

# Savings and Development



"GIORDANO DELL'AMORE" FOUNDATION

A Centre for Financial Growth and Development Assistance

established by

*Fondazione Cassa di Risparmio delle Province Lombarde*



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# Savings and Development

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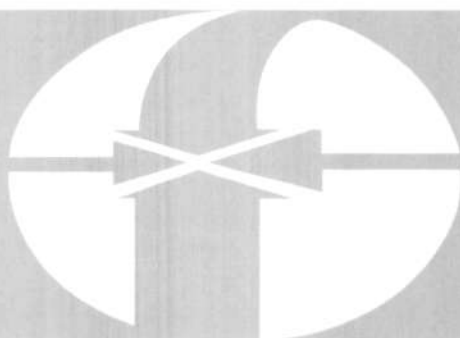
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# FINANCING RURAL ENTERPRISE: THE USE OF ROTATING CREDIT BY A VILLAGE COMMUNITY IN NEPAL\*

Clint Rogers

University of California at Berkeley

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## 1. Introduction

The inability to obtain sufficient capital to finance the start up or operation of a small enterprise is often a constraining factor limiting engagement in income generating activities by residents of less developed countries where formal sources of credit are unavailable, inadequate, or unpopular due to rigid collateral requirements. One means by which some communities have adapted to this situation has been to form group associations that periodically pool capital among the members, allowing each individual member of the group to receive the pooled capital on a rotating basis. By pooling the financial resources of a group and making those resources available to individual members of the group turn-by-turn, each member is able to access at one time much greater financial resources than would be possible individually, thereby enabling each member to make an investment in a business venture, meet a pressing monetary need, or perhaps earn a financial return on the capital invested in the rotating fund.

Various forms of such rotating savings and credit associations (RoSCAs) have been described in numerous countries on several continents (e.g., see Geertz 1962; Ardener 1964; Bouman 1977; Adams and Fitchett 1992; Ardener and Burman 1995; Aredo, 2004). This article describes the recent adoption of a bidding form of RoSCA by the residents of Manang village in the Himalayan highlands of north-central Nepal and analyzes the community's remarkably successful use of bidding RoSCAs to finance local business ventures. The following short backgrounds on the Manang community and on the use of RoSCAs in Nepal provide the necessary context for the subsequent examination of the community's recent adoption and use of RoSCAs for commercial purposes. For more information about Manang's history, economy, and other forms of financing used by the community, see Rogers (2004).

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Author's Biographical Information: The author holds a PhD and an MA in Cultural Geography and an MBA in Business from the University of California at Berkeley. Having conducted field research on small enterprise in the Himalaya each year since 1999, he is currently studying the persistence of subsistence oriented caravan trade in the Nepal-Tibet border region.

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## 2. The Entrepreneurial Community of Manang

The Manang community<sup>1</sup> consists of roughly nine hundred people comprising approximately two hundred households. Although there are some recent immigrants working in Manang as wage laborers or civil servants (e.g. seasonal farm hands, teachers, police), the overwhelming majority of local residents are members of the indigenous Nyishangte ethnic group. The Nyishangte trace their ethnic origins to Tibet, from where their founding clans migrated approximately a thousand years ago. The Nyishangte practice Tibetan Lamaist Buddhism, and their native tongue belongs to the Tibeto-Burman language family. Among the Nyishangte, each nuclear household operates as an independent economic unit, with a separate household being formed at the time of marriage. Despite this autonomy, it is not uncommon for households related by kinship or marriage ties to cooperate to some extent in economic activities, perhaps sharing some agricultural and pastoral duties or joining together in a business partnership.

Manang village is situated at an altitude of over 3,500 meters (about 12,000 feet) in a glacially carved valley lying immediately north of the main crest of the Great Himalaya mountain range. Due to its location in the rain shadow of the Himalaya, Manang's climate is quite dry. Because of its large expanses of uninhabitable mountain terrain and the low agricultural potential inherent in such an arid, high altitude environment, Manang has the smallest percentage of area under cultivation of any district in Nepal (NRA 1999, p. 34). In fact, the cultivated area is so limited that, despite being the least populated district in the country, Manang has the lowest ratio of cultivated area per person of any rural district in Nepal (Zurick and Karan 1999, pp. 175, 322). Due to Manang's dry climate, however, it is the availability of adequate irrigation water rather than labor or suitable land that primarily limits the extent of cultivation possible. Along with the rugged terrain and arid climate, Manang's altitude is a major constraining factor on agriculture. At such a high elevation, winters are cold and long and only one crop per year is feasible, in contrast to lower lying areas of Nepal where two or three crops per year are the norm. And although yak, goats, and sheep are kept as livestock, herd sizes are restricted by the amount of hay available to feed animals during the winter when pastures are covered with snow. As a result, local agricultural and pastoral production is limited to less than subsistence levels, and Manang residents have, probably from the time of their set-

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<sup>1</sup> In this article, the term 'Manang community' refers to the members of the indigenous Nyishangte ethnic group who reside in Manang village and its subsidiary settlements of Tenki and Humde.

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tlement in the valley, had to rely on grains grown in lower lying regions of Nepal to supplement their local food production.

To pay for food imports, the Nyishangte have a long history of involvement in commercial enterprise, traditionally in itinerant trade ventures outside of their home region and more recently in catering to foreign trekking tourists who visit Manang. Until the latter part of the 19th century, their trade ventures were confined primarily to the winter bartering of herbs and animal products from Manang for grains grown in the lower hills of Nepal. But as British colonial development of the Indian subcontinent progressed, Nyishangte traders expanded their trade ventures abroad, following a network of Nepali laborers working on tea plantations and building railroads in northeast India and Burma. By the middle of the 20th century, Nyishangte itinerant trade ventures, sometimes lasting several years, had stretched to Thailand and the Malay peninsula. With the group's receipt of passports from the Nepal government in the 1960s, as well as a special exemption from paying customs duties, the Nyishangte were well situated to benefit from the commencement of airline service connecting Nepal's capital of Kathmandu with the rapidly growing commercial centers of Bangkok, Singapore, and Hong Kong and the subsequent rise of Kathmandu as a major entrepot for the trade of goods from Southeast Asia to the restricted Indian market. By aggressively exploiting these developments, the Nyishangte emerged as Nepal's preeminent international trading group in the latter 1960s and 1970s (Cooke 1985; van Spengen 1987).

In order to focus full time on their trade businesses, many Nyishangte entrepreneurs migrated with their families to Kathmandu during the 1970s and 1980s, reducing the resident population of Manang by over sixty percent and leaving the village an economic backwater. During the 1990s, however, the international trade prospects of some Nyishangte business people, particularly the less highly capitalized ones who had not diversified their trade activities beyond low-overhead street peddling, declined dramatically due to police crackdowns on unauthorized street vendors and more stringent visa requirements in Southeast Asia. Fortunately for disheartened Nyishangte traders, the number of foreign trekking tourists visiting Manang grew rapidly during the 1990s, and many local residents, including dozens of families who had recently returned from Kathmandu, opportunistically turned their attention toward building hotels and other tourism businesses in Manang.

To finance trade ventures, the Nyishangte had traditionally relied upon a combination of personal savings, group business partnerships formed among relatives and friends, and direct personal lending between community members. Although Nyishangte entrepreneurs living in Kathmandu had participated in urban-based RoSCAs

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demand for credit since high bidding among the other members reduces the size of the installments that must be paid into the fund. The early takers of the fund are essentially borrowers who, except for the organizer, pay a premium for accessing the fund early, and the later takers are essentially lenders receiving compensation for keeping their capital tied up in the *dhukuti*.

#### 4. Use of RoSCAs in Manang

It is possible that the concept of rotating credit originally came to Manang from the neighboring Mustang region, where the Thakali and Baaragaonle ethnic groups have a long history of using RoSCAs. In the course of writing about the Thakali, a group well-known in Nepal for its involvement in commerce, a number of scholars have mentioned the group's historical use of *dhukuti* for financing business ventures (e.g. Manzardo & Sharma 1975, p. 36; von Furer-Haimendorf 1975, pp. 197-200; Manzardo 1978, p. 99; Messerschmidt 1978, p. 154; Vinding 1984, pp. 89-91; Chhetri 1986, pp. 249-250; von der Heide 1988, p. 42; Zivetz 1992, p. 102; Vinding 1998, p. 131; Fisher 2001, pp. 90-104). In Manang, *dhukuti* seem to have been used only sparingly prior to the late 1990s and more often for the purpose of helping a fellow villager in personal financial crisis than for financing business ventures or earning a financial return on an investment. Traditionally in Manang, after the organizer took the fund in the initial round, the subsequent order of taking the fund by other members was determined by chance, usually in the form of a lottery. In cases where the *dhukuti* was formed purely for altruistic purposes, no interest accrued and the amount of the fund remained the same in each round. In cases where it was formed for business purposes, interest accrued and the amount of the fund increased over time to reflect the time value of money.

Among Nyishangte entrepreneurs who migrated to Kathmandu, *dhukuti* came to be used almost exclusively for financing commercial activities. As their economic pursuits expanded and their demand for credit increased, Kathmandu-resident Nyishangte entered into large *dhukuti* with members of other ethnic groups residing and doing business in Kathmandu. In this manner, it is possible that Nyishangte living in Kathmandu adopted the "tender" or bidding form of *dhukuti* from Thakali business people who, similar to the Nyishangte, had moved to Kathmandu in pursuit of better economic opportunities.

Following the out-migration to Kathmandu of the wealthier and more entrepreneurial members of the Manang community in the 1970s and 1980s, *dhukuti* fell

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completely out of use in Manang. Few of the people who remained in the village during this period had the financial wherewithal to participate in *dhukuti*. However, the involvement of a growing number of village residents in increasingly profitable tourism businesses during the 1990s boosted local financial resources and enabled local residents to revive the use of *dhukuti* when a situation calling for it arose.

In 1998, a dire personal financial crisis emerged for a member of the Manang community. Unable to pay the rent that was due for the property on which he had built his house and modest hotel, the villager was faced with the devastating prospect of losing both his home and business. Although a *dhukuti* had not been organized in Manang for many years, the concept was not new to the local population, and the needy villager was able to organize a group of thirty people with sufficient financial resources to participate in a traditional, non-interest bearing, lottery style *dhukuti*. Based upon the amount needed by the organizer, the members agreed to pay installments in every round of 5,000 rupees (about 64 U.S. dollars<sup>3</sup>) each, to comprise a gross fund in every round of 150,000 rupees (\$1,900). The needy organizer took the first turn at receiving the fund. Another villager in personal financial need asked and was permitted by the other members to take the second turn at receiving the fund. The order of subsequent turns was determined by lottery. The location of the meeting rotated among the houses of the various members, with the designated taker of the fund in each round hosting the meeting at his or her expense. With thirty members meeting three times per year, the *dhukuti* was set to last for ten years. But because the *dhukuti* paid no interest, the members expecting to receive the fund near the end wished to speed up the *dhukuti* in order to get earlier access to the capital they were tying up for no financial return. To accomplish that, the members collectively agreed to pay double installments and dispense two funds at each meeting, effectively halving the time required for completing the *dhukuti*. As a result, the *dhukuti* was concluded in 2004.

By the end of the 1990s, the annual number of tourists visiting Manang had more than doubled from what it had been at the start of the decade<sup>4</sup>, and Manang entre-

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<sup>3</sup> At the time of my primary research in Manang in 2002, one U.S. dollar was equivalent to about 78 Nepali rupees, and this is the exchange rate used throughout this article. At the end of 2004, one U.S. dollar was equivalent to about 74 Nepali rupees.

<sup>4</sup> According to records of the Annapurna Conservation Area Project, approximately 13,000 foreign tourists visited Manang in 2000.

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preneurs responded by aggressively investing in businesses catering to visitors. The rapid pace of tourism business development in Manang during the late 1990s greatly increased the local demand for both investment and working capital and outstripped the funds available for direct personal lending between community members. Although formal credit is theoretically available from a government bank at the district headquarters about an eight-hour walk from Manang, the perceived risk of defaulting on the bank's rigid repayment schedule, and thereby losing the physical assets required by the bank as loan collateral, has discouraged nearly all village residents from taking such loans<sup>5</sup>. And since tourism business development in Manang typically involved substantial local fixed property (e.g. building a hotel on the owner's personal land), investing in such enterprises was not well suited to the type of group partnerships that had traditionally been used to finance trade ventures.

Thus, with formal lending sources considered too risky, business partnering too unwieldy, and informal lending sources fully tapped, an alternative means of credit financing was needed. In response to this need, the Manang community took an old social system of communal cooperation, the rotating savings and credit association, and adopted a modified version of it to fit their changing business needs. The revival in 1998 of the old lottery style *dhukuti* inspired local entrepreneurs to consider using rotating credit to finance business ventures, but the lottery style *dhukuti* was not dynamic enough to meet the rapidly growing local demand for credit or to attract investment funds. But entrepreneurs who had returned to Manang from Kathmandu during the 1990s were familiar with another kind of *dhukuti*, the "tender" or bidding style, which they introduced to other Manang residents.

Manang's entrepreneurial community was quick to adopt the "tender" style *dhukuti* as a means of pooling and accessing finance capital. After the first *tender dhukuti* was started in 1999 with twenty-three members, two more were organized in 2000 with twenty-six and thirty members, followed by two more in 2001 with thirty and thirty-one members. Although Manang's first *tender dhukuti* was started by a Nyishangte man from the nearby settlement of Munji who had recently returned with his family from Kathmandu, the overwhelming majority of local *dhukuti* organizers and participants are from Manang village and its subsidiary settlements of Humde and Tenki. There are relatively few participants from other Nyishangte villages due to lower levels of entrepreneurial activity and wealth and,

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<sup>5</sup> Collateral requirements for bank loans normally include fixed assets such as one's land and house, which in Manang village society are absolutely critical to an individual's identity and which, according to local rules, cannot be sold or assigned to non-Nyishangte (or even to Nyishangte from another village). Interestingly, one of the RoSCAs currently operating in Manang was formed to enable the organizer to repay a bank loan on which he had defaulted.



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therefore, lower demand for venture financing and lower availability of investment capital. Compared to forty-three *dhukuti* participants from Manang village and its subsidiary settlements, there are only three from the nearby village of Braga, two from Pisang, one each from Munji and Khangsar, and none from the remaining Nyishangte villages of Ngawal and Gyaru. Of these fifty participants, only five are women, but the strong male majority reflects the local domination of business by men rather than any proscriptions against women's participation in *dhukuti*.

In Manang, the *tender dhukuti* is preferred over the non-interest bearing lottery *dhukuti* and over direct personal loans because the *tender dhukuti* enables ready access to capital for immediate financing needs or a high return for investment purposes, with lower risk and less hassle than direct personal lending. In a non-interest bearing lottery *dhukuti*, the timing for receiving the fund is determined by chance, and the time-value returns for everyone except the organizer are negative. In a *tender dhukuti*, however, an entrepreneur in need of capital can access the fund quickly by bidding aggressively, and an investor can earn an attractive financial return by waiting until the end to take the fund.

Investing in a *dhukuti* is considered less risky and less trouble than making direct personal loans due to the group dynamic of *dhukuti* participation. With a group of some thirty people to potentially apply pressure against or pursue a defaulter, default in a *dhukuti* is considered less likely than in the case of a personal loan where applying pressure against or pursuing a defaulter would be up to the lender alone. Whether lending or borrowing, it is far less trouble to participate in a *dhukuti* than to directly lend or borrow the equivalent amount of money to or from numerous individuals. In status-conscious Manang village society, asking for a personal loan is akin to begging for help, while seeking credit by joining a *dhukuti* is considered an admirable thing to do since it involves helping a fellow community member in need. And, unlike lenders and borrowers in the case of a direct personal loan, *dhukuti* members do not have to face the awkward situation of requesting or being requested by a fellow community member to pay back borrowed funds.

Although difficult to quantify financially, the social aspects of *dhukuti* participation are quite significant to members of the Manang community. Attending a *dhukuti* meeting allows participants the pleasure of gathering for an entire afternoon with friends and relatives to eat and drink well, talk and joke, and play card or dice games. The penchant of most Nyishangte men for competing and gambling has also contributed to the local popularity of *dhukuti*. In Manang, participating in a rotating savings and credit association is referred to as *dhukuti khelne*, which in Nepali

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means "playing" *dhukuti*, and indeed it is perceived, approached, and participated in as a game to be played and enjoyed, a form of friendly competition among one's peers that also serves as one of the limited occasions on which gambling is allowed by the village government. And there is another, much more important, social aspect as well. Along with membership in a local *dhukuti* comes an associated social status in the community as a successful businessperson considered responsible, trustworthy, and financially secure enough to be invited to participate. In fact, *dhukuti* have become so popular in Manang that many local business people have chosen to participate in several *dhukuti* at once.

Among the six *dhukuti* operating simultaneously in Manang from 2001 to 2004, the nominal value of the collective funds to be invested in and paid out by RoSCAs over their full terms exceeds 30 million rupees (\$400,000), which equates to about 6 million rupees (\$80,000) changing hands within the community each year. In a country with an annual per capita income of only 20,000 rupees (\$250), this represents an enormous amount of money for a completely self-contained system of rotating savings and credit utilized by a village community of roughly 1,000 people.

The adoption and proliferation of the *tender dhukuti* in Manang since 1999 has effectively created a local market for capital where credit can be accessed at a price directly reflecting the local demand. By reducing the risk and raising the returns associated with investing capital and by lowering the trouble of accessing credit, the use of bidding RoSCAs has greatly facilitated the pooling of capital in Manang and made credit available to a large portion of the community, enabling many local residents to finance the start-up, operation, and expansion of private business ventures.

## 5. Analysis of RoSCA Use in Manang

Generally, RoSCAs in Manang consist of about thirty members who meet six times per year for an overall term length of five years, a time structure that is considered optimal by most local *dhukuti* participants. Meeting six times per year (roughly every two months<sup>9</sup>) is preferred because less frequent meetings

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<sup>9</sup> *Dhukuti* meetings are not held in Manang from December to March because many village residents spend the winter staying with relatives in Kathmandu or visiting Buddhist pilgrimage sites in Nepal and India. To make up for the skipped winter meeting, an extra meeting is held in the spring.

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would not be sufficient to accommodate the steady demand for funds needed throughout the year to finance local business activities and because monthly meetings are considered too much of a burden on the organizer at whose house each meeting is held and the participants lavishly hosted. An overall term length of five years guarantees that all participants will receive the fund within a five-year period, a savings time frame that matches the local norm of re-investing in a tourism business (e.g. expanding or remodeling a hotel) roughly every five years.

In a typical Manang *dhukuti*, each member pays an installment of 10,000 rupees (\$130) at every meeting. Thus, in a thirty-member *dhukuti*, the gross fund at each meeting would amount to 300,000 rupees (\$3,800). A set amount of 4,000 rupees is subtracted from the gross fund in each round to pay for the food and drinks consumed at the meeting. But this amount is not sufficient to cover the actual expense for each meeting, which for a *dhukuti* with thirty members normally amounts to about 8,000 rupees. The extra 4,000 rupees expense for each meeting must be paid by the *dhukuti* organizer. To help offset the organizer's expense, a portion, typically ten percent, of the winnings from the gambling that takes place among the members during each *dhukuti* meeting is given to the organizer. This gambling commission normally amounts to between 1,000 and 2,000 rupees, depending on how many members gamble, how long they gamble, and what types of games and stakes are involved.

To demonstrate how a typical *tender dhukuti* might progress from start to finish in Manang, I created a computer model to simulate the round-by-round operation of such a *dhukuti*. Table 1 shows the results of the computer simulation, including for each round of the *dhukuti* the highest tender bid amount, the net installment paid by each of the members, the net fund taken by the highest bidder, and the cash flows of various members. The computer model rationally, albeit simplistically, assumes that the highest tender bid over the course of the *dhukuti* occurs in the second round and that the highest bid amount in each subsequent round declines linearly down to the amount of the minimum bids required in the final four rounds (of course, real bidding results would not be so uniform). Based on the actual history of *tender dhukuti* bidding in Manang, the highest bid used in the computer simulation is fifty-five percent of the gross fund (e.g. 165,000 rupees for a *dhukuti* in which thirty members pay installments of 10,000 rupees each).

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**Table 1:** Computer Simulation of a Typical Tender Dhukuti (Bidding RoSCA) in Manang (in Nepali rupees)

Round	Winning Tender Bid	Each Member's Payment	Winner's Net Take	1st Taker's Cash Flow	2nd Taker's Cash Flow	10th Taker's Cash Flow	20th Taker's Cash Flow	Last Taker's Cash Flow
1	-	10,000	283,500	283,500	-10,000	-10,000	-10,000	-10,000
2	165,000	4,500	126,500	-7,000	126,500	-4,500	-4,500	-4,500
3	159,800	4,673	131,527	-7,173	-4,673	-4,673	-4,673	-4,673
4	154,600	4,847	136,553	-7,347	-4,847	-4,847	-4,847	-4,847
5	149,400	5,020	141,580	-7,520	-5,020	-5,020	-5,020	-5,020
6	144,200	5,193	146,607	-7,693	-5,193	-5,193	-5,193	-5,193
7	139,000	5,367	151,633	-7,867	-5,367	-5,367	-5,367	-5,367
8	133,800	5,540	156,660	-8,040	-5,540	-5,540	-5,540	-5,540
9	128,600	5,713	161,687	-8,213	-5,713	-5,713	-5,713	-5,713
10	123,400	5,887	166,713	-8,387	-5,887	166,713	-5,887	-5,887
11	118,200	6,060	171,740	-8,560	-6,060	-6,060	-6,060	-6,060
12	113,000	6,233	176,767	-8,733	-6,233	-6,233	-6,233	-6,233
13	107,800	6,407	181,793	-8,907	-6,407	-6,407	-6,407	-6,407
14	102,600	6,580	186,820	-9,080	-6,580	-6,580	-6,580	-6,580
15	97,400	6,753	191,847	-9,253	-6,753	-6,753	-6,753	-6,753
16	92,200	6,927	196,873	-9,427	-6,927	-6,927	-6,927	-6,927
17	87,000	7,100	201,900	-9,600	-7,100	-7,100	-7,100	-7,100
18	81,800	7,273	206,927	-9,773	-7,273	-7,273	-7,273	-7,273
19	76,600	7,447	211,953	-9,947	-7,447	-7,447	-7,447	-7,447
20	71,400	7,620	216,980	-10,120	-7,620	-7,620	216,980	-7,620
21	66,200	7,793	222,007	-10,293	-7,793	-7,793	-7,793	-7,793
22	61,000	7,967	227,033	-10,467	-7,967	-7,967	-7,967	-7,967
23	55,800	8,140	232,060	-10,640	-8,140	-8,140	-8,140	-8,140
24	50,600	8,313	237,087	-10,813	-8,313	-8,313	-8,313	-8,313
25	45,400	8,487	242,113	-10,987	-8,487	-8,487	-8,487	-8,487
26	40,200	8,660	247,140	-11,160	-8,660	-8,660	-8,660	-8,660
27	35,000	8,833	252,167	-11,333	-8,833	-8,833	-8,833	-8,833
28	30,000	9,000	257,000	-11,500	-9,000	-9,000	-9,000	-9,000
29	20,000	9,333	266,667	-11,833	-9,333	-9,333	-9,333	-9,333
30	10,000	9,667	276,333	-12,167	-9,667	-9,667	-9,667	276,333
NPV				94,055	-20,676	-11,955	-4,804	5,080



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In the first round of the computer simulation, the organizer takes a fund of 286,000 rupees (the 300,000 rupee gross fund, minus the organizer's own 10,000 rupee installment, minus the 4,000 rupee expense withholding), has a personal expense of 4,000 rupees, and receives 1,500 rupees as gambling commission for a net take of 283,500 rupees. In the second round, the highest tender bid is 165,000 rupees, and the highest bidder takes a net fund of 126,500 rupees (the 300,000 rupee gross fund, minus the highest bidder's own 10,000 rupee installment, minus the 4,000 rupee expense withholding, minus the 165,000 rupee bid, plus the 5,500 rupees that each of the thirty members gets back from the 165,000 rupee winning bid). In each round, a minimum bid of 35,000 rupees is required, although during the last three rounds the minimum bid amount decreases to 30,000 rupees, 20,000 rupees, and 10,000 rupees, respectively. If, for example, there are only two members remaining who have not yet taken the fund and they both bid the minimum 20,000 rupees, then the taker of the fund in that round is determined by a lottery between the two. In the last round, since only one member remains to take the fund and there is no one to bid against, the minimum bid of 10,000 must be paid and the net fund taken is 276,333 rupees (the 300,000 rupee gross fund, minus the fund taker's own 10,000 rupee installment, minus the 4,000 rupee expense withholding, minus the 10,000 rupee minimum bid, plus 333 rupees that each of the thirty members get back from the 10,000 rupee minimum bid).

In order to analyze the economics of participating in a typical *tender dhukuti* in Manang, the computer model includes a net-present-value (NPV) calculation in which each member's cash flows are financially discounted to reflect the time value of money using a discount rate obtained from the most common alternative to *dhukuti* financing or investing, that of taking or making direct personal loans at the local going rate of interest for such loans. Since the local going rate of interest on personal loans in Manang during my primary field research in 2002 was a simple rate of 1.5 percent per month, a monthly discount rate of 1.015 is used in the NPV calculation. The mathematical formula employed in the NPV calculation is:

$$NPV_A = CFA_1 + CFA_2 / (1 + (INT \times T_2)) + \dots + CFA_N / (1 + (INT \times T_N))$$

where:

NPV<sub>A</sub> = net-present-value of cash flows for member A (at the start of the *dhukuti*)

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$CFa_N$  = cash flow for member A in round N of the *dhukuti*

INT = going rate of simple monthly interest for a personal loan in Manang

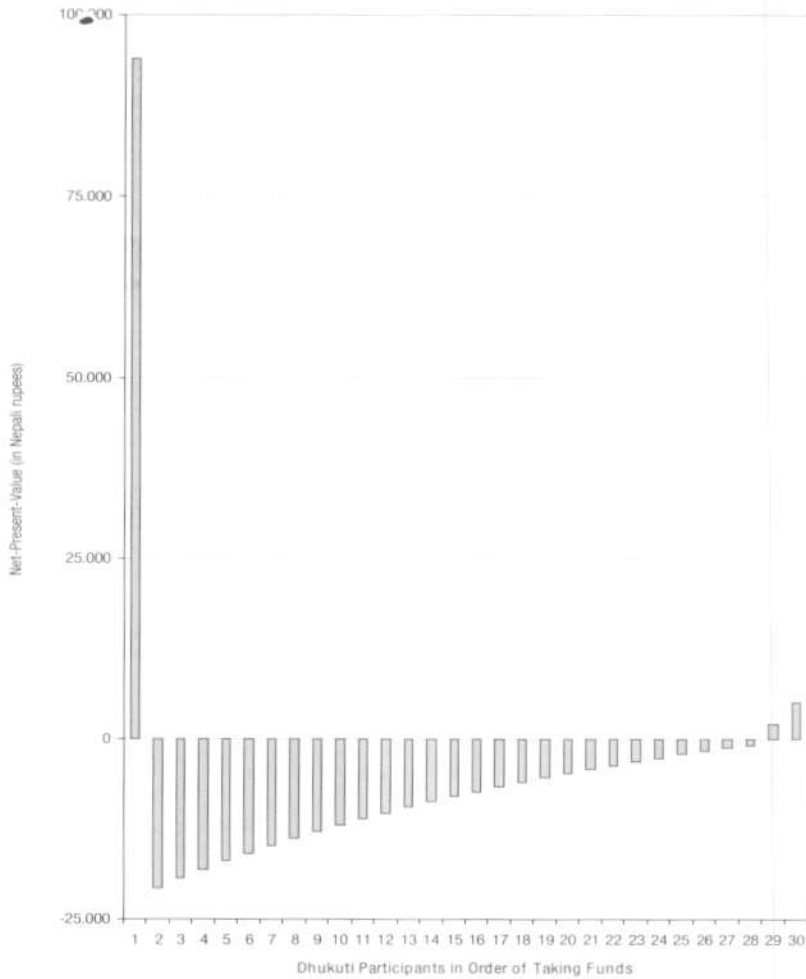
$T_N$  = number of months between the start of the *dhukuti* and round N

The concept of net-present-value (NPV) is simply a way of representing at a single point in time the equivalent value of a series of cash flows occurring over a period of time. In this case, the single point in time is the start of the *dhukuti*, and the cash flows occurring over time are the net amounts each member pays into or receives from the *dhukuti* in each round. The use of NPV is useful here for two purposes. It allows us to compare the economics of participating in a bidding RoSCA with that of taking or making direct personal loans, and it allows us to see how the relative financial benefit or cost of participating in a bidding RoSCA varies for different members.

The results of the NPV calculation for each member in the computer simulated *tender dhukuti* (bidding RoSCA) are illustrated in Figure 1. From the results depicted in Figure 1, one can see that the *dhukuti* organizer has a large positive NPV, and thus a large financial benefit compared to borrowing the equivalent amount of money through a direct personal loan (or loans) at the local going rate of interest. In fact, the financial benefit obtained from organizing the *dhukuti* is even preferable to being given an interest-free loan. This benefit is offset, although arguably only partially, by the hassle the organizer has to endure in setting up and repeatedly hosting the *dhukuti* and the risk he or she faces of having to make good on the default of a member without a sponsor<sup>7</sup>. In contrast, it can be seen that high-bidding early takers of the *dhukuti* fund have a fairly large negative NPV. This is offset by the quick, low hassle access to credit needed for immediate investment in a business venture that is afforded by bidding high to take the fund early. Low-bidding late takers of the *dhukuti* fund have a slightly negative NPV, but this is offset by the benefit of low risk, low hassle investment of capital. The last two takers of the *dhukuti* fund have a slightly positive NPV as well as the benefit of low risk, low hassle investment of capital. The very last fund taker earns an effective annual interest rate of about twenty-one percent on the money invested in the *dhukuti*, which is preferable to the eighteen percent annual interest rate earned from making a direct personal loan in Manang.

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<sup>7</sup> If a *dhukuti* member without a sponsoring guarantor is not able to pay an installment on time, then the organizer has to cover the member's installment amount at the time of the meeting. The member then has seven days to pay the installment amount to the organizer before interest begins to accrue at a rate equal to double the local going rate of interest on personal loans.

**Figure 1:** NPV of Participation in a Typical Tender Dhukuti (Bidding RoSCA) in Manang

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Despite the obviously very attractive financial incentive for organizing a *tender dhukuti*, wanton abuse of the system by purely self-interested, economic-maximizing individuals has been effectively discouraged in Manang by the social norms underlying *dhukuti* participation. When asked, Manang villagers say the primary reason for joining a *dhukuti* is to fulfill a sense of obligation to help a fellow community member facing a financial difficulty. They also insist that if a person without a clear financial need tried to organize a *dhukuti* in Manang, people would not join and the person would suffer substantial criticism for being perceived as greedy. As a result, local residents are disinclined to organize a *dhukuti* themselves unless they truly have a pressing financial need because of the embarrassment associated with openly admitting one's economic difficulties and having to ask fellow community members to provide help.

In addition to the important social controls against excessive formation of bidding RoSCAs in Manang, the market-based pricing aspect of bidding also serves as a self-regulating mechanism that both encourages the organization of bidding RoSCAs to satisfy the local demand for credit and discourages the creation of a larger number of RoSCAs than the local demand for credit can support. Theoretically, since the financial returns obtained from organizing and investing in a bidding RoSCA increase with increasing demand for credit (because higher winning bids equate to lower installment amounts), the local population is economically motivated to organize and participate in as many bidding RoSCAs as the demand for credit will support. But, by the same token, if the number of bidding RoSCAs in operation were to surpass the level that the local demand for credit could support, then reduced competition for funds would drive down the magnitude of winning bids (and hence raise installment amounts) to a point where the cost of participation would make joining a bidding RoSCA economically unattractive for investors.

By considering the formation and bidding histories of *tender dhukuti* in Manang from 1999 to 2004, a period of cyclic demand for credit, this self-regulating aspect of bidding RoSCAs can be seen in action. Following exceptionally strong growth during the latter 1990s, Nepal's tourism industry suffered drastic reductions in visitor numbers in 2002 and 2003 due to the general worldwide economic downturn that began in 2001, the decline in international travel following the September 11, 2001 terrorist attacks in the United States, and security concerns among potential visitors due to Nepal's escalating Maoist insurgency. The sudden deterioration of tourism prospects in Manang put a quick halt to what had been an enthusiastic binge of tourism business development, and for the first time in over a decade no tourism-related construction occurred in Manang in 2002 or 2003. During the heaviest period of tourism

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business development in Manang, five bidding RoSCAs had been formed between 1999 and 2001 while the going rate of annual interest on local personal loans stood at twenty-four percent. As the demand for credit financing subsequently plummeted, however, the going rate of annual interest on personal loans fell to eighteen percent in 2002 and ten percent in 2003, and no new RoSCAs were organized in Manang.

By 2004, tourism prospects in Nepal began to brighten, and the going rate of annual interest on personal loans in Manang increased slightly to twelve percent, reflecting a modest increase in the demand for credit as a few local entrepreneurs pushed ahead with tourism-related construction projects. A new *tender dhukuti* was organized in Manang at the beginning of the year, but due to continued uncertainty surrounding the tourism market, the number of people willing to join was only twenty-one instead of the preferred thirty members. Since the organizer needed a gross fund size of at least 300,000 rupees to meet his financial obligations, the members collectively agreed to pay installments of 15,000 rupees at each meeting instead of the normal 10,000 rupees. To counter the burden of paying a higher than normal installment amount, the members agreed to meet three times per year instead of four, thereby stretching the overall term length of the *dhukuti* from five years to seven. Relatively lackluster bidding in the early rounds of this new RoSCA demonstrated that the local demand for credit was lower than during the early rounds of RoSCAs organized between 1999 and 2001. While winning bids in the opening rounds of the earlier RoSCAs had typically been equal to roughly fifty-five percent of the gross fund, the winning bids in the first two bidding rounds of the new RoSCA were less than forty percent of the gross fund.

## 6. Concluding Remarks

As this article has described, the *tender dhukuti* form of bidding RoSCA used in Manang provides a market-based credit pricing mechanism that effectively accommodates individual variations in personal demand for credit, attracts investment funds, and is sufficiently flexible to withstand changes in the overall local demand for credit over time. Because participation in a *tender dhukuti* suits an entire spectrum of business interests, it has become an exceptionally popular means of saving, investing, and credit financing in Manang and has played a critical role in facilitating widespread involvement in entrepreneurial ventures among the local population. For those with a need for funds, it provides an attractive instrument through which to access capital at a price and in a time frame that reflects each person's relative demand. For those with surplus funds, it provides an attractive instrument in which to invest capital and obtain a high return. For the organizer, it provides quick access to capital and an

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attractive financial benefit to counter the hassle of organizing the RoSCA and hosting its meetings for several years. It is this bringing together and serving of such varied yet complementary business interests that makes bidding RoSCAs so attractive.

However, despite the very positive role the *tender dhukuti* has played in the revival of widespread entrepreneurial activity in Manang, bidding RoSCAs should not necessarily be seen as a panacea for all credit hungry communities. Successful RoSCAs require a great deal of mutual trust and cooperation among the members. There have been significant problems with the use of RoSCAs in areas of Nepal where membership is drawn from a relatively large population and is not homogeneous or tightly bound. For example, RoSCAs organized in Kathmandu have included participants from many different ethnic groups, including Newar, Marwari, Bahun-Chhetri, Thakali, Sherpa, Tibetan, Gurung, and Nyishangte. Among mixed-ethnicity RoSCAs in Kathmandu, problems have arisen due to the lack of effective social pressure to regulate behavior and the difficulty of punishing defaulters. In cases of mixed-ethnicity RoSCAs, social stigma associated with default is ineffective in dissuading people from defaulting because members belong to different communities. In some cases of default, members of mixed-ethnicity RoSCAs have been unable to collect collateral from a defaulter due to a lack of personal knowledge about the defaulter's whereabouts, the defaulter's family or social network, or the defaulter's fixed property. I know of several Nyishangte and Newar businessmen who stopped participating in RoSCAs in Kathmandu because of such problems, and other scholars have reported problems of default among RoSCAs in Kathmandu as well (Zivetz 1992, p. 103; Muhlich 1997, p. 208; Seibel, Dhakhwa, and Schrader 1998, p. 270).

RoSCAs in Manang, however, have not suffered from such problems. In all the cooperative affairs of the Manang community – from irrigating fields and managing forest resources, to sponsoring communal religious rites, to participating in RoSCAs – there is a strong and justifiable belief that outsiders' behavior would not be held in check by the same obligations of cooperation and reciprocity as are members of the community. Communal cooperation is a linchpin of Manang village society, and a strong code of social norms exist that compel each person to cooperate in community affairs, fulfill communal obligations, and maintain balanced reciprocity relations with other members of the community. In Manang, the traditions of cooperation and reciprocity have carried over to the financial sphere as well, as illustrated by the widespread use of personal lending, business partnerships, and rotating savings and credit associations.

In Manang as elsewhere, entrepreneurs' ability to take advantage of available commercial opportunities has largely depended upon the accessibility of capital to

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finance business ventures. Among the Manang community, such capital has been made widely available through various forms of internal lending, all of which have been based on the communal norms of cooperation and reciprocity permeating Manang society. For reciprocity-based internal lending systems to work, however, a high degree of solidarity and mutual trust must exist among participants, something that is made possible in Manang by the ethnic and cultural homogeneity and social cohesiveness of the community. As with cooperation and reciprocity in other communal activities, the practice of cooperation and reciprocity in financial activities is imbedded within local social relations and cultural practices. These in turn feed back into the maintenance of the socio-cultural norms that serve as the community's inherent controls against errant individual behavior and thus are essential to maintaining the mutual trust necessary to keep reciprocity relations intact and allow the continuance of cooperative business financing systems.

Unlike mixed-ethnicity RoSCAs in Kathmandu, to participate in a Manang *dhukuti*, one must be a well-known and trusted member of the community. In addition, one must have local fixed property serving as effective collateral worth much more than the *dhukuti* fund that could be made off with, or else have a sponsor with such collateral, or else wait until the last round of the *dhukuti* to take the fund. And if a change in circumstances were to preclude a *dhukuti* member from being able to meet his or her payment obligation, he or she could obtain support from relatives or friends to cover the debt until he or she is able to pay. Essentially, because *dhukuti* participants in Manang all hail from the same small, tightly-knit ethnic community, default would be easily punishable and communal peer pressure has been perfectly effective in preventing it from occurring. In Manang, *dhukuti* participants are bound by strong social norms against cheating members of their own community, and the social stigma that would accompany default is so high as to dissuade its occurrence. As a result, *dhukuti* members perceive the likelihood of default by other members as nil, and indeed there has not been a single case of default in a Manang *dhukuti*.

Under the conditions of mutual trust and reciprocal cooperation that prevail in Manang, *dhukuti* participation is considered virtually risk free, and, as such, the price of rotating credit can be based solely on the local demand for finance capital. Thus, in a relatively small, homogenous, cooperative community such as Manang, the *tender dhukuti* form of bidding RoSCA has worked remarkably well. In general, the perceived lack of default risk on economic arrangements between members of the Manang community has been vitally important in creating and maintaining an environment that is conducive for widespread economic cooperation through personal lending, business partnering, and participating in rotating savings and credit associations.

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**Abstract**

*The inability to obtain sufficient capital to finance the start up or operation of a small enterprise is often a constraining factor limiting engagement in income generating activities by residents of less developed countries where formal sources of credit are unavailable, inadequate, or unpopular due to rigid collateral requirements. This article describes the recent adoption of a bidding form of rotating savings and credit association (RoSCA) by villagers from the Nyishangte community in the Manang region of Nepal and analyzes the community's remarkably successful use of bidding RoSCAs to finance local business ventures. The proliferation of bidding RoSCAs in Manang since 1999 has effectively created a local market for capital where credit can be accessed at a price directly reflecting the local demand. By reducing the risk and raising the returns associated with investing capital and by lowering the trouble of accessing credit, the use of bidding RoSCAs has greatly facilitated the pooling of finance capital in Manang and made credit available to a large portion of the community, enabling widespread involvement in entrepreneurial ventures.*