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Indigenous Credit Associations in Botswana: An Application of Elinor Ostrom's Common-Pool Resource Analysis

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INDIGENOUS CREDIT INSTITUTIONS IN BOTSWANA: AN APPLICATION OF ELINOR OSTROM'S COMMON-POOL RESOURCE ANALYSIS

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By

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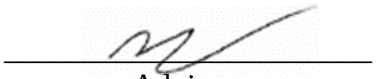

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ABSTRACT

In this paper I attempt to analyze and explain the important of certain indigenous credit agreements in Botswana. Rotating Savings and Credit Associations are agreements made by a group of people who create a communal fund which rotates around the group until each member had had access to the pooled resource. These agreements are informal and most commonly found in the poorer traditional sectors of Botswana's economy.

Furthermore, I attempt to explain why these agreements can be best understood using Elinor Ostrom's common-pool resource analysis. This framework explains why these agreements are so successful in creating a source of capital, which is sustainable and long-enduring, for many entrepreneurs who belong to the poor sectors of the economy. Also, using this analysis, certain policy decisions can be critiqued as to how best to categorize and foster these indigenous institutions so that more people can have access to informal credit.

Keywords: Botswana, Indigenous, Informal, Rotating Savings and Credit Agreement, Elinor Ostrom, Common-Pool Resource

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CHAPTER 1

INTRODUCTION

Africa's paradox is that it is flooded with immense natural, agricultural, and human resources, yet many of its countries are characterized by poverty, short life expectancies, political instability, disease, and chaos. Although some countries have seen success in spite of these hostile environments, Africa as a whole has not been able to meet her full potential. Semi-successful countries, like Botswana, are characterized, in many cases, by their tendency and willingness to adopt and allow for indigenous African institutions to solve many of the local and communal economic problems. My research explores informal credit, capital, and finance markets in order to determine how their roles as indigenous institutions have provided much needed capital and funding for developing countries.

Specifically, I have attempted to analyze informal credit associations and lending institutions that occur in many areas where formal banking and lending institutions are not present or do not sufficiently meet the needs of many of the citizens: Rotating Savings and Credit Associations (ROSCAs). Though ROSCAs have many names and cultural foundations which vary depending on the geographical location and demographical makeup, they have proven to be effective at increasing the amount of capital that is available to entrepreneurs in the developing world. To understand why these have been particularly effective in Sub-Saharan Africa, with special emphasis on

the urban and rural areas of Botswana, I apply Elinor Ostrom's analysis on Common Pool Resources (CPR).She discusses how resources can be efficiently distributed within certain institutional frameworks and how joint-venture, collective choice agreements can be more beneficial (both culturally and economically) than traditional, formal credit institutions for everyone. Loanable funds, within the construct of ROSCAs, can be viewed as CPRs which are renewed and distributed according to the governance and organization provided by the appropriators and contributors of the funds. In this context, ROSCAs meet the seven primary design principles for long-enduring CPR institutions which Ostrom outlined in her extensive work on the topic of Common-Pool Resources. By explaining ROSCAs with Ostrom's CPR institutional analysis, I explain how such agreements are formed by analyzing certain case studies from Gaborone and other areas in Botswana while explaining the rules of institutional development inherit in these agreements. Using a historical understanding and current data, policy decisions were concluded as to what role policy and centralized government can play in developing and making these credit associations and capital more available to urban and agricultural entrepreneurs.

Though this study is specific to Africa, with Botswana acting as a model, the framework applied can be extended to other economically developing areas that are in need of entrepreneurial development.

CHAPTER 2

LITERATURE REVIEW

Because of Africa's immense natural wealth and potential for growth, there has been a variety of articles published by author's giving their solutions to "fix" Africa. However, it is quite often the case that these solutions involve African countries adopting and creating westernized institutions to fit the need of African countries. Historically, Botswana has had leadership which actively avoids this trend. But for many other countries in Africa, leaders have chosen to try and supplant new institutions that do not fit in an African context (Ayittey 1998). New institutions that were adopted inhibited growth that had been created by the traditional, indigenous institutions that existed prior to the colonial era. To break the "vicious cycle of poverty" that Africa was experiencing, many development experts concluded that the solution was capital formation and accumulation. Furthermore, because most of Africa was poor and lacked savings, its capital markets either did not exist or were greatly underdeveloped (Ibid.). The only way to get out of this trap was with infusions of capital from abroad and the adoption of those institutions that had fostered capital growth in the west. This came in the form of foreign aid and the World Bank supporting national, and central banking authorities which rallied to help establish banking institutions to provide vehicles for savings (Ibid.) These unsuccessful measures fueled some of the instability because many leaders, going back to the colonial period, did not take into account the effect that such measures would have on the

indigenous African institutions. The informal sectors of the African economy actually had vehicles for savings and means for capital accumulation, but it was the suppression of national governments and poor leadership that fueled the cycle of poverty.

Botswana had a different history than most of Africa. In its post-colonial period – 1966 through the mid-1980s – and with the election of Seretse Khama, the government followed a fairly liberal tradition of free markets. The indigenous sectors of Botswana were left to thrive and over time there was capital flight into Botswana, saving increased, and so did collective action agreements such as Rotating Savings and Credit Associations (Ibid.) However, as pointed out by many economists, it is believed that informal credit institutions that occur outside of the context of formalized institutions are not competitive and that they will become less and less important in the accumulation of capital. This has not proven to be the case and these informal agreements which have their roots in long-standing African traditions actually have an advantage over the formalized systems which suffer from serious informational problems and asymmetries (van der Brink and Chavas 1997).

Putting ROSCA development and operations within the context of common-pool resource helps explain how they are better able to satisfy demand for credit and spur entrepreneurial growth for many sectors of the economy. Because ROSCAs, as credit institutions, meet a variety of design principles that are characterized by long-enduring common-pool resource agreements, they can provide those individuals who are appropriators of the funds within the ROSCA with sufficient capital for a variety of entrepreneurial activities (Ostrom 1990). Furthermore, due to the unique nature of each

individual ROSCA, they are able to be tailored to the needs and individual circumstances of those who are seeking access to credit.

CHAPTER 3

UNDERSTANDING ELINOR OSTROM'S CPR ANALYSIS

Elinor Ostrom began her work on common-pool resources in an attempt to offer a different solution to the tragedy of the commons. Traditional thought dictates that there are two primary methods for dealing with the tragedy of the commons problem: by the way of the state/state intervention and by way of privatization and property rights. The first presumption leads us to think that to avoid the overuse and overconsumption of natural resources where there is no clear owner of that property, an external agent – most commonly thought to be a central government authority or agency – is necessary. This external agent will then decide who can use the resource, to what extent they can use it, when they can use it, and how many others may use it. Of course this management does not have to take form of directives and mandates, but it can the form of taxes on resources use and the issuance of other fees and penalties for using the resource (Pigou 1920). This line of thought, where a central authority has to monitor and protect a resource from overconsumption, assumes that the central authority has the proper knowledge, access to reliable information, ability to readily monitor the resource, and can operate with near-zero costs. Under these conditions, the central agent could determine what the optimally efficient level of consumption and use of that resource is. However, this is hardly ever the case when it comes to governmental management of resources.

Constant monitoring, determining optimal output, and imposing sanctions requires information that is nearly impossible for any one authority to be able to obtain.

The second method for dealing with the tragedy of the commons was most famously described by Ronald Coase. He proposed that assigning property rights to the resource will ensure that the most efficient level of resource extraction will occur as long as there are zero or near zero transactions costs (Coase 1937). Furthermore, it does not matter who the property rights are assigned to as long as they are assigned and there are no barriers to transacting between those who wish to use the resource. However, even though property rights to certain resources can be assigned and divided among appropriators of the resource, the resource system can still be owned in common when the resource is non-stationary (a common example of a non-stationary resource is a fishery). As Colin Clark states (1992, 117), "common ownership is the fundamental fact affecting most ever regime of fishery management." Though there are significant benefits to assigning property rights over resource management via central direction, assuming that it is the only way to efficiently manage resources is not necessarily true.

These two recommendations are often posed as diametrically opposed positions and it is posited that if one recommendation is correct, the other must be incorrect. However, both the central direction and privatization advocates agree that institutional change that affects the management of these resources must be the result of some autonomous change from the outside. They both agree that some outside authority, which has no direct relation to the resource, is necessary in order to modify the institutional framework and impose it on the appropriators to achieve an efficient outcome. Elinor Ostrom's solution ventures far from these two well-known positions and instead presents

the argument that establishing sound institutions is incredibly difficult, time-consuming, and can very well lead to internal conflicts. It is a process that requires very unique knowledge about time and place and deep knowledge of culture and the rules of that culture (Ostrom 1990). As such, in a field setting, public and private institutions are hardly ever separate; they depend on one another.

Ostrom's solution to the commons dilemma is one that combines these two theories into an institution of self-government by appropriators. Ostrom recognizes the presentation of the commons problem is an illustration of a typical prisoner's dilemma where the dominant strategy among the appropriators of a resource is to act in non-cooperative ways to ensure maximization of their own utility (Ibid.). However, if the appropriators are able to communicate freely and can determine that that the worst outcome for all parties is if all parties defect from a cooperative strategy, the appropriators involved can agree to a contract and ask a third party enforcer – a private arbitrator who is bound by the terms of a contract and not some outside the legal framework – to ensure that the other parties do not defect from the agreement. As soon as it is accepted that a private party may take on the role of an external enforcer, a wide variety of implications can be derived.

A personally financed contract-enforcement situation allows for greater cooperation between parties that were originally non-cooperative. The appropriators of the resource can now set "the rules of the game" as they see fit to ensure efficiency. Furthermore, the agreement is made by the appropriators and is not coercively forced upon them by some autonomous, external authority; this solution allows for institutional flexibility. Also, it encourages for individuals to make long-term arrangements about the

management of resources that they were previously unable to make (Ibid.). This type of agreement is vastly different from external agents imposing rules on resource management. The new institutional arrangements allows for the appropriators to internalize the costs of management, enforcement, monitoring, and the costs of gathering specific knowledge of time and place that were previously imposed on the external agents – the government. Self-interest of the appropriators dictate that they would monitor the resource and the other appropriators for infractions of the contract and report them to the privately hired, third-party arbitrator who would then inquire about the infraction and settle and disputes among appropriators.

These institutional alternatives to state management and property right assignments are not just mere theoretical constructs; there are actual, empirical examples where these institutions exist and have existed for prolonged periods of time. Ostrom and other authors have provided many examples that range from fisheries in Turkey and communal meadows and graze lands in Switzerland to irrigation management systems in Spain and the Philippines. Despite the significant differences among how the institution operates given local circumstances, customs, and norms, all share the same fundamental framework under which they operate. Among these similarities though, the fact that they have persevered despite communal ownership and management is the most interesting (Ostrom 2005). The key to understanding why these resources, which by traditional economic thinking should have faced a tragedy of the commons dilemma, have been sustainable and long-enduring, is to explain how and why individuals have been able to act collectively despite complex, uncertain, and interdependent environments in which individuals have such strong incentives to deviate from the cooperative strategy.

Though each CPR system differs in its particular structure, it is because of these particular differences they are able to survive. Without these differences that arise from factors such as differences in physical settings of the resource system, cultural norms and mores, and economic and political relationships, the appropriators of the resource would not be able to take advantage of the flexibility that local CPR agreements provide. However, despite the vast differences in particulars, Ostrom was able to identify a list of seven design principles that all common-pool resource agreements have in common which have made them long-enduring and successful in maintaining sustainability. These design principles include: 1) clearly defined boundaries; 2) congruence between rules and local conditions; 3) collective-choice arrangements; 4) monitoring systems; 5) graduated sanctions for violators; 6) conflict-resolution mechanisms; 7) recognition of rights to organize. Before moving on and explaining how rotating savings and credit associations in Botswana can be understood within Ostrom's framework and analysis, it is necessary first to explain each of the seven design principles in greater detail.

Clearly defined boundaries

In context of the Coase Theorem, clearly defining who can and who cannot withdraw resources from a well-defined resource system is the closest similarity to assigning property rights to the resource. However, despite the fact that the resource and the appropriators of the resource are clearly defined, as are the rules of entry for new appropriators, it does not change that the resource is still commonly owned by multiple parties – the number of which changes with the nature of the resource and the agreement (Ostrom 1990). But without this step of clearly defining the resource and those who can expropriate resources from it, those appropriators that are in agreement leave the resource

open to those outsiders who could benefit from the resource without contributing anything to the CPR agreement. For the CPR agreement to be successful and sustainable, there has to be some degree of excludability from the resource. Furthermore, by closing the boundaries and establishing who may and may not use the resource system, the appropriators must set rules that limit the appropriation of resources and mandate certain behaviors of provision of the appropriators.

Congruence between rules and local conditions

Appropriation rules that restrict time, place, technology, and the quantity of resource units that can be withdrawn must take local conditions, the conditions of the resource system, and the rules of provision (rules set up by the appropriators that designate what resources – labor, funding, materials, etc. – all other appropriators must provide for the resource system) into consideration (Ibid.). Rules for resource appropriation are very unique to the given circumstance of the CPR and any single set of rules could not possibly deal with the unique issues that may arise in all resource systems. The understood rules of a CPR must be created, and allowed to be modified, by those individuals that use the resource system

Institutions that allow for the creation and modification of rules by those individuals that are most affected by them are ones that are best able to fit the institution to the specific characteristics of the physical and social environment of the resource system. Ostrom theorizes that maintaining low costs in regards to changing the rules is one of the primary reasons that there are such high compliance rates with the original contract in long-enduring CPR institutions (Ibid.).External enforcement of rules can only

partly explain the high compliance rates; internal rule creation helps explain some of the remaining portion.

Monitoring

Monitors and third-party enforcers who enforce the rules of the mutually agreed upon contract at the creation of the CPR agreement are accountable to appropriators of the resource. Successful monitoring of the resource system is one of the most difficult aspects of CPR agreements to maintain successfully over the long-term because there are strong incentives for both appropriators and monitors to deviate from a cooperative strategy. However, many CPR agreements have been able to overcome this problem through a mutual-monitoring framework where appropriators are the monitors and they report deviant behaviors to the other appropriators Ibid.). The robust systems of monitoring have been major contributors to CPR agreement commitment. Mutual-monitoring systems produce private benefits for those who monitor as well as disperse benefits that come from the success of the rules.

Graduated Sanctions

A system of graduated sanctions that range from minor fines and fees to banishment from the resource system may be more efficient in producing and maintaining cooperative strategies between the appropriators than a system of significant and inflexible sanctions. Furthermore, a mutual-monitoring system where the appropriators act as the monitors and enforcers of the CPR agreement can generate a system where the particular circumstances surrounding a rule infraction are more well-known and the violator of the rule can be punished appropriately given the individual circumstances (Ibid.). If the violator normally follows the rules of the agreement but, due

to some extenuating personal circumstances, found the benefits of acting in a non-cooperative way to exceed the costs, the other appropriators may find that a small and insignificant punishment may be more suitable to maintaining the overall agreement than a significant penalty that seriously punishes the rule breaker. A system of graduated sanctions is an attempt by appropriators to maintain CPR membership and sustainability of the resource system.

Conflict-Resolution mechanisms

For individuals to understand and follow a given set of rules over a long period of time, there must be some kind of institutional mechanism for the appropriators of a resource to resolve, question, and address what constitutes a rule infraction. If individuals within a CPR agreement make simple mistakes or face extreme personal hardships that make deviant behavior beneficial and they do not have easy and low-costs access to local arenas of conflict resolution, rules may eventually come to be seen as unjust or unfair which could contribute to a significant decrease in compliance rates and a dissipation of the CPR agreement altogether (Ibid.).

Recognition of rights to organize

By recognition of rights of organize, Ostrom means that the "rights of appropriators to devise their own institutions are not challenged by external government authorities." Because the self-governing CPR agreements are not created with the permission of any centralized government and are instead the outgrowths of local, indigenous institutions, they are not formalized under the jurisdiction of state or federal governments. If the governmental authorities see it as their sole right to be able to grant such permission and create institutions within a geographical boundary, it will be very

difficult for local appropriators to maintain a CPR agreement over the long-term (Ibid.). Given that external authorities recognize the legitimacy of these rules set up by the CPR agreement and its appropriators, the appropriators, monitors, and third-party enforcers of the agreement may be able create long-lasting institutions that are more efficient and desirable than any institution that is imposed upon them.

Rotating Savings and Credit Associations in Botswana

Understanding Elinor Ostrom's thesis on local institutional development of common-pooled resources is key to understanding how and why informal credit markets, where capital resources are pooled by a number of individuals within a local setting, come into existence and why they have been so successful in providing certain sectors of the population of Botswana with capital. Broadly defined, a rotating savings and credit association (ROSCA) – which goes by a variety of names within Africa, but most commonly referred to as a njangeh in the traditional and rural sectors of Botswana – is a voluntary association of men and women who meet at predetermined intervals and distribute some pooled source of capital funding to one of its members. The cycle continues until each of the members of the ROSCA have received their distribution of the communal funds. The funds or capital resource are renewed at each meeting and are made up of fixed or variable contributions from each member in the pool (Henever 2006). Though ROSCAs take many forms and can have complex and unique rules determined by the local customs, needs, and circumstances of the members of the fund, the general structure of a rotating fund which gets distributed among the members is common to all agreements.

Maintaining the characteristics of a CPR agreement, ROSCA have a general framework similar to that described by Ostrom. The originator and leader of the association – the one who regularly hosts the predetermined meetings – and several other managers chosen by the members of the association are charged with monitoring the various transactions made by the other members of and safekeeping the communal fund. The leader of the agreement, along with the other members, is also responsible for imposing fines and sanctions to enforce the agreed upon rules of the ROSCA. The general structure and division of responsibilities inherent in these agreements are very similar, if not identical, to the seven design principles pointed out and elaborated upon by Ostrom. However, there is a key difference between what Ostrom described in her CPR analysis and ROSCA formation. It does not necessarily alter or invalidate any of the claims that Ostrom presents, but it does extend her analysis beyond what she intended. Unlike natural resources (such as fisheries, irrigation/water systems, and graze lands) which she thoroughly covers in her thesis, ROSCAs consist of man-made, synthetic materials such as durable goods of funds for capital accumulation. Though the two are vastly different, the same implications can be applied to this non-natural, renewable resources.

Even though capital funding is not a natural resource, the question of how to efficiently manage and operate a fixed, shared resource system is still the problem at hand. ROSCAs begin to deal with this problem through its membership selection and the rotation order. The initial risk associated with forming a long-enduring ROSCA agreement is determining who is allowed to contribute to and draw from the communal capital fund – i.e. defining the boundaries of the CPR. This risk is initially born by the

originator of the ROSCA who is responsible for the overall efficiency of creating and managing the ROSCA prior to any type of complex rule agreements (Ardener 1964). In regards to membership, the originator must decide between the quantity and quality of the members allowed to join and there is a tradeoff between these two factors. The originator can attempt to organize a small group of people who have a low-risk of defaulting regarding periodic payments. However, limiting the number of members to only those who are the most credit worthy would require much larger payments from each member of the ROSCA which would increase their risk of defaulting. Extending membership to those that have higher risks of defaulting allows each member to make smaller payments to the ROSCA over an extended period of time which reduces the overall harm caused by any one default though there may be higher rates of default. Even though there may be a higher rate of non-compliance and default, the burden that it would place on a larger group would be much smaller than if the group were smaller and the payments required of each individual were larger. Given these conditions, the originator of a ROSCA has a strong incentive to use local information about the credit-worthiness of individuals to recruit as many credit-worthy members as possible. There is a trade-off between safety and decreased costs that each ROSCA must balance effectively to remain solvent and sustainable.

The problem of ensuring long-term survival of the ROSCA is further dealt with via determining the rotation schedule of the funds. Though this is done in many ways and can be either predetermined, decided by lot, or done by some bidding schedule, the originator can use any of these methods to help prevent against non-cooperative strategies and long-term sustainability (Henever 2006). For example, in a system of fixed

contributions and a predetermined rotation schedule, those individuals that are the most credit-worthy will most likely receive the funds earlier in the rotation schedule and those who have a higher risk of possible default receive the funds later (van der Brink and Chavas 1997). It is up to the originator and members of the ROSCA to determine this subjective definition of credit-worthiness and manage the risks of the commonly-pooled fund. The earlier positions in the rotation schedule are the most advantageous positions because those who receive the pool first are the net receivers of credit. What incentive then do the least credit-worthy members, those who are forced to be in latter part of the rotation schedule, have to remain in the ROSCA if they receive, on net, less credit than those earlier in the rotation? If ROSCAs were a one-shot game – where there were no long-lasting enduring consequences of being a member of the association – those individuals that are least credit-worthy would have little incentive to join a ROSCA.

However, being a member of a ROSCA, no matter your credit-worthiness, is an advantageous position to be in because it gives individuals a chance to establish a credit history with the community (Ardener 1964). Even if you are in the latter part of the rotation schedule, members are able to establish a credit rapport and reputation within the community which makes it more likely for them to be considered for other ROSCAs in the future in which they might be in the earlier portion of the rotation schedules. Thus, the repeated nature of ROSCAs allow for individuals to develop credit ranking and the net benefits of ROSCAs, both to the community and to the individual, have to be calculated over more than one period of time. The selection of membership and order of the rotation cycle are some of the most powerful tools the originators of ROSCAs have at

their disposal to incentivize the member to maintain a cooperative strategy and ensure long-term sustainability of the communal fund.

However, despite the strong incentive to minimize the chance of any one member of the ROSCA defaulting, the rotation system acts as a monitoring system. Not only does the originator and the few ROSCA managers try to monitor the compliance of all of the members, each member has a strong incentive to monitor and report any risky behaviors, such as misuse of the funds once they were distributed to an individual, of all other members within the ROSCA (van der Brink and Chavas 1997). Any one person defaulting directly harms everyone else within the pool and therefore the costs of monitoring also have direct personal benefits. Furthermore, those towards the end of the rotation cycle have a disproportionately large incentive to monitor because they bear a larger share of the costs associated default due to the probability that more people have the chance to default before the pool circles around to them. Furthermore, given that the rotation cycle is known and not random – which is not always the case in more complex ROSCAs – the next person in line to receive the pooled funds has a disproportionately large incentive to monitor and report any rule infractions of the person who is directly before him to ensure that he does not incur any extra costs associated with someone defaulting. In this case, not only do all members have a strong personal incentive to monitor each other to ensure compliance with the rules, but the role of primary monitor, and all of the costs associated with being the primary monitor, rotate evenly around the ROSCA unless you are the first person to receive the funds. The costs of monitoring are, for the most part, evenly distributed among the members of the fund and no single

individual has to bear undue burden from being the primary monitor for an extended period of time.

Despite the strong pressures and mechanisms in place to prevent people from defaulting, occasional defaults are a reality that have to be resolved accordingly. Most commonly, if an individual defaults, which constitutes a rule infraction, the members and originator of the fund take the circumstances of the default into account and decide accordingly on the proper measure to take in an attempt to punish the individual, maintain that individual's membership within the association, and compensate any other members for the loss that they may have incurred (Ardener 1964). Most ROSCAs have some insurance mechanism to ensure that those who do default have a chance to resolve their issues financially and maintain their membership. These take the form of being able to delay payment to the fund, borrow money from another appropriator or from some second emergency fund that was set up when the ROSCA originated, or offer up collateral for the span of that payment cycle (Ibid.). As long as the default is temporary and the individual is able to quickly financially resolve the issues that led to the default, they may be able to maintain membership in the ROSCA with little to no financial or personal costs.

However, in the case where there is a definite default and there are no chances of being able to resolve the issue, in which case the individual who defaulted must leave the ROSCA, there are a number of punishments, that range from mild to severe, that can be imposed upon that person by the remaining members of the fund. A common form of punishment is that the person who defaulted has to pay a nominal fee and decreased credit ranking within the community. The combination of social harassment, decreased

ability to receive credit in the future, and minimal monetary fees seem to be the most common form of punishment and, in empirical examples, sufficient enough to prevent people from defaulting. However, more severe punishments have been recorded such as complete ostracism from the community, repossession of the defaulter's personal property, and even bodily harm (Ibid.). However, these punishments are typically reserved for those individuals who had already received their turn in the rotation and gained access to the funds and defaulted afterward due to some egregious misuse of the funds. This is seen as theft and the benefits associated with punishing a thief are much greater than punishing someone who was temporarily unable to contribute to the fund. The graduated sanctions and punishments are dependent upon the costs associated with the punishment. The remaining members of the ROSCA will continue to punish up to the point where the marginal costs associated with punishment equal the marginal benefits reaped from harming the defaulter. And because the costs of default are shared among all members of the ROSCA, the sanctions will be fairly mild and distributed among the members.

The institutional framework of ROSCAs formation follows all seven design principles of CPR agreements and can be illustrated as such because of the nature of the resource being pooled. Though capital is different in many ways than natural resources, the same framework can be applied in understanding how they are formed and why they are so successful at providing entrepreneurs in Botswana with capital that is sufficient for capital accumulation. However, different types of ROSCAs are better at providing different types of capital than are others. Some are better for small groups of individuals and some are better fitting for large groups. The three most common ROSCAs which are

most regularly constructed in Botswana are the simple/random ROSCA, consumer durable ROSCA, and discounting ROSCA.

CHAPTER 4

EMPIRICAL EVIDENCE FROM BOTSWANA

Types of Rotating Savings and Credit Associations

In the case of a simple or random ROSCA, each individual contributes a predetermined and fixed sum of money to the collective fund. The originator of the fund – the individual who bore the costs of organizing and managing the funds – commonly is the first member to receive the funds. However, the remaining members of the ROSCA are either chosen by merit and credit-worthiness or by random lottery. Each member of the fund contributes his periodic contribution until the fund has rotated so that all members have had a chance to receive the pool. Each member of the association contributes the same amount and receives the full amount that they have contributed. In this form, there is no net monetary gain or loss for any participant in the association (Okurut and Thuto 2009). However, those who receive the pool first are net debtors and those who receive the funds last are net savers. Each individual wants to be the first, however, according to chance or credit-worthiness, there is an order of diminishing benefits. Though the last person who receives the pot accrues no monetary loss – for they could have done just as well if they had set aside periodic payments equal to the amount of his ROSCA contributions – he does succeed in gaining a reputation of being credit-worthy. This increases his chances at gaining entry to ROSCAs with larger pools where he might be able to get a more favorable position in the rotation cycle.

A discounting ROSCA uses a system of bidding for the communal funds as the means of determining who receives the pooled funds first. After the individuals have been organized by the originator and the rules of the ROSCA have defined by the participants, the first round of contributions are collected and pooled. Again, in most cases, this first rotation is commonly given to the originator. However, in each successive round, the contributors compete for access to the funds for this period. At the beginning of each period, the contributors offer bids for what they are willing to pay to receive the funds. The person with the highest bid gains access to the funds. However, this bid translates into a discounted rate for the remaining members who have yet to receive the pot. The amount of the pooled resources change with each rotation and so do the individual payments of those who have yet to receive the pool. Due to this framework, those who receive the pot earlier – after the originator has had his turn – receive a smaller pool than those who receive it later in the rotation cycle. In this system, the effects of discounting are illustrated because there are net borrowers and lenders of capital funds. As such, there is an internal interest rate within bidding ROSCAs which is demonstrated by the individuals' bids (Henever 2006). Below is a chart illustrating the effects of a discounting ROSCA:

Members	Contributions by Period							Total Paid		Net Gain/Loss
	P1	P2	P3	P4	P5	P6	P7			
Highest Bid	0	10	10	10	20	25				
M1	100	100	100	100	100	100	100	700		0
M2	100	100	100	100	100	100	100	700		-50
M3	100	90	100	100	100	100	100	690		-30
M4	100	90	90	100	100	100	100	680		-10
M5	100	90	90	90	100	100	100	670		-10
M6	100	90	90	90	80	100	100	650		25
M7	100	90	90	90	80	75	100	625		75
Total Received	700	650	660	670	660	675	700	4715		

This table illustrates how a ROSCA of seven people over seven periods of time contribute, bid, and receive the commonly pooled capital funds. Those individuals who have not received the funds at a particular period are the only ones eligible for the discount after a bid for the funds is made. Therefore, those who receive the pool later in the rotation cycle are those who receive greater financial outcomes relative to the others in the association (with the exception of the originator). In this generic example, individuals M6 an M7 are net lenders in this particular ROSCA and, as a result, receive interest payments on their loans to the net borrowers – M1-M5.

Thirdly, a consumer durable goods (CDG) ROSCA is common in Botswana, but nowhere near as prevalent as the simple or bidding ROSCAs. A CDG ROSCA is a slight variation on the simple ROSCA. As in the simple ROSCA, an originator organizes a group of individuals who, over a predetermined time period, contribute a fixed amount to a pooled fund. However, instead of receiving the pooled funds in each rotation, the appropriators receive some durable good that has been decided upon prior to the formation of the association. The originator usually is guaranteed some discounted price

under the guarantee that they buy a certain number of goods over a period of time. Thus, by pooling their funds the association is able to negotiate for goods at a lower price than if they were to operate individually (Anderson and Baland 2002). A CDG ROSCA is less flexible than simple and discounting ROSCAs, but they also avoid a lot of the problems associated with CPR agreements as well. Monitoring, sanctions, and rule enforcement all apply, but not to the same degree as other ROSCAs.

Though there are other, less common, forms that ROSCAs have taken in Botswana, the simple/random, discounting, and consumer durable goods ROSCAs are the most common forms (Henever 2006). They provide flexibility and much needed support to those entrepreneurs who are seeking to start small enterprises, need temporary loans, or use the funds for consumption smoothing. Furthermore, the type of ROSCA and the rules which constitute it are chosen based on the needs of the constituents of the fund. Each agreement's framework is created under the requirement that it will most efficiently meet the desires of its members. As such, the members of ROSCAs use different types of ROSCAs for different things.

How ROSCAs are used in Botswana

In the instance of simple/random ROSCAs, the funds are commonly used for the start-up and expansion of small, commercial enterprises (Okurut and Thuto 2009). Depending on the size of the fund, the capital can be used for anything from buying or leasing a small property to open a shop in a rural village to buying a small vehicle for transportation services; both are anecdotal examples of how simple ROSCAs have been used in rural Botswana. Because of the size and the relative similarity of the members in simple ROSCAs, they provide one of the easiest forms of credit for small entrepreneurs

in both the traditional rural sector and the poor informal, urban sectors of the population. Individuals with common goals, visions, and ability come together to form a communally owned resource from which they can start their own enterprises. As such, not only are the appropriators of the funds connected by just a mere credit agreement, but they have an incentive to help and support the small businesses that result from the ROSCA. To ensure repayment and the opportunity for more capital, the members of the fund patronize the services of the other members to both monitor their business activities to ensure compliance and ensure that they are able to continue to be contributing members of the fund.

Discounting ROSCAs typically have much larger pools and memberships, and have some degree of influence on other local enterprises that are not members of the fund. Discounting ROSCAs, because they can take interest rates into account, sometimes act as lending agencies to individuals that are not members of the fund. There are cases where members of discount ROSCAs receive the funds and then start their own money lending enterprises (Shanmugam 1989). They will use the large sums which originate from the discounting ROSCA – which typically have more stringent membership restrictions where only the most credit-worthy can gain access – to allocate credit through direct money lending, opening pawn shops, and organizing other informal credit agreements such as savings and credit cooperatives (which are similar to, but different institutionally from ROSCAs). Because in a discount ROSCA there is a chance of losing money if you agree to take out the funds earlier in the rotation cycle, many individuals use the money in multiple ways to try and receive a return on their risk. There are also instances where members have used the funds to start their own small enterprise, but due

to the large pool size, use any excess funds to invest in other local and foreign businesses. Discounting ROSCAs offer credit-worthy individuals with flexibility to use the funds in the most profitable ways, but this also increases the monitoring, punishment, and opportunity costs of the other members of the agreement. Sanctions for defaulting are typically greater in discounting ROSCAs because the funds offer a great deal of flexibility with the opportunity of personal success that do not benefit the original ROSCA beyond the repayment of the funds (Bouman 1995). Discounting ROSCAs have acted almost as decentralized banking units in many poor areas of Botswana, primarily rural villages.

CDG ROSCAs though, because they are less prevalent, have much smaller pools and much smaller memberships. In Botswana, CDG ROSCA membership is made up primarily of women – more than 52% in the areas surrounding Gaborone (Okurut and Thuto 2009). Women in Botswana constitute a majority in small urban and rural marketplaces where they sell homemade goods and services that range from clothing, foods, and other services that can be administered from the home. As such, CDG ROSCAs buy goods that can be easily bought, transported, and used within the home so that the women have a residential enterprise from which they are able to conduct business. Some examples of goods that are common are materials include in-home repair and extension, cell phones, cloth and other fabrics, as well as household goods such as manual sewing machines and washing machines. Women use these goods and services to sell and trade in the local marketplace to help support their households. There are even cases where CDG ROSCAs are used to help support and supply households with additional incomes so that other members in the household, who are attempting to start

their own enterprises with funds received from a separate ROSCA, can make repayments to simple and discounting ROSCAs. In small, limited communities, small ROSCAs, and the enterprises that result from them, support larger more flexible ROSCAs.

Even though ROSCAs have been very successful tools in creating robust and flexible credit for many individuals, they do not answer the question as to why they exist even when formal credit institutions are present and why the number of recorded ROSCAs that have come into existence have increased in recent years (Mosene 2002). According to Botswana Institute for Development Policy Analysis, an increase in credit regulation and regulation of formal institutions have led individuals to turn to informal sources of credit due to increased costs associated with acting within the formal credit markets (Okurut and Thuto 2009). Within Gaborone and the surrounding rural areas, the number of new ROSCAs have more than doubled from more than 5 years ago when formal banks underwent serious regulatory reform which limited their ability to make small business loans and loans to low-income families who had collateral to safeguard against default. The costs associated with giving small loans to these individuals increased as banks now had significantly higher regulatory costs including fees on compliance with new laws, overwhelming underwriting standards, and time costs that involved gathering more background and personal information on those individuals seeking loans (Harvey 2013). The increased costs that formal banks had to incur in order to make the loans were significantly higher than any return that they would have made by successfully having the loan repaid. This pushed poor and low income individuals who were seeking small business loans out of the market. As a result, they either had to resort

to alternative credit source or save a significant portion of their income over a prolonged period of time.

Ostrom's CPR analysis helps us realize why ROSCAs have been such a beneficial and enduring tool for those individuals that were recently pushed out of the formal credit market. All of the costs that banks would have incurred by giving these individuals loans are either non-existent or widely dispersed among the members of the ROSCA. Monitoring costs, credit evaluation, and administrative costs are shared by the members and each member receives benefits by internalizing those costs.

CHAPTER 5

CONCLUSION AND POSSIBLE POLICY PRESCRIPTION

Understanding the institutional development of informal credit markets is key to understanding that there is an unseen path for Africa to solve its endemic problems. Botswana, through its relative tolerance of informal credit markets, has shown that capital accumulation, which is necessary to solve this problem, is possible. Though informal credit markets may not play as much of a role in the future, as Botswana develops and household income and well-being increases, they do play a large role in many developing areas of Botswana today (Geertz 1962). Letting these institutions exist and play a role in local communities can be one way that these communities develop economically.

In the mid-1990s Botswana ranked 23rd in an index of countries that were best suited for foreign investment. However, since then it has lost some of its competitive advantage and as of the early 2000s it ranked 123rd on the same index (Gwebu). In an ever competitive world, Botswana has to have some economic growth that will enable it to compete with other, wealthier countries for outside capital; ROSCAs may help it, at least in part, regain some of that competitive advantage. Because Botswana is not the prime location for outside capital investment, that initial growth will have to come from endogenous sources and Botswana entrepreneurs will have to be primary driver of that growth. Though ROSCAs may not be able to provide large sources of capital funding for all sectors of Botswana's economy, limiting their growth or hindering them in any way could very well

be counterproductive to producing that endogenous source of growth. Though Botswana has improved in recent years in their ease of doing business and the quality of their regulations – which both benefit and support the growth of indigenous credit – they still have a far way to come (Savard 2013). ROSCAs are just one factor that may increase the access to capital to entrepreneurs and the central and local governments should do what they can to foster their growth. Now what that means is under debate.

Elinor Ostrom provided a detailed method for understanding common-pooled resources which can be directly applied to rotating savings and credit association – which are the most common form of informal credit in many areas of Botswana. She outlined a set of seven design principles which are necessary to understanding how and why ROSCAs could formed and why they are sustainable over prolonged period of time. Because they are sustainable, proven to be relatively efficient at distributing capital, and are created given local traditions, norms, and information, they have become serious substitutes for many sectors of the Botswana population. Furthermore, recent changes to the legal framework of Botswana's formal banking industry have increased the relative costs of issuing small loans to individuals which has created a demand for greater informal credit.

Because they have become serious substitutes for formal credit markets and have risen to fill the gap left from decreased supply of formal credit, attempts have been made to regulate, outlaw, and, in some cases, support and extend ROSCAs to a greater number of people. Many policy recommendations have been made by a variety of economists and none have been sufficient in considering the unique institutional design of ROSCAs that make them successful. One option that was presented by Yusuf et. al. (2009) was that the

federal government and central bank could offer insurance programs via small loans that would protect against the threat of default. Though fear of default is an issue that limits the amount of credit a ROSCA can offer, it is necessary in order to prevent excess default rates. Because there is the fear of members defaulting, ROSCAs limit entry into the agreement, mutually monitor the members, and assign appropriate sanctions to ensure that default rates are minimum. An insurance program would, in essence, make members and the ROSCA as a whole make riskier decisions than they otherwise would have. Moral hazard and adverse selection problems would result if the cost of making a bad decision were decreased. A government-backed security agency could, therefore, increase default rates.

Another policy prescriptions involves formalizing ROSCAs in an attempt to make them more available to different sectors of the population that otherwise would not need them for access to credit. This is an attempt to expand the role that ROSCAs play in Botswana's development so that more people and sectors could benefit from their unique institutional design (Okurut and Thuto 2009). While these steps might be helpful in protecting ROSCA members and their assets, it would bring them under a legal system which they currently actively avoid. The additional regulatory costs and external oversight would disrupt the dynamic that makes the institutions robust. Any additional costs or outside interference would increase the cost of operation and violate the design principle that there must be congruence between the rules and local conditions/customs. However, there are certain policy prescription which could be very beneficial to the development of ROSCAs. Simply allowing for the institutions to exist without any attempts to regulate or alter their management would allow for them for them to develop

independently of centralized authorities. Allowing for them to exist without any centralized support or interference, while recognizing their right to organize as institutions could be very beneficial. Though the Botswana government should recognize them, they should also recognize that any governmental attempts to help the institutions, would not be sufficient, and possibly harmful, due to the inherent informational/knowledge problem and administrative limitations of a centralized authority which does not have direct access to the information that the members of the fund have. This policy prescription was Ostrom's seventh design principle.

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