used *continuously and immediately* for further credits. In this way the transaction costs for the bank can be reduced.

To make things easier, the government assumes the following data for all SCAs for a single credit to an SCA member, which can *only* be used to build or buy a house:

- annual nominal income of the SCA members (average): 3 600 CU
- costs for a well-constructed house: 3.000 CU
- 25% individual capital: 750 CU
- credit extent (S): 2.250 CU
- interest rate (i): 5%
- period of credit (n): 15 years
- An annuity redemption is arranged, with annual payment being calculated as follows:
 $\text{payment} = S \cdot q^n \cdot [(q - 1) / (q^n - 1)]$ with $q = 1 + i$
- annual rate of inflation: 5%

An *inflationary adjustment* (=difference between the credit extent needed in 15 years for a *similar* follow-up measure and the current credit extent) is arranged and spaced evenly over the 15-year-period. The annual inflationary adjustment and the payment (=total reflux to revolving fund) will be used for follow-up credits. Fee for costs of fund management: 0.5% of credit extent (annually) to the bank.

For a housing loan in the first year, provided to one member of the 50 local Savings & Credit Associations, this amounts to the following (round figures):

- payment: $2.250 \cdot (1 + 0,05)^{15} \cdot [(1 + 0,05) - 1] / [(1 + 0,05)^{15} - 1] = 217$ CU
 - costs for follow-up measure in 15 years
 - (at 5% annual inflation) $= 2250 \cdot (1 + 0,05)^{15} = 4.678$ CU
 - inflationary adjustment $= 4.678 - 2.250 = 2.428$ CU (annually $2.428/15 = 162$ CU)
 - total reflux $= 217 + 162 = 379$ CU
 - annual management costs $= 2.250 \cdot 0,005 = 11$ CU
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$$- \text{payment to income} = (379 + 11) / 3.600 = 11\%$$

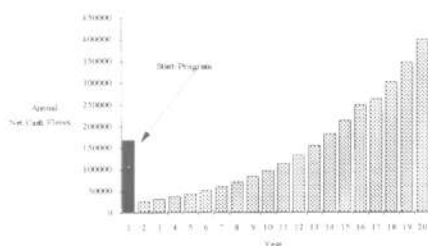
Table 1a: Payment Plan for a Single Housing Loan Within the Project "Revolving Fund" in Year 1

Year	Payment	Interest	Principal	Loan Balance	Inflationary Adjustment	Total Reflux	Management Costs	Payment to Income (in%)
1	217	113	104	2146	162	379	11	11
2	217	107	109	2036	162	379	11	11
3	217	102	115	1921	162	379	11	11
4	217	96	121	1801	162	379	11	11
5	217	90	127	1674	162	379	11	11
6	217	84	133	1541	162	379	11	11
7	217	77	140	1401	162	379	11	11
8	217	70	147	1254	162	379	11	11
9	217	63	154	1100	162	379	11	11
10	217	55	162	939	162	379	11	11
11	217	47	170	769	162	379	11	11
12	217	38	178	590	162	379	11	11
13	217	30	187	403	162	379	11	11
14	217	20	197	206	162	379	11	11
15	217	10	206	0	162	379	11	11
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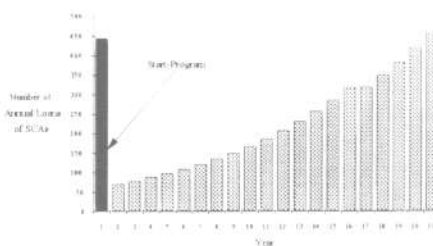
With the 1 million CU given to the SCAs by the government, with an assumed (for reasons of simplicity) standardized amount of 2.250 currency units, approx. 444 credits can be given out by the Savings & Credit Associations to their members. According to tab. 1a a single credit results in an annual reflux of approx. 379 currency units, so that for the whole start-up programme in the first year a reflux of 168.271 currency units (rounded figures) is calculated. From this a new programme cycle of 71 follow-up credits with inflation-induced higher costs for building a home (and a resulting higher credit extent) of $2.250 \cdot (1+0,05)^1 = 2.363$ currency units will be financed. From the accumulated reflux of the start-up programme and the first follow-up programme a new programme cycle of 79 individual credits (with an extent of 2.482 currency units) can then be given out:

Table 1b: Payment Plan for the Whole "Revolving Fund" Project

Year	Annual Reflux from the Start-up Programme	Program Cycle Current Year				Total Annual Reflux Accumulated	Number of Follow-Up Credits in the Current Year	Number of Follow-Up Credits Accumulated
		Cost of Housing	Payment	Inflationary Adjustment	Total Annual Reflux			
1	168271	2363	217	162	168271	168271	71	71
2	168271	2481	228	170	28315	196586	79	150
3	168271	2605	239	178	33080	229666	88	239
4	168271	2735	251	187	38646	268312	98	337
5	168271	2872	263	197	45149	313461	109	446
6	168271	3015	277	207	52746	366207	121	567
7	168271	3166	290	217	61622	427829	135	703
8	168271	3324	305	228	71991	499820	150	853
9	168271	3490	320	239	84105	583925	167	1020
10	168271	3665	336	251	98258	682183	186	1206
11	168271	3848	353	264	114791	796974	207	1413
12	168271	4041	371	277	134108	931082	230	1644
13	168271	4243	389	291	156674	1087756	256	1900
14	168271	4455	409	305	183038	1270793	285	2185
15	168271	4678	429	320	213837	1484631	317	2503
16	0	4911	451	336	249820	1566180	319	2822
17	0	5157	473	353	263542	1801407	349	3171
18	0	5415	497	371	303124	2071452	383	3554
19	0	5686	522	389	348565	2381371	419	3972
20	0	5970	548	409	400715	2736937	458	4431



picture 1a: reflux of the current programme cycle



picture 1b: number of credits of the current programme cycle

The individual credits, which are pictured together here to give an overview, are, according to the available means, distributed *evenly* among all Savings & Credit Associations, which then re-lend the money to their members *at their own discretion*. They can impose certain demands on the member, who is to receive the credit (e.g. the credit extent

could be limited to triple the amount of the already paid contribution).

For the group to which Mutumbo belongs an even distribution of the money from a revolving fund would mean that in the first year nine members (444 credits for 50 SCAs), in the second year two members and so on would receive a credit. In the eleventh year every member would have received a credit.

3. Discuss the pros and cons of the two propositions! Do you see possibilities to combine them?

2. Possible Solutions

2.1 Housing Finance Through Formal Financial Institutions

The requirements of the Housing Bank pictured here are quite rational and understandable (and therefore typical for financial institutions in developing countries), because these institutions are in a difficult situation:

- They can assess their prospective customers only in a limited way in regard to their reliability, because they do not have extensive information about them. Controlling the use of the credit appears even more difficult. At the same time the credit applicants have no confidence in formal institutions, because there are no social connections whatsoever between them.
 - In most cases the credit applicants do not have possible collateral, so that in case of default sanctions by the institutions are difficult to implement. Moreover, the institution often baulks at the negative publicity that comes with sanctioning credit applicants who are too poor to meet their financial responsibilities.
 - Due to the (low) level of education in low-income families and the comparatively extensive application and approval procedures, potential credit applicants have to invest a lot of time and money without guarantee of a positive result, i.e. an approved credit. This keeps many families from applying in the first place.
 - Due to the high management expenditure and the resulting high transaction costs for formal institutions it does not "pay" for them to provide small credits, which are often sufficient for the credit applicant. They are forced to fix certain minimum extents for their credits. However, together with the higher interest rates (due to the default risk) and shorter credit periods this leads to monthly repayments which are unattainable for many low-income families.
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The demands the Housing Bank places on applicants under these circumstances are justifiable, but in this way the major part of the population in developing countries (the low-income families) are excluded from a (formal) credit and therefore from the possibility of owning their own home. For this "target group" *informal* (i.e. non-government controlled) "financial institutions" are generally the only way to receive a "credit". For low-income families *Rotating Savings & Credit Associations* are often the only alternative to relatives or professional money lenders, who charge high interest rates. A possible connection between formal and informal institutions is shown in part 3.

2.2 Informal Finance Through Rotating Savings & Credit Associations (RoSCAs)

- a) To answer the question of the earliest possible time for Mutumbo to begin building his house, the following calculation is necessary:

pre-fixed fund amount: 1.800 CU

monthly contribution of *one* member: $300 \cdot 0.2 = 60$ CU

monthly contribution of *all* 30 members: $30 \cdot 60 = 1.800$ CU

The pre-fixed fund amount will therefore be allocated *monthly*. But, because the first fund goes to Mutumbo's friend (the foreman), the earliest Mutumbo could start building or buying his house is in *two months*, that is if his friend does not re-lend his fund to Mutumbo.

Because *all* 30 members receive the fund once, one cycle of the RoSCA takes $30 \cdot 1 = 30$ months, i.e. *2.5 years*. In the worst case, i.e. if Mutumbo is the last to receive the fund, at which time the cost of the house he wishes to build at an annual inflation rate of 5% will have gone up to $1.800 \cdot (1 + 0.05)^{2.5} = 2.033.51$ CU. Therefore, the fund does no longer cover the cost of building a house. Additionally, Mutumbo would have "thrown away" possible interest earned for 2.5 years period. And towards the end of the RoSCA cycle the risk of tardy contribution payments from those members who have already received the fund increases. These considerations demonstrate the limited financial power and risk of RoSCAs.

- b) The pros and cons of the three possibilities mentioned to allocate the fund can be summarized as follows:
- With an *allocation by decision of one or more members* the allocation times for each member can be fixed in advance, so that each member knows when he/she will receive the fund and can make appropriate plans. Furthermore, this offers the possibility to help members who find themselves in a sudden emergency, i.e.
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through illness or having to finance a burial or a wedding. A disadvantage of this method (i.e. allocation through the decision of the foreman which Mutumbo would prefer) lies in the danger of bribery and nepotism.

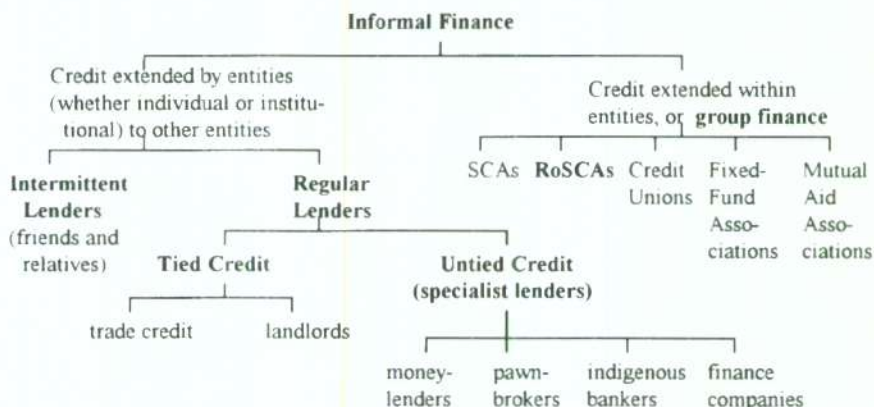
- In response to this danger the method of *allocation by lot* has become more popular around the world, because it ensures that all members have equal chances of receiving the fund. Nobody is privileged, because there is only one lot for every member. This form of allocation in some ways resembles a "game of chance", which can turn out to be quite motivating. But this form also contains the greatest uncertainty about the time of allocation. Moreover, the fund is allocated regardless of whether the member urgently needs it or not.
- In an *allocation by auction* the members who urgently need the fund can offer a correspondingly higher discount, normally ensuring that they do get the fund. Parallel to that a number of RoSCAs introduce a system of *incremental payments* (=interest equivalents), which are paid directly to the receiver of the fund in every round. These payments are made by those members who have already received the fund. For a certain member in a certain round k , these payments amount to a certain multiplier (e.g. 0.5) of the figure in the rounds preceding round k . This means that in the second round the first member to receive the fund would pay $0.5 \cdot 1 = 0.5$ CU to the member who received the fund in this round. In the third round the first fund recipient pays $0.5 \cdot 2 = 1$ CU and the second fund recipient pays $0.5 \cdot 1 = 0.5$ CU to the member who received the fund in that round and so on. For the RoSCA in which Mutumbo takes part a possible, *randomly selected* distribution of discount offers and incremental payments in the individual rounds could look like this:

Table 2: Possible Distribution of the Fund Amounts for Mutumbo's RoSCA for Allocation by Auction

Month of Distribution	Original Fund Amount	Highest Discount Offer by a Member	Reduced Fund	Incremental Payment	Total Amount Received
1	1800	0.00	1800.00	0.00	1800.00
2	1800	590.34	1209.66	0.50	1210.16
3	1800	558.00	1242.00	1.50	1243.50
4	1800	510.23	1289.77	3.00	1292.77
5	1800	477.04	1322.96	5.00	1327.96
6	1800	435.60	1364.40	7.50	1371.90
7	1800	404.64	1395.36	10.50	1405.86
8	1800	373.68	1426.32	14.00	1440.32
9	1800	342.72	1457.28	18.00	1475.28
10	1800	311.76	1488.24	22.50	1510.74
11	1800	280.80	1519.20	27.50	1546.70
12	1800	249.84	1550.16	33.00	1583.16
13	1800	218.88	1581.12	39.00	1620.12
14	1800	202.33	1597.67	45.50	1643.17
15	1800	187.92	1612.08	52.50	1664.58
16	1800	156.96	1643.04	60.00	1703.04
17	1800	144.98	1655.02	68.00	1723.02
18	1800	126.00	1674.00	76.50	1750.50
19	1800	110.22	1689.78	85.50	1775.28
20	1800	100.43	1699.57	95.00	1794.57
21	1800	89.66	1710.34	105.00	1815.34
22	1800	78.45	1721.55	115.50	1837.05
23	1800	64.08	1735.92	126.50	1862.42
24	1800	45.34	1754.66	138.00	1892.66
25	1800	33.12	1766.88	150.00	1916.88
26	1800	20.90	1779.10	162.50	1941.60
27	1800	15.78	1784.22	175.50	1959.72
28	1800	9.65	1790.35	189.00	1979.35
29	1800	2.16	1797.84	203.00	2000.84
30	1800	0.00	1800.00	217.50	2017.50

An auction reduces the uncertainty about the time of allocation for the members, and in a certain way the fund allocation becomes calculable, a fact that has to be "bought", however, by a form of "interest payment" (i.e. the discount and the incremental payments to the other members). In this way members who want to use the RoSCA more as a saving instrument get a kind of "interest payment" for their invested capital. This form of equalization payment (in exchange for the late allocation of the fund) cannot be found in the other forms of allocation. However, this form is more difficult to organize than the others. The services of the foreman have to be "professionalized", because he has to organize the auction and distribute the discounts and incremental

- payments among the members, for which he normally receives a certain share of the discounts. Nevertheless, this is pure cash management, for the discounts as well as the incremental payments are immediately distributed among the members. This method of allocation is very popular worldwide.
- c) Rotating Savings & Credit Associations (RoSCAs) are one of the most popular informal financing institutions worldwide and belong into the category of (financial) self-help groups.



Picture 2: Major types of informal finance in developing countries

RoSCAs are traditional institutions which can be found in many forms in urban and rural areas of almost all developing countries. They are a characteristic feature in rural areas of Africa. However, due to migration they are spreading rapidly in urban areas as well. In Latin America mostly urban-based RoSCAs can be found, although these groups also exist in rural areas. In Asia, too, RoSCAs are an often long established, primarily urban phenomenon. Due to the support of a number of foreign organisations their popularity is increasing in rural areas of some Asian countries as well.

The reasons for the high worldwide popularity of RoSCAs, and therefore their

strengths, can be summarized as follows:

- They supply people with financial services (e.g. credit allocation or opening savings accounts) who would normally be excluded from those services, mainly because RoSCAs do not require collateral. At the same time they mobilize savings capital.
- They are widespread, culturally accepted, have local roots and are integrated into economy and society. In addition they offer the possibility of social contact.
- They are geared to local needs, flexible and adaptable (e.g. when it comes to the amount of contribution (variable or fixed), the form of contribution (money or natural produce) or the number of members (one member could hold more than one share in a RoSCA)).
- Their rules and methods are simple to understand. Anybody can form a RoSCA with a few good friends, for the management expenditure and with it the transaction costs of a RoSCA are minimal.
- RoSCAs doubtlessly have a functioning structure, for their highly informal rules contain effective, culturally rooted sanction mechanisms regulating solvency, limitation of credit extent and repayment for the members. Mostly, RoSCAs are so small that the members know each other well, which places a lot of social pressure on them. Furthermore, to guarantee payment steps are taken ranging from public collection of contributions to "kidnapping" a cow or burning down the corn-bin of a tardy member. The risk of non-payment is further reduced by exclusion from further cycles of this (or any other) RoSCA and/or the necessity of a payment guarantee by a second member.
- Due to their adaptability to the respective environmental situation, the system of the RoSCAs works autonomously, without outside help (e.g. in the form of external money).

Weaknesses/Problems of Rotating Savings & Credit Association can be summarized as follows:

- They are highly dependent on all members regularly attending the meetings and paying their contributions. Some tardy members can cause the breakdown of the RoSCA.
 - RoSCAs cannot adapt their structure to members entering or leaving an existing association.
 - Funding possibilities through formal financial institutions are missing.
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- Up to now, only a limited number of funds are used productively (e.g. to build a house).
 - RoSCAs are not acknowledged as potential partners by government organizations and authorities, because they have no legal status and are normally not permanent but temporary groups.
 - If all members of a RoSCA have high expenses *at the same time*, and therefore need the fund (e.g. for all farmers the expenses for planting and harvesting come more or less at the same time), a RoSCA as financial intermediary is unsuitable, because its system cannot satisfy all these financial needs at the same time.
 - Once a member has received the fund, he cannot (normally) receive another until the end of the current cycle, even if there is an emergency (e.g. the death of a family member). There is no permanent fund for emergencies.
 - The use of the fund is in some allocation forms very difficult to plan, due to the uncertainty about the allocation time.
 - High rates of inflation lead to restrictions in the working of the RoSCAs, because the prefixed amount, resp. the distributed funds may in the end no longer be sufficient for their original purpose. In this case rising contributions or very short cycles of the RoSCA would have to be arranged.
 - They only have incomplete financial functions, resulting in a limited savings mobilization, and an underdeveloped lending business. Because of the usually interest-free allocation of the "credits" the economic basis for a systematic development of the lending business is missing anyway. For at the moment when for example more members join the RoSCA, the monthly accumulated fund rises, but at the same time more rounds are necessary for all members to receive the fund. Because the possible monthly contributions (which as a rule should not exceed 20-25% of the respective income) and the number of members (to keep the size of the group at a manageable level) are limited, the financial potential of RoSCAs is limited.
 - A Rotating Savings & Credit Association is a closed system, allowing in its basic form no influx or drain of savings or credits from or to the outside (from or to non-members).

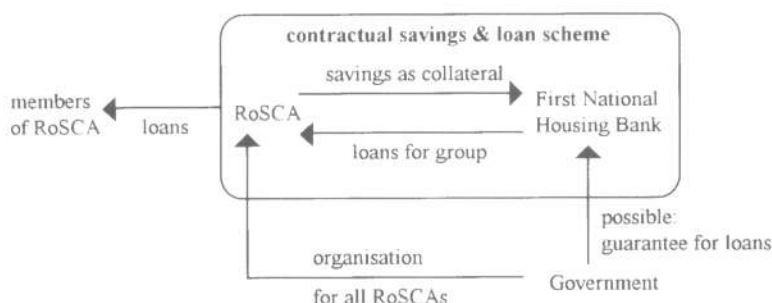
As a *conclusion* it can be said that a Rotating Savings & Credit Association satisfies the social and economic needs of low-income families and is characterized by trust, simplicity, adaptability, comparatively low interest rates and independence. Its weakness lies in its uncalculability, low capital basis and closedness.

2.3 Linking up Rotating Savings & Credit Associations with Formal Financial Institutions

Evaluation of the Individual Propositions:

Proposition A: Contractual Savings & Loan Scheme between RoSCAs and Housing Bank

The proposition described was presented in similar form for Nepal (cp. Seibel, H.D./ Shrestha, B.P., "Dhikuti: The Small Businessman's Informal Self-Help Banks in Nepal", *Savings and Development* no. 2, 1988) and can be illustrated as follows:



Picture 3: Proposition A: Contractual Savings & Loan Scheme Between RoSCAs and Housing Bank.

For the group in which Mutumbo takes part this proposition would -based on savings from discounts and incremental payments as calculated in table 2 - result in the following credit amounts with the First National Housing Bank:

Table 3: Example of a Contractual Savings and Loan Scheme for Mutumbos RoSCA

Time Period (Months)	Incremental Payments	Discounts	New Deposits in Housing Bank	Total Deposits in Housing Bank	Multiplier	Bank Loan for RoSCA
1-6	17,50	2571,21	2588,71	2588,71	1,00	2588,71
7-12	115,00	1588,80	2088,94	4677,65	1,25	5847,06
13-18	302,50	818,19	1378,57	6056,22	1,50	9084,33
19-24	580,00	377,96	1153,68	7209,90	1,75	12617,33
25-30	947,50	48,49	1179,11	8389,01	2,00	16778,02

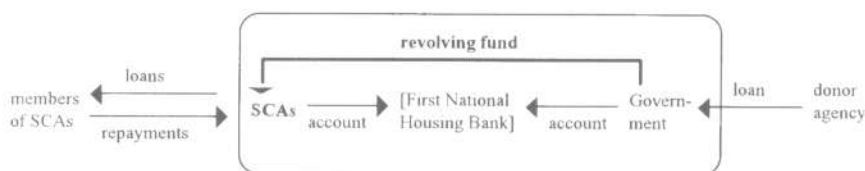
This proposition is primarily characterized by three aspects:

- No "New" group-forms "from above" (by the government) are formed, but instead self-help groups, the system of which has proven successful worldwide over a period of decades, are integrated into the programme. The credits increase the (financial) independence, self-sufficiency and savings of the group *dynamically* and a permanent dependance of the groups on the government (respectively on development aid) is avoided. The members of the group, which (on account of the problems described under question 1) would not receive a credit *on their own*, become credit-worthy through their savings *as a group*. So they alone are responsible for the success of their self-help group. But to achieve that they would have to change from temporary to permanent groups.
- With this approach the default risk lies with the First National Housing Bank, but it is considerably reduced by the savings being used as collateral. The risk can be reduced further by a government guarantee (for the credits to granted) and by so-called group repayment guarantees. At the same time the transaction costs of the bank are considerably reduced, because the foremen of the RoSCAs relieve the bank of the job of collecting contributions and repayments, doing extensive credit ratings and providing a lot of small credits with short credit periods. Also the deposit safe-keeping facilities and the funding possibilities of the bank, which the RoSCAs do not have, are used.
- In this proposition the government only acts as organizer and supervisor of the whole project. It can give the banks an additional guarantee for the credits to be granted to the RoSCAs if it becomes necessary. If not, the government does not bear the default risk, because it does *not invest own financial means*. The government budget is not reduced by this programme.

Proposition B: Revolving Fund for nonrotating Savings & Credit Associations

The model of the revolving fund has already been used in similar form in different countries, for example 1984/84 in the Rural Housing Project in Malawi (cp. G. Woldeyesus, "Financing of rural housing: the Malawi experience", *Housing Finance International*, Feb. 1989) or 1989 in Kenya (cp. "Financing Housing through Savings & Credit Cooperative Societies in Kenya", *USAID*, Feb. 1989). It was also already used for linking informal self-help groups to formal financial institutions, e.g. 1990 in Indonesia (cp. Seibel, H.D./ Parhusip, U., "Linking Formal and Informal Finance: An Indonesian Example", S. 234-248

in: *Informal Finance in Low-Income Countries*, ed. by D.W. Adams/D.A. Fitchett, Westview Press, 1992). Here the government makes available to the nonrotating Savings & Credit Associations a revolving fund as start-up money through the First National Housing Bank, as is illustrated in the following diagramme:



Picture 4: Proposition B: Revolving Fund for Nonrotating Savings & Credit Associations

In contrast to proposition A not the First National Housing Bank bears the default risk (it acts only as "executive body" for the government), but the responsible government, which uses money from development aid. However, as the payment plans (tables 1a and 1b) show, only a limited amount of development aid money has to be invested:

- The number of follow-up credits and the amount of total reflux in the current programme cycle are steadily growing ("snowball effect"). Already after five years the accumulated number of follow-up credits is larger (446) than the start-up programme (444 credits). After 13 years the fund grows completely *on its own*, because the accumulated annual reflux (1.087.756 CU) is higher than the original start-up money (1 million CU). Although in the 16th year the reflux from the credits of the start-up programme stops (due to repayment of these credits), the accumulated annual reflux rises from 1.484.631 CU (year 15) to 1.566.180 CU (year 16). In the 20th programme cycle the number of funded follow-up credits (458) is higher than the start-up programme of 444 credits. All in all, in 20 years 4.431 follow-up credits in addition to the start-up programme can be provided.
- In spite of the introduction of interest rates, inflationary adjustment and management costs, the individual credits remain *affordable* for the members, because the payment-to-income ratio of 13% is lower than in the original RoSCA (20%). This also means that the model has some room for higher interest payment, shorter credit periods, higher credit extents (and therefore lower down payments) or a higher inflationary adjustment (in case of a higher rate of inflation). In this way the amount of credit allocation and

therefore the efficiency of the revolving fund money could be increased. In this context an *internal subsidizing* would also be possible, i.e. the lowest income groups in a project area receive more favourable conditions than the higher income groups. These conditions could be as follows:

- loan 1 ("rich member"): 10% interest rate, full inflationary adjustment;
- loan 2 ("poor member"): 0% interest rate, no inflationary adjustment.

This would mean a subsidizing of the "poor" members (with low income) by the "rich" members (with higher income) in the amount of 35% of reflux. In this way the social span of the fund can be extended and the whole project stabilized (in terms of default risk). However, social distribution fights between the members would be possible.

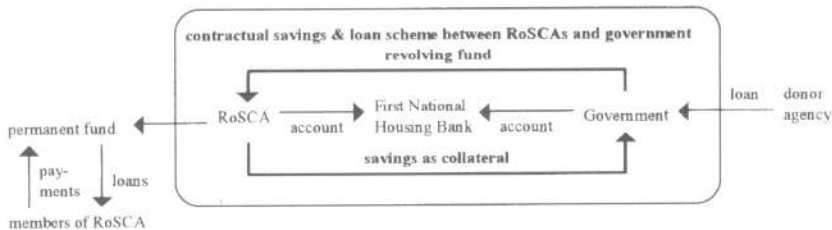
- Through a partial inflationary adjustment (e.g. only 50% of the inflation-induced higher housing costs could be charged) the revolving fund continues to function even if the inflation rate is higher than the 5% assumed here. Only inflation rates of 100% and more (threedigit rates) lead to a breakdown of the revolving fund. In these cases only indexing solutions, as discussed in Case Study III, are possible.

A problematic point of this proposition is, however, that the original, successful internal structure of Rotating Savings & Credit Associations has to be changed into a nonrotating system. The RoSCA members have to get used to this "informal system of contractual saving". The main risk of credit allocation lies in the selection of members and the corresponding repayment morale of those receiving a credit. However, the following countermeasures are possible:

- Basic prerequisite for the allocation of a credit is a previous savings deposit, i.e. individuals and groups can receive a credit only if they have made contributions over a certain period of time first.
 - The credit extent of members for every individual credit is limited to a multiplier (e.g. triple) of the amount of their deposit. However, it can be renewed after the credit has been repaid in full. The possibility of a follow-up credit would therefore be a further motivation for punctual credit repayment.
 - The follow-up credits for a *whole Savings & Credit Association* are subject to the punctual repayment of previous credits by all members. A well-organized group could from the beginning collectively guarantee repayment by their members (*group repayment guarantees*).
 - As further collateral the household equipment, tools or building material could be used.
-

- Lastly, the credit could not be provided to the members in the form of money, but in the form of the building material needed. This makes it impossible to use the credit for other purposes, and at the same time cheaper bulk purchases by the SCA are possible.

Both presented propositions therefore have advantages and disadvantages for the government, the Housing Bank or the self-help groups. With proposition A the system of RoSCAs remains completely intact, however, the Housing Bank has to bear the default risk (more or less) alone. With proposition B the government bears the default risk, but the successful system of the RoSCAs is changed. To combine the advantages of both propositions a contractual savings & loan scheme between the unchanged RoSCAs and the government could be worked out, in which the Housing Bank acts as financial intermediary. The RoSCAs pay their savings into an account with the Housing Bank, and in return receive (through the Housing Bank) *credits from the government*. After a successful cycle the groups constitute themselves as RoSCA with a nonrotating, permanent fund from which only housing credits to members with higher incomes are provided. The credit repayments flow bank into this fund and are continuously and immediately used for further credits:



picture 5: Possible Combination of Proposition A and B

Abstract

In developing countries formal housing finance institutions are often not willing to grant a housing credit to low-income families. For this reason informal (financial) self-help-groups, quite similar to the predecessor of Building Societies and german "Bausparkassen" are for these families often the only way to build or buy their own house. The necessity and the possibility to link formal and informal "financial institutions" to create a stable housing finance system were discussed in a case study at the 11th International School of the International Union of Housing Finance Institutions (IUHFI), which was arranged by the LBS North Rhine-Westphalia in July 1994 in Münster, Germany.

ENCOURAGER LES RAPPROCHEMENTS ENTRE SOURCES FORMELLES ET INFORMELLES DE FINANCEMENT DANS LES PAYS EN VOIE DE DÉVELOPPEMENT - UNE ÉTUDE DE CAS.

Résumé

Dans les pays en voie de développement, il arrive fréquemment que les établissements de crédit à la construction refusent d'octroyer de prêts aux familles à faible revenu. Ainsi, lorsque celles-ci envisagent de faire construire ou d'acheter un logement, elles sont souvent obligées de recourir à des sociétés de financement informelles.

Ces structures informelles émanent d'initiatives privées et sont comparables aux prédécesseurs des sociétés immobilières et sociétés d'épargne pour les prêts immobiliers allemandes. La question de la nécessité et de la possibilité de rapprochements entre structures formelles et informelles, indispensable à la mise en place d'un système durable de financement de la construction de logements a été l'objet d'une étude de cas lors de la 11ème rencontre internationale de l'IUHFI (International Union of Housing Finance Institutions), organisée par la Caisse d'Épargne pour les prêts immobiliers de Rhénanie du Nord-Westphalie, en juillet 1994, à Münster en Allemagne.

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