

# **Microfinance in marginal dry areas: Impact of village credits and savings associations on poverty in the Jabal al Hoss region in Syria**

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## **Abstract**

Worldwide, microfinance has been recognized as a powerful tool for alleviating poverty and raising living standards (Brandsma and Chaouali, 1998). In Syria microfinance is a new industry and started in 1997. The Rural Community Development Project (RCDP), of the UNDP and the Syrian Ministry of Agriculture and Agrarian Reform establishes Village Credit and Savings Associations (sanadiq, plural of sanduq) in the dry marginal region Jabal al Hoss southeast of the city of Aleppo. The sanadiq are considered promising institutions in providing microcredits to poor farmers, small holders and landless workers. The institutional framework enables the sanadiq to operate where other formal lending institutions do not lend. Formal lending institutions have limited activity in poor rural areas due to time consuming procedures, inappropriate land tenure systems, and due to the inherent risk from irregular land productivity resulting from low and variable rainfall.

This study is based on a formal survey conducted in the area of the RCDP. The area includes 156 villages and about 27,000 households. Households that participate in a sanduq for at least 24 months are compared to: households from the same villages that were not members of the sanduq until January 2004 and to; randomly chosen households from the project area.

Beside the demographic data collected, the formal survey was used to gather data on income, income generating activities, assets, education, food security, and livelihood strategies. The household characteristics were used to calculate composite poverty-indices. These poverty-indices are used to determine the poverty outreach of the project. The impact of the project in terms of income, assets and other household characteristics such as education and food security on the different poverty categories of households are also analyzed. With this information the study investigates the conditions where and with which type of farmers the sanadiq operate most successfully and whether the sanduq system maybe be an option for further dissemination in Syria and probably other dry areas.

## **1 Background and Objectives**

The Jabal al Hoss (Hoss Mountain) is a hilly region that starts approximately 15km Southeast of Aleppo. It covers an area of about 157,000 hectares of which about 85% of the land is cultivable. Yearly precipitation ranges between 200 and 350 millimeters and falls mainly between the months of November and April. The principle economic activity of the inhabitants of the area is animal husbandry with a focus on sheep rearing. Most residents are forced to work as wage laborers, either in Syria where they pick cotton and olives depending on the season or in Lebanon and Jordan where they work manly on construction sites or undertake other menial work. Those who work in Syria only find employment during specific periods of the year, and remain without employment for a large part of the year and live off the money accumulated during the cotton or olive seasons.

The RCDP started its activities in the year 2000 and its major activities are two fold: establishing sanadiq as a means of providing microfinance services to the rural poor and; organizing different various courses.

To establish a sanduq in a village, the following are the steps taken:

1. A minimum of 50 people from a village collect together at least 1,000 SP per person.
2. A village sanduq committee consisting of 3 people from the village with at least 1 woman is elected.
3. The sanduq starts with an experimental stage of three months without any external financial support.
4. If the experimental stage is successful, the RCDP will put additional money in the sanduq to allow them to give loans to more members.
5. The sanduq committee under supervision of the RCDP agrees on loans at either 1% (monthly payback) or 1.5% per month (payback at the end of the loan period) using Islamic principles (Murabaha<sup>1</sup>).

The main focus of the research is a study on the impact of this kind of microfinance programs on poverty, i.e. on the poorest and – if not already the case - to make some suggestions to reach the poorest. In addition the following was analyzed: what kind of households profited most from the offered microcredits and; what kind of household still does not get access to formal credit even if a sanduq has been established in the resident village.

## 2 Methodology

The data presented in this paper has been collected mainly by a formal survey with some additional information attained through informal discussions. The overall sampling frame of the study contains all the households in the region of Jabal al-Hoss. From the following three groups of households, 60 from each group are selected randomly:

Members	Households from the 9 villages with a sanduq established in September 2000 that borrowed money from a sanduq in the year 2000 or 2001.
Non-members	Households from the 9 villages with a sanduq established in September 2000 that were not members of the sanduq until January 2004.
Random households	Households from 7 randomly selected villages of the project region.

## 3 Poverty Index for the Jabal al-Hoss region

In order to be able to estimate the poverty outreach of a project, firstly the poor have to be identified. Henry et al. (2000) present an operational method using principle component analysis, based on a range of indicators that describe different dimensions of poverty and for which, credible information can be quickly and inexpensively obtained. Per capita clothing expenditure used by Henry et al. (2000) as the benchmark poverty indicator<sup>2</sup> did not show a close relation with poverty. In the region of Jabal al Hoss per capita income was used as the benchmark indicator –. Glewwe and van der Gaag (1990) showed that this is the indicator closely related to the consumption indicators that could not be measured reliably for this study.

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<sup>1</sup> Murabaha: (Profit sharing) The borrower receives the goods or animals purchased with the loan instead of money. He has to repay the purchase price of the goods plus a service charge equal to a certain percentage of that price instead of interest.

<sup>2</sup> The benchmark indicator is the indicator all the other indicators are related to in the Principle Component Analysis (PCA) in order to calculate a household specific poverty index.

Principal Component Analysis – a statistical tool – slices information contained in the set of indicators into several components. Each component is constructed as a unique index based on the values of all the indicators. The main idea is to formulate a new variable –  $X^*$  – which is the linear combination of the original indicators such that it accounts for the maximum of the total variance in the original indicators. That is,  $X^*$  is computed as

$$X^* = w_1X_1 + w_2X_2 + w_3X_3 \dots$$

where the weights (the  $w$ s) are specified such that  $X^*$  accounts for the maximum variances in  $X_1$ ,  $X_2$ , and  $X_3$ . This index has a zero mean and a standard deviation equal to one (Norusis, 1994).

### 3.1 Results

The application of PCA in this case led to the selection of 12 indicators. The indicators reflect on different dimensions of poverty concerning human resources, dwelling, assets, and food security and vulnerability. To select these 12 indicators, only the 60 completely randomly selected households were used since only these households represent the general population and are therefore appropriate to be used for the initial model. After running several PCAs, each with a slightly different composition of the indicators the final composition presented in Table 1 was arrived at.

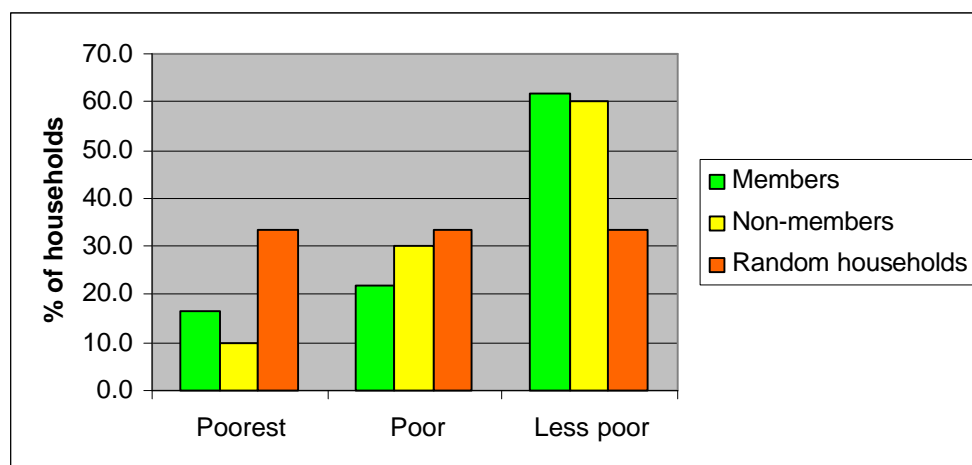
**Table 1: Community coefficients for the selected indicators to per capita income**

<b>Indicator</b>	<b>Correlation to component</b>
Total value of assets per person living in the household	0.764
% food expenditures from the total income	-0.649
Number of persons per room	-0.629
Meals with chicken per month in the last year	0.617
Number of wage laborers in the household	-0.570
Value of the house	0.515
Meals with eggs per month in the last year	0.506
Total value of equipment	0.496
Total irrigated land owned	0.452
Total land owned (ha)	0.420
Number of children <16y	-0.383
Total value of livestock	0.341

The number in the column ‘Correlation to component’ indicates the degree of correlation between the component and the indicator. Large absolute values indicate a high level of correlation, while low numbers indicate a lower level of correlation.

In order to use the poverty indices for assessing the poverty outreach of the sanadiq, the indices from the randomly selected households for the year 2000 which are not affected by the sanadiq were used as reference. First, the randomly selected households were sorted in an ascending order according to its index score. Once sorted, these households were grouped in the “higher” group, the middle third in the “middle” group, and the bottom third in the “lowest” group.

From Figure 1 it is evident that the largest part of the Members-group (61.7%) belong to the group of the Less poor. While only 16.7% belong to the group of the Poorest, the rest, 21.7% belonging to the middle group of the Poor.



**Figure 1: Poverty groups 2000: Members – Non-members - Random households**

There is no difference in the distribution of households in the three poverty groups between members of a sanduq and non-members. This means on one hand that the sanadiq reach the poorest within the villages that have a sanduq. On the other hand, it also means that the first 9 sanadiq were established in less poor villages. This can be confirmed if we consider public services such as schools, paved roads, electricity or telecommunication facilities that are available in the different villages. The whole issue is caused by RCDP's regulation that only villages with at least 300 inhabitants and a all year round accessible road are supported to establish a sanduq.

In this context, it is however worth mentioning that the project region of Jabal al Hoss is considered to be one of the poorest in Syria (Omran and Breek (2000) and Seibel (2003)), so even the group of the Less poor will contain a considerable number of poor if compared to other regions in Syria.

#### 4 Impact of the Sanadiq

As mentioned above, the first nine sanadiq were established in September 2000. For this report the period from 2000 / 2001 until the end of the year 2003 is considered as the period of study. Thus, a period of at least 24 months to measure impact of sanduq membership is taken into account. Clearly this is not a sufficiently long period to show significant changes in income or assets. Nevertheless, some interesting results were found.

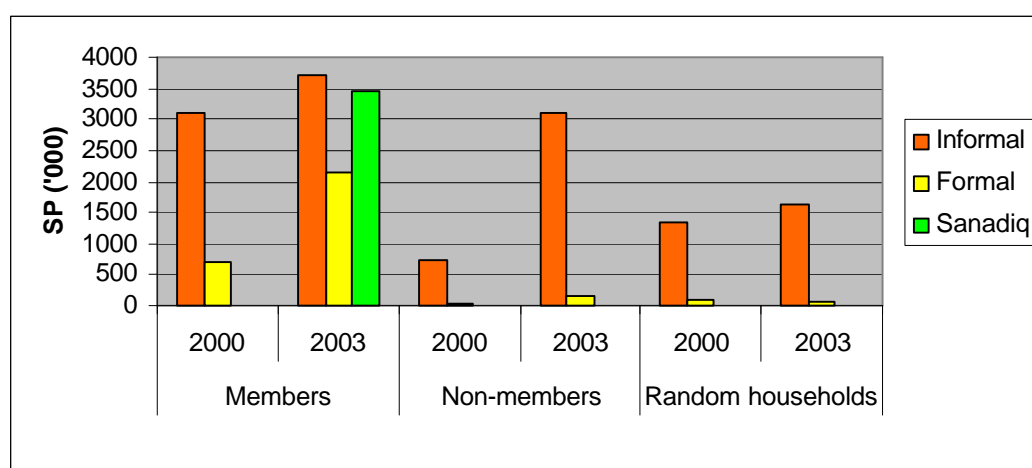
##### 4.1 Impact on assets

**Table 2: Net assets held by the different groups of households in the year 2000 and the change in assets from 2000 to 2003**

Characteristic	Members (A)	Mean of the sample		Significant difference (at 5%) between groups
		Non-members (B)	Random households (C)	
Value of net assets owned by the household (SP) in the year 2000	1,288,427	1,133,860	479,071	A & C B & C
Change in net assets per household from 2000 - 2003	41,331	43,585	8,301	None

As already indicated by the results from the poverty index, the criteria of net assets held by the households provide similar results. Those households from the villages with a sanduq are wealthier (Member and Non-members) than the randomly chosen households (**Error! Not a valid bookmark self-reference.**). At the same time these two household groups show a higher increase in net assets from the year 2000 to 2003 than the Random households, also the difference is not significant using an independent t-test at 95% confidence level.

If considering the households' average debts a significant difference can be found between the sanduq members and the two other groups of households (Figure 2). This provides evidence that the households borrowing money from a sanduq in 2000 or 2001 were the ones that were already most indebted at this time. It is thus possible that the households borrowing money from informal sources were less suspicious of these new microfinance institutes because they were already used dealing with informal debt or because they were under pressure to accept any source of money without asking too many questions.



**Figure 2: Outstanding debts per household and poverty group in the years 2000 and 2003 according to different sources**

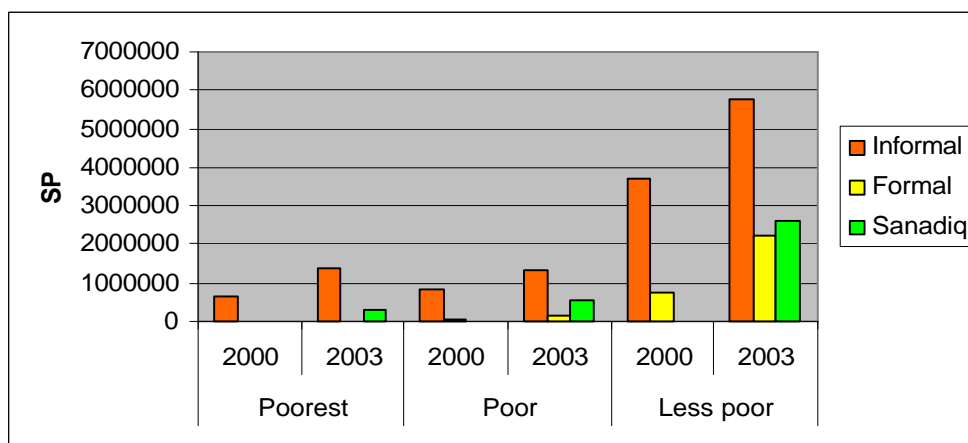
From Figure 2 it can be seen that informal lending still plays a very important role even if a sanduq has been established in a village. The interest rates charged from different sources of credit can be found in Table 3.

**Table 3: Interest rates for credits from different sources**

Source of credit	Mean	Minimum	Maximum	Std. Deviation	Number of credits
		In % per year			
Formal	5.3	2.5	12.5	2.4	30
Informal	50.3	0	504.2	63.5	506
Informal (without relatives)	76.6	0	504.2	64.6	330

An important amount of informal credit in the region is from relatives or friends with often zero interest rate. If these credits are excluded the average interest rate charged by shopkeepers, traders or moneylenders is calculated at 76.6% per year.

This is even more striking since formal credit sources in Jabal al Hoss do not reach the Poorest at all (Figure 3). They have to fully rely on these very expensive informal sources in the absence of a sanduq in their village.



**Figure 3: Amount of credit taken by the different poverty categories in the years 2000 and 2003**

## 4.2 Impact on Income

The impact of the sanadiq on income is very difficult to quantify. Recalling income data for a period of three years was not possible. What can be enquired for are the actual income and the perceived change of income since the year 2000. The numbers presented in Table 4 represent the income in the year 2003. As there is no data about income of these households in the year 2000 the interviewees were asked to classify the change of their income since the year 2000 into categories.

**Table 4: Changes of income from the year 2000 to 2003 for the different household groups according to their poverty group in the year 2003**

Poverty group in the year 2003	Members (A)	Mean of the sample		Significant difference (at 5%) between groups
		Non-members(B)	Random households (C)	
Poorest (1)	2.56	2.80	2.88	None
Poor (2)	3.00	3.16	3.13	None
Less poor (3)	3.63	3.43	3.00	A & C
Significant difference (at 5%) between groups	1 - 3	None	None	

1 Substantially less; 2 Less; 3 No change; 4 More; 5 Substantially more

As the score “3” would signify that there has been no change in income, the average change per household group is very low. In general, the Poorest perceived a drop in their income while the Less poor either perceived to have about the same or even a higher income than in the year 2000. In Table 4 it can be seen that the difference in perceived income change between the Poorest and the Less poor is highest for the Members-group, the change is even significant using an independent t-test at the level of 95% confidence. The other significant difference can be found in the group of the Less poor when comparing the perceived income change score between the Members and the Random households. The randomly selected households also report the lowest difference in income change between the Poorest and the Less Poor. Drawing conclusions from these findings, a sanduq is increasing inequality. However, households which are not members of a sanduq even though there is a sanduq in the village, also report a significant difference in income change between the Poorest and the Less Poor. Thus there are also other possible factors

influencing this increase in inequality like, the training courses provided by the RCDP in the villages with a sanduq, the village size, and the public services available in these villages.

## 5 Conclusions and Recommendations

As a precursor to the conclusion it has to be qualified that an operational period of three years is a very limited time to show impact of a microfinance program. Especially when considering empowerment or other non financial measurements such as education or migration, more time is required to find an impact that can be measured. Nevertheless some interesting points can be made from the data collected.

The criteria<sup>3</sup> with which the RCDP selected the first nine villages where a sanduq was established, smaller villages with lesser public services were excluded. This is the main reason why households being members of one of these first sanadiq are represented less in the Poorest and the Poor if compared to the randomly selected households. Within the chosen villages there is no big difference in poverty group categorization and average income or assets of the households. Within a chosen village however the Poorest can be reached by the sanduq system. It is arguable that even if a considerable share of the poorest of the region do not get reached by the sanduq system, most of them belong to the poorest in the country as the Jabal al Hoss region is considered as one of the poorest regions in Syria. But in order to increase poverty outreach the RCDP will have to start working in smaller villages with less infrastructure.

Considering income, it is recognized that in general the poorer households perceived a decline of their income while the less poor households more often perceived an increase of their income over the past three years. In the villages with a sanduq this increased inequality was more marked than in the villages that have been chosen at random. Between the Members and the Non-members of a sanduq from the same villages again no difference can be found. However, it cannot be concluded that the presence of a sanduq in a village leads to increased inequality as, the reason for the increased income difference between Poorest and Less poor could also be caused by the better infrastructure that is available in these villages.

Households from the sanduq villages have a higher amount of physical and financial assets than the ones from the randomly chosen households. Considering the difference in assets held by the households in the year 2000 and 2003 (only in the value of the livestock owned by the household the Member-households) had a significantly higher increase than the Non-members from the same villages – these households like the randomly chosen households even had a decrease in the value of livestock owned. Over all the gross assets for both household groups from a village with sanduq increased considerably from 2000 to 2003 while the gross assets of the Random households stayed more or less the same. Looking at the monies the different households borrowed, both household groups living in a village with sanduq had a considerable increase in debts over the past three years, while the debts of the randomly chosen households remained stable at a quite low level. The members of a sanduq mainly borrow from the sanadiq, but they also borrow from other formal sources. The households from the villages with a sanduq not being member of the sanduq mainly increased the amount of money borrowed from informal money lenders. One goal of the sanadiq was to reduce the amount of money borrowed from these informal sources as they charge very high interest rates. This could clearly not be achieved as the non-members increased their informal debts considerably and the members are still borrowing about the same amount of money from these sources.

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<sup>3</sup> Villages have to have at least 300 inhabitants and a all year round accessible road as to lead to the village.

Considering the findings overall, the sanduq system shows a promising possibility to provide financial services to the rural poor. Formal institutions have low, subsidized interest rates but do not reach the poorest in the region. Informal credit providers do lend money to the poorest but charge very high interest rates. Thus, there is clearly a potential to spread the sanduq system to other regions in Syria and probably even to other dry marginal areas as a means of reaching the poorest with financial services.

One limiting factor is the absence of a nation wide law for microfinance in Syria. Although Burjorjee and Brandsma (2004) argue that there is no immediate urgent legal bottleneck to the development of the microfinance industry (MFI). On the other hand they also write that one of the three conditions that have to be met before a microfinance institution should start mobilizing savings is an appropriate legal and regulatory environment. They also recognize and more or less points in the same direction is that all the attempts of different microfinance projects in Syria to define a regulatory framework with the Syrian government on a bilateral basis should be better coordinated.

Beside the external regulatory framework, clear sanduq internal rules are also needed. In several informal interviews, sanduq members expressed their insecurity about for e.g. how the profit of the shares of the sanduq they own will be distributed. During the past three years distribution calculations have always changed slightly so people are getting insecure about the sanduq internal regulations. With the three years of experience the RCDP now has established and are still working on bylaws that are regulating all internal processes of a sanduq and its relation to the project.

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