

The journal cover features a white background with a large, abstract geometric shape in the upper right corner, composed of overlapping triangles in dark blue, red, and purple. The journal title 'sc' is in large, bold, black lowercase letters, with four colored circles (red, blue, orange, purple) to its right. Below 'sc' is the text 'STUDIES IN COOPERATIVES' in a smaller, black, uppercase sans-serif font.

**sc**  
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### **About the Journal**

Studies in Cooperatives is a specialist biannual open-access journal focused on publishing peer-reviewed articles on cooperatives and the solidarity economy. The journal is dedicated to publishing high-impact review papers and primary studies.

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**Editorial**

Around the world, cooperatives remain an important form of social and economic organisation for advancing members' collective interests. Underpinned by the values of self-help, self-responsibility, democracy, equality, equity, and solidarity, cooperatives remain significant contributors to the global economy. Enhancing the roles of cooperatives requires robust evidence base on enablers/barriers. This inaugural edition of Studies in Cooperatives brings together five contributions. Three of these focused on cooperatives and the solidarity economy. Nnaeme and Umeh examined cooperative agency as practised by beneficiaries of social grants in South Africa. Their study reveals that access to social grants enabled participation in the solidarity economy. In the third contribution on South Africa, Modise explored the challenges and opportunities associated with cooperative data. Modise argues that there is no central database of cooperatives in South Africa. Rather, different institutions keep cooperative-related data relevant to their activities/mandates, and such data are not publicly available. Modise argues for a coordinated approach in producing a centralised, publicly accessible database on cooperatives in South Africa. Adekanla's study focused on the roles of rotating savings and credit associations in South-Western as alternative financial inclusion and women empowerment in the COVID-19 era. Adekanla argued that Rotating Savings and Credit Association were vital for capital accumulation and business expansion are and, therefore, important in women empowerment in Nigeria. However, the success of rotating savings and credit associations is hampered by default on loan repayment and fund misappropriation. In the final contribution to this inaugural volume, Sanchez-Bajo examined the roles of cooperatives in building a sustainable and peaceful Rwanda. The study revealed that cooperatives are essential agents in building human capability, reciprocity, and reflexive agency through collective action. Sanchez-Bajo argues that this important value of the cooperative sector requires full attention and support in policy planning.

Okem Andrew Emmanuel.

## Solidarity and Development: Cooperative Agency as Practiced by Beneficiaries of Social Grants in South Africa

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### Abstract

South African social grants cover over a quarter of the population in fulfilment of the dictate of the Constitution on social assistance. A huge body of literature on financial intervention has shown remarkable material outcomes in nutrition, schooling, and reduction in poverty and unemployment, among other development index indicators. What has been less known, this paper aims to understand the contribution of social grants to the solidarity economy in Soweto. This aim is operationalised by exploring solidarity and cooperative behaviour among social grant beneficiaries. Giddens' concept of agency is insightful in understanding the impact of social grants in generating and sustaining solidarity in a community where poverty and unemployment are the norms. A qualitative interview of 17 purposefully selected beneficiaries was conducted. Each participant granted three sessions of interviews. Atlas-ti software was used to organise the generated data for thematic analysis. Social grants enabled the beneficiaries to participate in a solidarity economy in the community. Formation and memberships of a *stokvel*<sup>1</sup>, street contribution solidarity, and funeral society were among the avenues. Besides being used as financial capital, social grants served as an enabler of the local economy, given the high poverty and unemployment in the area. This paper highlights the critical role social grants play in the initiation and maintenance of a solidarity economy.

**Keywords:** agency theory, structuration theory, solidarity, social grants, *stokvels*, Soweto, South Africa.

### 1 Introduction

The socio-economic circumstance of South African townships makes the understanding of how residents in those communities manoeuvre limited resources to ensure survival important. The concept of agency of such residents, more especially of social grant beneficiaries, is poorly understood (Nnaeme 2018, p. 43). Giddens' theory of agency as "the capability of individual[s] to make a difference to pre-existing state of affairs or course of events" (Giddens, 1984 p.14) will be helpful in understanding the role of

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<sup>1</sup> *Stokvel* is an Afrikaans words that describes the common practice in South African townships where a group of people with similar purpose come together to contribute money regularly for members.

social grants to the solidarity economy in Soweto. Agency points to “the capacity for social actors to reflect on their position, devise strategies and take action to achieve their desires” (Bakewell, 2010 p.1964). The phenomenon represents the agents’ capacity to perform purposeful actions to actualise a better socio-economic reality (Oosterom, 2016, Giddens, 1984). This notion of agency as the capacity to influence one’s state of life was corroborated by Harvey (2002), Bandura (2001), and Sen (1999), who linked the concept with bringing about purposeful transformation to one’s current state of affairs. For instance, Bandura (2001) posits that agency resonates with actions that enable human beings to be both producers and products of social realities, not just onlookers or animated conveyors of social realities around them. It reflects an agent’s capacity to channel actions toward overcoming constraints (Oosterom, 2016 p.19). However, Barber (1991) and Archer (1982) criticise structuration theory (ST) for “elegant compromise” of agency and structure irrespective of how societies work. Archer (1982) avers that ST is non-propositional in that it does not indicate how the balance between the two constructs manifests in specific contexts. Furthermore, Archer suggests that the two terms are conflated with agency being privileged by giving more power to the capacity of agents at the expense of structure, a view echoed by Barber (1991).

As a theoretical concept, agency has been identified at two levels: individual and community (Bandura, 2001). At the individual level, agency is seen as the capacity of a person to act purposefully in ways that would lead to the transformation of the current socio-economic situation. The individual primarily relies on themselves and limited available resources to ensure the betterment of their circumstances. At the communal level, agency is exercised collectively towards realising a better socio-economic condition. In this instance, agents appreciated the limitations of individual endeavors in tackling challenges that are beyond them. Hence, they unite their resources and capabilities in support of each other. Agency at the communal level is the focus of this paper but not in isolation from the individual level of agency. In line with the theory, social grants are understood as enabling resource provided by the state to its citizen for mitigation of effects of poverty. Giddens’s theory is a guide in understanding how the resources was used for solidarity economic in Soweto.

South Africa’s constitutionally guaranteed and publicly-funded social assistance programme is an example of a new generation of innovative social protection strategies that have emerged in low-and middle-income countries in Africa, Asia and Latin America (Patel, 2015, World Bank, 2015, Barrientos, 2013). In South Africa, an institutionalised welfare policy for white people co-existed with a residual welfare system for black people (Seekings, 2000, van Niekerk, 2003). It was expanded after 1994 to gradually right the wrongs of past institutional policies that perpetuated and maintained “... shocking levels of income poverty” (Seekings and Nattrass, 2015 p.3). The context of high-income poverty amid other negative legacies of apartheid prompted the

democratic government to widen social welfare provision in line with Section 27 (c) of the 1996 Constitution, which upheld the right to social security and social assistance, in particular, for those who are unable to provide for themselves (Republic of South Africa, 1996).

In light of the drastic rise in poverty and unemployment, in most households, social grants become the sole source of income (Schenck and Blaauw, 2011). The Constitution guarantees financial intervention for those unable to meet their needs, reducing high poverty rates in the post-apartheid era (World Bank, 2018). According to the World Bank in 2014, South Africa halved the number of its citizen in extreme poverty through the provision of social grants and other social assistances. The financial intervention contributed in reducing from 34% to 16.5% the number of citizens living on US\$1.25 per day or less (World Bank, 2014, p.3). This finding corroborates previous qualitative findings (Samson et al., 2004) a decade before that social grants have impact in poverty reduction in South Africa. The further expansion of social grants to over 40% of the population is a clear testament to the pandemic of poverty and unemployment prevalent in most townships. However, the value of social grants is insufficient to meet even the basic needs (Zembe-Mkabile et al., 2018), as it is established that the fund account for 10% of the consumption needs of the people in poverty in low-income countries. Cash support represents 21% and 37% of the consumption needs of the beneficiaries in lower-middle and upper-middle income countries, respectively (World Bank, 2015 pp.2-3). The question arises as to how beneficiaries bridge the gap between the grants and their needs since they are unemployed and in poverty. Building on some beneficiaries' exercise of agency at an individual level (Nnaeme 2022a; 2022b; Nnaeme 2021; Nnaeme et al., 2021abc; Nnaeme et al., 2020), this paper explores the exercise of agency at a communal level. This paper explores the role of social grants in forming cooperatives that enable residents of Doornkop in Soweto to organise resources for the betterment of their members.

## 2 Materials and methods

The narrative research design explored solidarity and cooperative activities among social grant beneficiaries in Doornkop. It is a design that allows adequate consideration of participants' socio-economic contexts (Polkinghorne, 1995) and encourages an exploration of their lived experiences expressed through stories (Clandinin et al., 2017 p.90). It ensures the production of knowledge that is cognisant of the 'situated, partial, contextual, and contradictory nature' of human experiences represented in stories (Hendry, 2007 p.489). The unique importance of this design rests on the notion that 'a storied narrative is the linguistic' medium that gives both a glimpse into and maintains the complexity of human experience (Polkinghorne, 1995 p.7). The design appreciates that human beings are not simply passive conveyors of socio-economic affairs 'but have certain inner capacities' (Garrick 1999 p.149) to unite for a particular course.

The design application allowed for a contextually informed understanding of the contribution of social grants to the solidarity economy in Doornkop, Soweto. The study area is one of the poorest wards in the City of Johannesburg. The community of Doornkop, ward 50, is the 10th most deprived ward in the City of Johannesburg (Patel 2015). The continued existence of poverty despite being among the highest beneficiaries of social grants shows the insufficiency of the monies received amidst high rates of poverty and unemployment (Nnaeme et al., 2021). To realize the study aim, individual in-depth interviews were conducted with 17 purposefully selected participants based on predetermined selection criteria: beneficiaries of cash transfer programs, residents of Soweto, and engaged in a legitimate informal economic activity. Of the 17 participants, 10 were females, and seven were males. Three interview sessions per participant were conducted until data saturation was reached. The interviews created an avenue for the co-creation of knowledge between the researchers and participants, whom Henning et al., (2004) termed 'spokespersons of the topic of inquiry.' The participants were made aware of the study's aims, assured confidentiality, and invited to give informed consent. Participants were given pseudonyms to protect their identities.

In the first interview session, we focused on initiating and building a trusting relationship with the participants. The second session allowed for an exploration of raised issues and the identification of emerging themes. This type of exploration is recommended by Knox and Burkard (2009 p.7) and Polkinghorne (2005), among others. The third session allowed us to strengthen emerging themes (Henning et al., 2004) by probing further and checking if the content of the interviews was accurately understood and consistently captured. In deepening and consolidating participants' responses, the observation technique was used during the interview sessions in an attempt to '...fill gaps that are inevitably left by interviews' (Henning et al., 2004, p.100). Observation data shed light on participants' responses and their facial expressions, gestures, tone, clothing, and other non-verbal indications (Polkinghorne, 2005 p.143). A total of over 45 individual interview sessions were held with the participants, who were all beneficiaries of the three main types of social grants (Child Support Grant, Disability Grant, and Old Age Grant).

Thematic narrative analysis (TNA) techniques were used to analyse the generated data. Atlas. ti software program was used to systematically analyse the data (Babbie, 2016). The TNA was used, especially the step-by-step procedure in 'identifying, analysing, and reporting patterns (themes) within data' (Braun and Clarke, 2006 p.79). The data were classified into themes in direct response to the study question. The limitation of TNA we were mindful of was the techniques' dependence on a recollection of experiences and the likelihood of selective remembrance of incidents (Nnaeme et al., 2020; Lieblich et al., 2011). Credibility-enhancing aids such as research diary, free association,



and follow-up visits were used. Research diaries help with the trustworthiness of the research process and findings.

### 3 Findings

In the demonstration of social grants beneficiaries' practice of cooperative agency in Doornkop Soweto, three themes were identified. The three themes include: formation and membership of *stokvels*; street contribution solidarity membership; and funeral society membership. The central role of social grants in daily living and community participation was an overarching theme for all the participants.

Given the vulnerability context in which participants lived, they devised and used various financial management mechanisms such as *stokvels* which were popular among most participants irrespective of age, gender, and grant type. *Stokvel* is a savings collective of members who regularly contribute an agreed amount, and the members take turns receiving a lump sum payment of their contributions (Nnaeme et. al., 2020 p.4). None of the *stokvels* to which participants belonged were registered at the time of the study. However, they function and operate as a cooperative, which provides a platform for group collection of resources for the good of its members. Interestingly, their popularity and effectiveness in South African townships raise a critical question regarding whether registration is the key characteristics of cooperative. *Stokvels* were locally formed and managed among friends with a common interest to save, and rotate the payouts among themselves on a monthly or weekly basis. Rotating credit and savings schemes are well documented in South Africa and in the southern African region (FinMark Trust, 2018). Participants were belonged to various forms of *stokvels* that depend on the amount contributed, the period of its contribution and the purpose of the *stokvel*. The largest *stokvel* group existed among mainly female pensioners who contributed R1 000 monthly, followed by R500. Others contributed R350, R200, R100, and R50 weekly or monthly, depending on their ability to contribute. *Stokvels* with smaller amounts mostly had beneficiaries of the CSG who received a small grant value compared to pensioners and persons with disabilities who received approximately two-thirds more than the CSG beneficiaries. However, Nomusa, a 43-year-old beneficiary of three CSGs belonged to a R1 000 *stokvel* to which she combined the grants she received for three children to contribute a higher amount. According to the participants, *stokvels* did not yield interest nor cost any money. Members only received what they had contributed when their turn came around to receive the payment. The two main reasons for joining a *stokvel* were first to raise capital for a business, a big project or purchase; second, to share in the groceries bought at the end of the year.

Two of the participants initiated *stokvels* among friends and fellow church members. The initiation and membership were connected to a participant becoming a social grant beneficiary. Jolly narration of how and why she formed a *stokvel* is insightful:

*I approach some other people so that we can come together to do stokvel. I was the person that started the stokvel. For instance, I have R10000 somewhere now, which I have to go and give to a member who is supposed to get the money for the month. At that time disability grant was R1300. Then it was possible for me to contribute R1000, the agreed amount every month. At that time my husband was making some money that we usually use to buy food to eat. So I took my monthly disability grant for stokvel with that group. I think we were six members then. When I got my R6000, I started business. First of all, I bought material and started producing shoes and selling them. I still got shoes in my room. At a stage I got tired of making shoes, when you get older you get tired. I stopped making shoes and started something else.*

When she became a pensioner in 2016, she initiated another *stokvel* of ten women pensioners who contribute R1000 each month from their pension. She wanted to pull all of them into business as she went in search of what they can sell and make profit individually. In her words:

*I went to a factory in Doornfontein where they are making All Star takkies (a brand of sneakers), I talked to the man in-charge. I told him that I am a business-woman, that I will like to start selling tekkies. So I asked him if he can sell to me at stock price since I am also selling. He agreed with me. So I came back and talked this stokvel members. I said to them that we can buy All Star tekkies at a cheaper prices and sell to make profit. They agreed. So they gave me money, I went to the factory and stocked. When I returned we shared the tekkies among us so that everybody will start selling individually what they have got.*

The business was for individual members of the *stokvel* to sell their share of tekkies and make a profit for themselves. However, after a few days, some started complaining that they are shy to sell theirs. Others sold theirs and made a profit. Jolly said that she eventually took from those who could not sell theirs and balanced their capital in the business. Similarly, Mandi, a 70-year-old pensioner, described how she formed a *stokvel* with her fellow church members when she began receiving social grants. According to her:

*After I became a pensioner I invited five of my church members who are also pensioners like me. I said to them that we must start something that will help us to save money. I spoke to them and they agreed and we said that we must be only six. All of us live around here and attend the same church, St Paul Apostolate Church. We contribute R1000 each month from our pension money and give it to a person. Next month we contribute for another person. When it got to my*

*turn, I used the money to start making back rooms for rent (which was already completed by the time of the interview).*

Both Jolly and Mandi utilised their positive community reputation in initiating *stokvels* geared toward encouraging members to save and improve their socio-economic conditions. Nondumiso is the only participant involved in grocery *stokvel* where members contribute R350 every month, and at the end of the year, they use the money to buy groceries in bulk and share among themselves. The link between receipt of social grants and *stokvel* formation and membership is common among the participants.

The second theme is street contribution solidarity, to which most participants belonged and contributed from their social grants. Street contribution solidarity is a term used to describe the common practice among participants in the same neighbourhood on how they support each other and the role of social grants in such practice. Doornkop is mainly an African township made up of people from different ethnic backgrounds who formed various solidarity groups aimed at helping one another. The most prominent is street contribution solidarity, where members support their neighbours in times of bereavement. Jolly initiated her street contribution solidarity activities when needed due to the high cost of funerals. According to her:

*I belong to our street group that contributes R50 for meat and R30 for groceries once a member dies. I am the person that started the group for our street because I found out at times that there is no food or money in the house when somebody dies. So I was convinced that we can form the group so that the family cannot struggle during the funeral in looking after people.*

In another street, similar contribution was for only women. According to Gladys, “whenever there is a funeral we contribute something for the family. We are a group of women around here, we use to contribute R20, but now it is R40 for the family once anybody dies. We contribute only when there is a funeral in the family of the members only. The money is used to buy groceries for the funeral. The groceries are for feeding the people that come around during the funeral.”

The third theme is funeral society membership. Membership of a funeral society is another solidarity grouping that was prevalent among participants. For instance, Patience narrates the operation of the society in as follows:

*Besides street solidarity group, I also belong to a funeral society we are 45 women members and we have 45 items. So each person has to buy an item each time anybody covered in the society dies. For example the last time somebody died one month ago, the leader called me and told me that it is my turn to buy item number*

*5 which is 12.5kg of maize meal. I did that. She has to call all the members and tell them their number of item to buy. She tells us the number of item and we know what that number represents. After we buy those things we send it to the family that lost someone. In that society we were allowed to give ten names of our family members to be covered. If any of the ten people passes away we will contribute for that member.*

In summary, receipt of social grants was demonstratively instrumental in participants' active engagement with others through membership associations aimed at improving their socio-economic positions in the community. In other words, social grants were pivotal in initiating and sustaining solidarity among participants in Doornkop, Soweto.

#### **4 Discussions**

Through the theoretical lens of Giddens' theory on the agency, the participants transformed constitutionally guaranteed financial assistance into an instrument through which they collectively sought to better their lives. Formation and membership of *stokvel*, street contribution solidarity, and funeral society, which most joined once they became beneficiaries, can be interpreted as attempts "to make a difference to pre-existing state of affairs" (Giddens, 1984 p.14) at a communal level. This is a mark of agency at a group level since it demonstrates participants as "social actors" who reflect on their socio-economic conditions, and decides on appropriate actions to ameliorate the negative consequence (Bakewell, 2010 p.1964). Though the purposeful action to initiate various solidarity groupings may be individual, the need to cooperate with others is an acknowledgement of realities and an attempt to utilise economies of scale. As noted above, receiving social grants became a catalyst for forming multiple communal cooperatives aimed at supporting and growing community members faced with high poverty and unemployment. The social grants enabled them to become social actors who, in a little way, shape their circumstances.

The question is whether the formation and membership of *stokvels*, street contribution solidarity, and funeral society qualify as cooperative. In the study area, where most residents engage in survival activities, cooperative as a form of unification of resources is common. It may not be formally formed, but it actualises its purpose of saving and generating higher capital for a project or business. Through the use of social grants, the participants exercised agency at a community level. As social actors, the initiators of those groups appreciate the enormity of the socio-economic challenges they face. They took it upon themselves to provoke agency in others through persuasion to become members of a *stokvel*. The participants practised cooperative agency as they know it and established mechanisms to grow together as members of the group.

The findings are exemplar operationalization of the ICA definition of cooperative as *an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise* (ICA 2016). Also the findings demonstrated solidarity and self-responsibility, social responsibility and care for members and other, qualities identified by ICA as cooperative values. The formation, membership, and the operations of the *stokvels*, which people engaged in after becoming beneficiaries of social grants, point to the voluntary, open, democratic, and economic participatory nature of their association. These are cooperative principles. This study contributes by demonstrating the importance of social grants in enabling the exhibition of values and principles of cooperative.

## 5 Conclusions

This study has highlighted the solidarity impacts of social grants by pronouncing on the influence of the fund in the formation and membership of *stokvel*, street contribution solidarity, and funeral society. In other words, the study has demonstrated the key role of financial assistance in promoting the exercise of agency at a communal level amidst disturbing levels of poverty and unemployment. By contributing to understanding how social grant beneficiaries practised cooperative agencies in Doornkop, this study has extended the impacts of the financial intervention beyond their primary intended outcomes. In light of the finding, the study advocates for a policy accentuating this grassroots innovative capital and community-building mechanism. This is because the study participants showed that social grants could serve as the grease that lubricates the solidarity economy amidst high poverty and unemployment in the area. Instead of being viewed as a drain on the fiscus, this paper highlights the critical role social grants play in the initiation and membership of *stokvels*, street contribution solidarity, and funeral society, and in promoting solidarity economy in general. This study raised the question of whether registration is what defines cooperative or not. While the organisations were not registered, members had “a common or shared enterprise” for which they joined and participated. Further research will need to explore the prevalence of the link between social grants and membership of *stokvel*, street contribution solidarity, and funeral society. This will also reveal the potency of popularizing such a mechanism in dealing with the limited capital, which is the bane of the informal economy.

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### Conflict of Interest

The authors declare that there is no competing interest.

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## **Multi-criteria analysis for sustainable decision making: Opportunities for waste and recycling SMMEs (including cooperatives) in KwaZulu-Natal**

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### **Abstract**

This paper reports on a study for the KwaZulu-Natal (KZN) Department of Economic Development, Tourism and Environmental Affairs (EDTEA) by the Council for Scientific and Industrial Research (CSIR) to identify and maximize opportunities in the waste and recycling sector for “Small, Micro and Medium Enterprises (SMMEs) owned by women, youth, the disabled and previously disadvantaged” in the province. Opportunities from various waste streams as resource potential for SMMEs and cooperatives are presented, this is part of a KZN NCPC Industrial Symbiosis Programme in South Africa. The overall aim of the research project was to identify opportunities for SMMEs and cooperatives in KZN to exploit under exploited waste streams. This paper presents the findings for the first objective of the project namely, identifying waste streams that could provide income generating opportunities for SMMEs. This paper outlines the approach and methodology taken to prioritise a single waste stream that could provide income generating opportunities for SMMEs (including cooperatives) in the province. A multi-criteria approach was followed whereby waste streams were assessed based on various criteria: economic value; the amount and distribution of waste in the province; the type of waste streams; the availability and ease of roll out of technology options; ease of surmounting barriers to entry; market types and market availability; alignment and contribution to improving the sustainable development goals; opportunities for symbiotic relationships or collaborations. After assessing the qualitative and quantitative considerations, organic waste opportunities were determined to be the most ubiquitous and promising (with low barrier technology options for implementation) followed by bottom ash, as well as construction and demolition waste in the KZN province. These waste streams remain relatively unexploited. Composting is the recommended technology to treat the organic waste fraction due to the relatively small up-front investment required for set up, scalability, and relatively low skill requirements. In certain circumstances simple off the shelf anaerobic digestion technologies for other organic fractions could also be used. A top-down approach to SMME development is not advisable, therefore an important recommendation is that SMMEs

(in particular cooperatives) which are already experienced and/or have a proven track record in composting should be considered for implementation.

Keywords: Composting, Cooperative, KwaZulu-Natal, Multi-Criteria Analysis, Organic Waste, SAWIC, SMME, Social Symbiosis, Sustainable Development Goals.

## 1 Introduction

### Background

The CSIR) was tasked with identifying opportunities in the waste and recycling sector for '(SMMEs) owned by women, youth, the disabled and previously disadvantaged individuals' in the KwaZulu-Natal (KZN) province. The prioritised waste streams needed to be ubiquitous (i.e., known to be available in every municipality of the KZN province) and be relatively underexploited. These were the overall aims of the project initiated through the KZN Department of Economic Development, Tourism and Environmental Affairs (EDTEA) and overseen internally in the CSIR by the National Cleaner Production Centre (NCPC).

Decision making in waste management is a complex process because multiple stakeholders are often involved. This can sometimes include the different levels of government (like national, provincial, and local), different communities, and stakeholders in the private sector. This is further complicated by different waste collection routes, transfer station locations, treatment strategies, treatment plant locations, and sometimes a desire for energy recovery. Procedures that guide and support decision making for individuals or groups to achieve specific objectives to the very best discussion possible given all the variables are known as decision support frameworks (Soltani *et al.*, 2015).

Solid waste management was further complicated during the Covid-19 pandemic. A nation-wide lock down was announced by the president on the 23<sup>rd</sup> of march 2020 (The Presidency, 2020). The lockdown mainly included restrictions on movement to curtail the spread of Covid-19. With the restrictions to movement came challenges in sourcing data for decision making purposes. Stakeholders were restricted to their homes and all except essential workers were allowed to travel to their normal places of work. This presented a further challenge to gathering information or data.

The overall project was designed around three phases namely: 1) the decision-making process to identifying a ubiquitous and priority waste stream (the subject of this paper), 2) identifying sources and quality of those waste sources and 3) the development of an implementation plan for small, medium, and micro sized enterprises (SMME) and cooperatives. This paper reports on the first phase of this project, namely the process followed to identify the priority waste streams. The selection of the priority waste streams

was key to maximizing job opportunities for SMMEs. The client (EDTEA) was explicit in that the barriers to entry should be sufficiently low for the implementing agent to be able to roll out SMMEs in every municipality which were able to exploit a relatively under exploited waste stream. It was critical that existing waste streams or material flows which are already being utilised by other SMMEs, vulnerable groups, or other established entities be excluded, to avoid disrupting existing activities. The intention was to identify underutilised waste streams. It became apparent that the first task would be to identify waste streams in every municipality which ended up at landfill and were therefore under exploited. This is aside from the mainline recyclables (DEA, 2012) like paper, plastics, glass, and tins which tend to be cherry picked by the informal sector or recycling companies, including SMMEs, due to their market value.

### **Multicriteria Analysis**

Multicriteria Analysis (MCA) is a useful tool in decision making (Alavi, Tavana and Mina, 2021; Ossei-Bremang and Kemausuor, 2021; Vlachokostas, Michailidou and Achillas, 2021). **Table 3** outlines the criteria used for the Multicriteria Analysis (MCA) process. A description of how these criteria were utilised in this project including the prioritisation of waste streams are presented in the methods section below.

### **Type of Waste Streams**

The waste types are classified as either being of a *general* or *hazardous* nature. Typically, the more complex the waste type, the more complex its management, including capital investment of resources required (technology, permits, licences, handling costs etc) to process these waste streams (DEA, 2011). SMMEs typically will undertake simple processing, which they are comfortable with and have an aptitude for. Although it is acknowledged that some innovative SMMEs are adept at exploiting complex and niche markets, this is generally not the case for all SMMEs (Scheinberg *et al.*, 2010). More complex tasks (like processing complex waste for instance) require complex skills, and larger budgets for capital infrastructure. This can be very expensive for an SMME or cooperative which may have less know-how in managing these complex waste streams. Thus, all waste streams which were classified as *hazardous* were excluded from consideration.

### **Impacts on Existing Livelihoods**

This selection criterion considers the impact that undue competition from a newly formed waste SMME could have on already existing SMMEs or waste pickers. This would provide an unfair advantage to the new market entrants, especially if this was supported through new SMME's nurtured with public funding. The additional challenge is that the new entrant plus the existing SMMEs or waste pickers would be inadvertently competing for the same waste streams. It is well documented by other authors that in some cases the formation of a new group of market entrants can displace

existing players (especially existing SMMEs and waste pickers) from earning their livelihoods (Gugssa, 2012; Chikarname, 2014; Lekhanya, 2016).

Different grades of plastic waste (see “General: Plastic: Polypropylene” in Table 3) are known to be collected by the informal sector. This forms a significant part of their livelihood (FAO, 2021; Laxmi Haigh et al., 2021). It is also known that recovery of plastics does take place at landfills with poor access control in the KZN province. It is nevertheless acknowledged that this end-of-pipe solution is not a suitable scenario. To avoid competing with these informal waste pickers livelihood, which is often linked with small buy back centre SMME, it was decided to exclude all plastic waste from this project’s consideration. Similarly, “General: Construction and demolition waste” is also known to be widely distributed in the province (but underutilised). However, municipalities are often short of cover material for proper management at their landfills. Construction and demolition waste can be a suitable substitute to sand and gravel for covering the existing working face of an active landfill (Nell et al., 2022).

“General: Municipal waste” is well distributed in the province and it is known that there are also large volumes of this waste stream. This is disposed of to landfill sites commingled and contaminated with different other wastes and recyclables, separation at source typically being poorly implemented. This is also true of waste from the commercial sector (i.e. “General: Commercial and industrial waste”) which is similar in character to municipal solid waste (DEA, 2012; Swanepoel et al., 2012; Mutezo, 2015). The recyclables from municipal and commercial and industrial waste are harvested by the informal sector or SMMEs at kerb sides and many landfill sites.

**Table 1: Scoring criteria used**

No	Criteria	Organic Waste	SCORE
1	Availability of Technology	High – Simple Tech options available	3
		Medium	2
		Low – Only complex Tech options	1
2	Barriers to Entry	No Known barriers	3
		Low barriers to entry	2
		High - Considered insurmountable barriers	1
3	Existing markets	National or international	1
		Regional	2
		Local	3
4	Alignment with SDGs	GOAL 1: No Poverty	1/17
		GOAL 2: Zero Hunger	1/17
		GOAL 3: Good Health and Well-being	
		GOAL 4: Quality Education	
		GOAL 5: Gender Equality	1/17
		GOAL 6: Clean Water and Sanitation	1/17
		GOAL 7: Affordable and Clean Energy	1/17
		GOAL 8: Decent Work and Economic Growth	1/17

	GOAL 9: Industry, Innovation, and Infrastructure	
	GOAL 10: Reduced Inequality	
	GOAL 11: Sustainable Cities and Communities	1/17
	GOAL 12: Responsible Consumption & Production	1/17
	GOAL 13: Climate Action	1/17
	GOAL 14: Life Below Water	1/17
	GOAL 15: Life on Land	1/17
	GOAL 16: Peace and Justice Strong Institutions	
	GOAL 17: Partnerships to achieve the Goal	1/17
	Opportunities exist	2
5	Industrial Symbiosis Opportunities? No opportunities	1
	Impacts negatively on existing relationships	0

It was decided not to ‘cannibalize’ these valuable waste streams, even though it was likely that more cover material than the municipalities could utilize is likely available. Similarly due to the recovery of main line recyclables such as plastics, paper, and cardboard, these were excluded from the selection process and are not considered further. The project adopted a social symbiotic (Akrivou *et al.*, 2022) approach was taken in which the livelihoods of other stakeholders was considered (i.e., pickers and SMME which may be dependent on plastics for their survival as well as the municipalities) through this project.

### Availability and Ease of Roll Out of Technology Options

The type of technology is an another criterion to consider, especially if expertise of how to operate equipment (or technology) is not already inherent or present within the SMMEs (Kirchherr *et al.*, 2018). The selection of waste streams with a preference for general rather than hazardous waste categories will to some extent mitigate this, as general waste streams typically require less advanced technology to process. Learning complex new skills requires expensive investments (in time and costs) to deliver quality goods to market. In essence, the technology required to add value to the waste streams needs to be simple enough to enable uptake by low skill or inexperienced SMMEs and to deliver the required outputs.

### Barriers to Entry

For some beneficiation opportunities, there may be significant barriers to entry which need to be overcome to enable development and commercialisation. In cases where there are significant barriers to entry, it may be difficult for new SMME entrants. Two main aspects considered under this criterion are Legislation and Financial barriers. From a legislative perspective, the need for environmental impact assessments, registration (or permitting) of a waste facility, or the associated compliance requirements could apply especially if the volumes of waste processed are above cut off thresholds. For the financial barriers capital outlays required for licencing, availability of a clean

feedstock or processing costs could be significant. The waste stream to be selected or prioritised should have minimal barriers to entry for new SMME entrants.

### Potential Market Types

Availability of markets is critical for the establishment of a successful and flourishing SMME. Transportation is a significant cost component (up to or even above 50%) of waste management activities and is therefore a critical factor in the success or failure of an SMME (Olawale and Garwe, 2010; Business Environment Specialists, 2014). The transport costs must be balanced or considered with the relative value of the material being transported. Therefore, it makes sense that processing of waste should ideally be done as close as possible to the source of generation. The final SMME processed waste product is likely to be of higher value compared to unprocessed waste, the end market should also ideally be in close proximity to bring down costs. Distance to potential markets will be used to assess the waste value adding opportunities for SMMEs. If the waste is produced far away (i.e., another province, national, or international), this could potentially be detrimental to the utilisation of the waste stream by the SMME. For instance, in order to reduce transport costs the producer of the waste can also be the market for the product(s) or by products (electricity in the form of gas etc. can be utilised in-house). This creates a “win-win” scenario that reduces transport and other transaction costs. This can also be extended to incorporate other institutions or organisations operating within a local area.

### Alignment to Sustainable Development Goals (SDGs)

Sustainability objectives in the form of the SDGs (i.e., environmental, social, and economic impacts) were considered and evaluated based on the team’s collective experience. The final choice of waste stream should be evaluated based on how the project will contribute towards supporting the SDGs (RSA, 2019b).



Figure 1: The Sustainable Development Goals<sup>2</sup>

<sup>2</sup> <https://www.un.org/development/desa/disabilities/envision2030.html>

## **Potential for Symbiotic Relationships**

The opportunity to leverage symbiotic relationships was considered. Opportunities to develop mutually beneficial relationships may include for example a structured Broad-Based Black Economic Empowerment program (RSA, 2013). This could be between a large private company or a public sector institution (i.e., schools or hospitals) which produces a waste stream and an SMME. The waste producer can offset its disposal costs (including its transportation and landfill gate fees) by diverting this waste to a local SMME. The SMME could benefit from mentorship, access to a 'free' or subsidised source of raw material to use in its processes. This symbiosis between a manufacturer or industry and an SMME could have multiple benefits and widespread impact if the waste stream in question is easily available in the province and well distributed.

A methodology and approach to the research study are presented in section 2 of this paper. This includes some context in utilising a multicriteria approach. This is followed by some results and a discussion in section 3. Section 4 outlines the main conclusions of this study.

## **2 Methodology And Approach**

### **Approach followed**

A mixed methods data collection approach was followed involving both quantitative and qualitative techniques. Firstly, quantitative data was sourced from SAWIS for an understanding of the types and distribution of different waste streams finding their way to landfill sites in the KZN province as reported by the different municipalities. A report of wastes disposed per municipality was generated for the year 2019, this was summarized per waste type. It was found that only 18 of the 43 municipalities reported waste disposal data to SAWIS in 2019. Secondly, several criteria were considered of importance to ensure that the waste type prioritized was able to provide opportunities for '(SMMEs) owned by women, youth, the disabled and previously disadvantaged'. The criteria were based on the amount and distribution of waste in the province; the type of waste streams (including if it was general versus hazardous waste). Lastly, a scoring matrix was applied based on the availability and ease of roll out of technology options; ease of surmounting barriers to entry (including legislative, compliance and financial barriers); potential market types and market availability; alignment and contribution to the SDGs; opportunities for symbiotic relationships and impacts on existing livelihoods.

### **SAWIS Data Analysis**

Despite 2019 being chosen as the year for analysis, the project team decided that it would be prudent to also examine data for at least 3 years (i.e., for 2019, 2018 and 2017) in case some waste types were missing, which might be the case if just one year was considered.

Data for KZN (for 2019, 2018, and 2017) was then downloaded from SAWIS in the year of the project, 2019<sup>3</sup>, all analysis was done in MS Excel. **Table 1** below provides a summary of these waste streams from the SAWIS database for 2019, 2018 and 2017. The facilities represent the entities where the waste was disposed i.e., the landfill sites in each municipality. Most municipalities small municipalities typically report disposal at a single facility except for the eThekweni Metro (i.e., there were five facilities disposing “General: Municipal waste”), Newcastle (KZN252) had two facilities reporting “Hazardous: Liquid and sludge inorganic waste” and uMhlathuze (KZN282) had two facilities reporting “General: Construction and demolition waste” for 2019. Only 18 of the 43 local municipalities and one metropolitan municipality in KZN reported data to SAWIS for the three years under investigation.

**Table 2: Waste types based on facilities & mass reported (Tons/Annum) per year (SAWIS)**

Waste Types	2019		2018		2017	
	Facilities	Tons	Facilities	Tons	Facilities	Tons
General: Municipal waste	19	641,047	17	773,161	16	695,911
General: Construction and demolition waste	11	441,503	9	674,425	9	668,487
General: Commercial and industrial waste	8	206,701	8	278,517	8	288,379
General: Metals: Ferrous metal	2	1,674,032	2	7,560	2	9,151
General: Other	8	109,234	5	185,577	7	171,836
General: Organic waste	5	196,563	3	298,047	3	318,027
Hazardous: Liquid and sludge inorganic waste	5	131,796	4	124,611	5	131,761
General: Organic waste: Garden waste	10	47,992	8	52,705	8	61,555
General: Slag: Ferrous metal slag	2	108,781	2	232,391	2	167,832
Hazardous: Solid inorganic waste	3	37,732	3	57,338	2	124,691
General: Bottom ash	5	45,537	10	22,769	4	21,975
General: Slag: Non-ferrous metal slag	1	194,846	1	100,593	1	215,996
Hazardous: Miscellaneous	3	13,723	3	38,902	2	75,461
Hazardous: Bottom ash	2	22,260	2	45,846	3	35,116
General: Metals: Non-ferrous metal	2	167,860	1	959	1	686
Hazardous: Liquid and sludge organic waste	3	9,627	2	24,198	2	19,943
Hazardous: Fly ash and dust from miscellaneous filter sources: Fly ash	2	10,661	2	31,120	1	9,786
Hazardous: Solid organic waste	3	2,661	3	3,902	2	16,626
Hazardous: Mineral waste: Refractory waste	1	76	2	12,243	2	16,262
Hazardous: Solids containing halogens and/or sulphur	1	5,230	1	12,793	2	5,454
Hazardous: Spent pot lining (organic)	1	3,650	1	10,099	1	9,399
Hazardous: Waste oils: Waste oil	2	3,896	1	2,665	2	4,045
General: Organic waste: Food waste	5	204	3	113	3	4,108
General: Slag: Other	1	12,298	1	9,139	0	0
General: Sewage sludge	2	338	2	4,921	3	499
Hazardous: Lead batteries	1	6,371	1	13	1	11
General: Plastic: Polypropylene	0	0	0	0	1	14,500
Hazardous: Mineral waste: Foundry sand	0	0	1	360	1	6,547
General: Organic waste: Wood waste	1	2	1	2,304	1	1,588
General: Mineral waste: Refractory waste	1	9,754	0	0	0	0
Hazardous: Asbestos containing waste	2	599	2	57	2	235
General: Mineral waste: Foundry sand	2	1,068	1	319	0	0
Hazardous: Health care risk waste: Infectious waste and sharps	1	764	0	0	1	777
Hazardous: Mercury containing waste: Solid waste containing mercury	0	0	1	0	1	1,285
General: Tyres	1	24	2	36	3	339
Hazardous: Health care risk waste: Pathological waste	1	1,631	0	0	0	0
Hazardous: Bituminous waste	1	13	1	32	2	279

<sup>3</sup> It is important to note that the database is sometimes revised as more accurate data is incorporated for some of the previous years or indeed even the current period.



Waste Types	2019		2018		2017	
	Facilities	Tons	Facilities	Tons	Facilities	Tons
Hazardous: Solvents without halogens and sulphur	0	0	1	19	2	216
Hazardous: WEEE: Entertainment and consumer electronics and toys, leisure, sports and recreational equipment and automatic issuing machines	0	0	1	0	1	213
Hazardous: Liquids and sludges containing halogens and/or sulphur	1	11	1	12	1	84
General: Plastic	3	69	0	0	0	0
Hazardous: Health care risk waste: Chemical waste	1	87	0	0	1	1
General: Brine	0	0	2	83	0	0
General: Fly ash and dust from miscellaneous filter sources	1	124	0	0	0	0
Hazardous: Sewage sludge	0	0	0	0	1	91
General: Plastic: Other	1	50	0	0	0	0
Hazardous: POP waste: Other POP-containing waste	0	0	0	0	1	44
Hazardous: Mineral waste: Other	0	0	0	0	1	33
General: Metals	3	8	0	0	0	0
General: Paper	2	10	0	0	0	0
General: WEEE: Mixed WEEE	1	14	0	0	0	0
General: Glass	1	12	0	0	0	0
Hazardous: WEEE: Office, information, and communication equipment	1	0	1	2	1	0
Hazardous: WEEE: Lighting equipment	0	0	0	0	1	4
Hazardous: Mixed batteries	0	0	1	0	1	1
General: WEEE: Small household appliances	1	2	0	0	0	0
Hazardous: Mercury containing waste: Liquid waste containing mercury	0	0	0	0	1	1
General: Plastic: Polyethylene terephthalate	0	0	0	0	1	1
General: Plastic: Polyvinylchloride	1	1	0	0	0	0
General: WEEE: Lighting equipment	1	1	0	0	0	0
Hazardous: Manganese dioxide and alkali batteries	0	0	0	0	1	0
<b>TOTAL</b>	<b>136.0</b>	<b>4,108,860</b>	<b>113.0</b>	<b>3,007,830</b>	<b>118.0</b>	<b>3,099,232</b>

The relative tonnages provide some context in terms of the annual masses reported. While this approach assumes that all waste being disposed of to landfills is reported this is known not to be the case (DEA, 2018). Also, not all of the KZN landfills are licensed (Gerdman, 2018; Packaging SA, 2018), nor do all of them have functional weigh bridges, thus compromising the accuracy of the reporting into SAWIS. This adds an element of uncertainty to the SAWIS data which has also been previously reported by other authors (Chagunda, 2019; Williams-Wynn and Naidoo, 2020). Nevertheless, the SAWIS database provides some useful insights into the type of wastes finding their way to landfill which can be aggregated at a provincial or national level. The above uncertainties and data gaps were mitigated based on the project teams experience of conducting seasonal waste characterisation studies within several other metros, small KZN municipalities and having access to waste characterisation data from other studies conducted in South Africa.

The data analysis is presented in Table 2 as follows: The average number of facilities reporting was calculated to account for the year-on-year variation (column A). Similarly, the average tonnages reported over the three-year period was calculated and reported in column B). It is therefore concluded that an average of seventeen (17) facilities were disposing an average of 703,373 tones/annum of “General: Municipal waste” over a three-year period (from the 2019, 2018 and 2017). From these two datasets (A

and B from the table below) an index of priority (by multiplying column A x column B for each waste type) could be calculated.

**Table 3: Calculated average (2019, 2018 & 2017) facilities reporting waste types & Tons/Annum**

	Waste Type	A = Average Facilities <sup>4</sup>	B = Average Tons/Annum <sup>5</sup>	INDEX = A x B
1	General: Municipal waste	17.3	703,372.5	12,191,790.0
2	General: Construction and demolition waste	9.7	594,804.8	5,749,779.7
3	General: Commercial and industrial waste	8.0	257,865.6	2,062,925.1
4	General: Metals: Ferrous metal	2.0	563,581.0	1,127,162.0
5	General: Other	6.7	155,549.0	1,036,993.3
6	General: Organic waste	3.7	270,879.2	993,223.7
7	Hazardous: Liquid and sludge inorganic waste	4.7	129,389.4	603,817.4
8	General: Organic waste: Garden waste	8.7	54,083.8	468,726.3
9	General: Slag: Ferrous metal slag	2.0	169,668.2	339,336.5
10	Hazardous: Solid inorganic waste	2.7	73,253.5	195,342.8
11	General: Bottom ash	6.3	30,093.5	190,592.4
12	General: Slag: Non-ferrous metal slag	1.0	170,478.2	170,478.2
13	Hazardous: Miscellaneous	2.7	42,695.1	113,853.6
14	Hazardous: Bottom ash	2.3	34,407.6	80,284.4
15	General: Metals: Non-ferrous metal	1.3	56,501.8	75,335.7
16	Hazardous: Liquid and sludge organic waste	2.3	17,922.8	41,819.9
17	Hazardous: Fly ash and dust from miscellaneous filter sources: Fly ash	1.7	17,188.7	28,647.8
18	Hazardous: Solid organic waste	2.7	7,729.5	20,611.9
19	Hazardous: Mineral waste: Refractory waste	1.7	9,527.0	15,878.3
20	Hazardous: Solids containing halogens and/or sulphur	1.3	7,825.5	10,434.0
21	Hazardous: Spent pot lining (organic)	1.0	7,716.2	7,716.2
22	Hazardous: Waste oils: Waste oil	1.7	3,535.7	5,892.8
23	General: Organic waste: Food waste	3.7	1,474.9	5,407.8
24	General: Slag: Other	0.7	7,145.6	4,763.7
25	General: Sewage sludge	2.3	1,919.3	4,478.3
26	Hazardous: Lead batteries	1.0	2,131.5	2,131.5
27	General: Plastic: Polypropylene	0.3	4,833.3	1,611.1
28	Hazardous: Mineral waste: Foundry sand	0.7	2,302.2	1,534.8
29	General: Organic waste: Wood waste	1.0	1,297.8	1,297.8
30	General: Mineral waste: Refractory waste	0.3	3,251.5	1,083.8
31	Hazardous: Asbestos containing waste	2.0	296.8	593.5
32	General: Mineral waste: Foundry sand	1.0	462.3	462.3
33	Hazardous: Health care risk waste: Infectious waste and sharps	0.7	513.7	342.4
34	Hazardous: Mercury containing waste: Solid waste containing mercury	0.7	428.4	285.6
35	General: Tyres	2.0	133.0	266.1
36	Hazardous: Health care risk waste: Pathological waste	0.3	543.7	181.2
37	Hazardous: Bituminous waste	1.3	108.1	144.1
38	Hazardous: Solvents without halogens and sulphur	1.0	78.3	78.3
39	Hazardous: WEEE: Entertainment and consumer electronics and toys, leisure, sports and recreational equipment and automatic issuing machines	0.7	70.8	47.2
40	Hazardous: Liquids and sludges containing halogens and/or sulphur	1.0	35.7	35.7
41	General: Plastic	1.0	23.1	23.1
42	Hazardous: Health care risk waste: Chemical waste	0.7	29.2	19.5
43	General: Brine	0.7	27.7	18.4
44	General: Fly ash and dust from miscellaneous filter sources	0.3	41.2	13.7
45	Hazardous: Sewage sludge	0.3	30.2	10.1
46	General: Plastic: Other	0.3	16.6	5.5
47	Hazardous: POP waste: Other POP-containing waste	0.3	14.7	4.9
48	Hazardous: Mineral waste: Other	0.3	11.0	3.7
49	General: Metals	1.0	2.7	2.7
50	General: Paper	0.7	3.3	2.2
51	General: WEEE: Mixed WEEE	0.3	4.7	1.6

<sup>4</sup> For 2019, 2018 and 2017.

<sup>5</sup> For 2019, 2018 and 2017.

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52	General: Glass	0.3	3.9	1.3
53	Hazardous: WEEE: Office, information, and communication equipment	1.0	0.6	0.6
54	Hazardous: WEEE: Lighting equipment	0.3	1.4	0.5
55	Hazardous: Mixed batteries	0.7	0.3	0.2
56	General: WEEE: Small household appliances	0.3	0.5	0.2
57	Hazardous: Mercury containing waste: Liquid waste containing mercury	0.3	0.4	0.1
58	General: Plastic: Polyethylene terephthalate	0.3	0.3	0.1
59	General: Plastic: Polyvinylchloride	0.3	0.3	0.1
60	General: WEEE: Lighting equipment	0.3	0.2	0.1
61	Hazardous: Manganese dioxide and alkali batteries	0.3	0.1	0.0
<b>TOTAL</b>		<b>122.3</b>	<b>3,405,307.4</b>	

This approach is somewhat similar to the process followed by Wekisa & Majale (2020) for their aggregated quality of life index, except for the variables used, and no weighting was applied in this case (i.e. no waste streams were favoured above another by using a weighting in this case). It is logical that if a waste stream is well distributed (i.e., found in many municipalities) then the number of Facilities reporting it will be high. Thus, multiplying this high distribution, by a high annual tonnage will produce a large number compared to if both variables were low. This will be done for all the criteria specified previously.

### **Multicriteria Analysis and scoring**

A discussion on MCA including the aspects considered for this project was presented previously. Table 3 presents the results for the calculated index based on the distribution and tonnages of different waste types. This was further assessed based on criteria to ensure that the prioritised shortlist indeed meets the requirements of the study, namely, a ubiquitous waste stream, relatively simple to exploit and available off the shelf technology to implement. This is initially based on a calculated index, and then assessed on a scoring system. This approach to scoring for the analysis is presented below:

### **Amount and Distribution**

The highest index (A x B) waste streams in Table 3 would appear to be good candidates for shortlisting. However, it should be noted that a number of these are based on very low distribution waste streams (i.e. tonnages for the fractions of waste being disposed to landfill is very high which leads to a skewing of the index). For instance, "General: Metals: Ferrous metal", "General: Slag: Ferrous metal slag" were reported by only two facilities in KZN but the annual waste tonnages reported was high; "General: Slag: Non-ferrous metal slag" (reported by one facilities) and "General: Metals: Non-ferrous metal" (reported by one facility only). Considering that the SAWIS database is based on the reporting of 18 municipalities, therefore the team took a view that any waste stream with less than 50% coverage (or a nine in column A) would have a questionable distribution and was therefore excluded from Table 3, unless the team knew from prior experience that the opposite was true.

**Type of Waste Streams**

More complex tasks require complex skills, and large budgets for capital infrastructure. This can be very expensive for an SMME or cooperative. Thus, all waste streams which were classified as *hazardous* were excluded from the Table 3.

**Impacts on Existing Livelihoods**

Impacts on existing livelihoods was an important consideration for the team. Plastics, “General: Municipal waste” (which also contain recyclables) and “General: Construction and demolition waste”, were excluded from consideration as discussed previously. The remaining criteria were scored according to Table 1 also discussed previously. This is based on the project team’s experience from similar projects conducted in the past and therefore it is acknowledged that there may be some subjectivity in the process.

**Availability and Ease of Roll Out of Technology Options**

Waste streams where simple technology options are available were favoured (and thus scored 3), higher than a waste type where technology options were complex or expensive (i.e. scored 1).

**Barriers to Entry**

This criterion was scored based on either no known barriers (score 3), low barriers (score 2) or the potential for insurmountable barriers to entry (score 1).

**Potential Market Types**

This criterion was scored based on either known international markets (score 1), regional markets (score 2) or local markets (score 3).

**Alignment to Sustainable Development Goals (SDGs)**

If the beneficiation of the waste stream could contribute towards the realization of an SDG, this was scored positively. The more SDG’s it could contribute to the higher the score. Each SDG was scored as a single point; the total points were then divided by 17 (17 SDGs). Therefore, if the waste stream could lend itself to a goal, it received a score of 1/17 for each goal.

**Potential for Symbiotic Relationships**

Scoring was assigned based on the likelihood of opportunities for a symbiotic relationship (score 2), no likely opportunities (score 1) or the possibility for negative impacts (score 0). The next section outlines a discussion on the shortlisted waste streams.

### Short Listed Waste Streams

Table 3 revealed several waste streams which were well distributed throughout the province. However, a number of these were excluded due to the likelihood of having a poor spatial distribution as well as already being utilised by other stakeholders for their livelihoods. After assessing the remaining waste streams based on multiple criteria in section 2.3, a short list of possible waste streams remained. Of the eight items on this list, six are of organic origin. This includes the waste stream labelled as “General: Other” which is reported as including “biomass waste from industry” (DEA, 2012). Note that initially “General: Organic waste: Food waste”, “General: Sewage sludge”, and “General: Organic waste: Wood waste” were excluded from consideration, however it is known that these waste streams are indeed well distributed in the province. It is therefore likely that this is a deficiency of the SAWIS database. Therefore, the following items are included in the final listing below.

**Table 4: Summary of shortlisted waste streams**

	Waste Type	A = Average Facilities <sup>6</sup>	B = Average Tons/Annum <sup>7</sup>	INDEX = A x B
1	General: Other <sup>8</sup>	6.7		1,036,993.3
2	General: Organic waste	3.7	270,879.2	993,223.7
3	General: Organic waste: Garden waste	8.7	54,083.8	468,726.3
4	General: Bottom ash	6.3	30,093.5	190,592.4
5	General: Organic waste: Food waste	3.7	1,474.9	5,407.8
6	General: Sewage sludge	2.3	1,919.3	4,478.3
7	General: Organic waste: Wood waste	1.0	1,297.8	1,297.8

The above waste streams (including the 6 aggregated organic wastes) were subjected to one final set of analysis. These items were scored using the system described in section 2.3 under the different criteria. The results are presented below in the results section.

### 3 Results and Discussion

In terms of achieving the SDGs organic waste streams achieved the higher score. Both bottom ash and organic waste fractions could contribute to job creation opportunities (goal 1) and hence the alleviation of poverty, sustainable cities and communities (goal 11), responsible consumption and production (goal 12), climate action (goal 13), better life above land (goal 16) and opportunities for symbiotic relationships (goal 17). Organic waste has the potential to contribute to agricultural applications hence contributing to goal 2 and goal 3 (Nottingham, 2012; Pretorius, 2014; Haburukundo, 2019). Both waste fractions could contribute to decent work (goal 8) and be benefited by

<sup>6</sup> For 2019, 2018 and 2017.

<sup>7</sup> For 2019, 2018 and 2017.

<sup>8</sup> This is biomass waste from industry.

both men and women (goal 5). Anaerobic processes utilising organic wastes in combination with sewage sludge could contribute to better management of water sources (goal 6 & goal 14) which can also assist with local energy sources (goal 7) from the anaerobic processes (Tumwesige, Fulford and Davidson, 2014; Cândido *et al.*, 2022; López-Dávila *et al.*, 2022).

Table 5 presents the final scoring of the two main waste streams. A large proportion of these are organic waste fractions and are therefore represented under the broad category of organic waste streams. Based on the scoring, organic wastes were prioritised for beneficiation by SMMEs in the next stages of the project (score of 12,824 versus Bottom ash with a score of 11,529).

Considering the different types of organic waste, several simple off the shelf technology options exist for the different organic fractions. Some of these include composting of the woody organic waste fractions (Couth and Trois, 2012) and relatively simple anaerobic digestion of food waste fractions (Kumar and Bharti, 2012; DEA, 2015). A number of options to utilise bottom ash depend on the processing, the input waste quality and existing regulations – this applies to bottom ash use in block manufacture, soil amelioration, as a concrete extender, for road construction, or fill material (Hallows and Munnik, 2017). Recently Eskom applied for approval to the DFFE to exclude bottom ash from the definition of waste. Although there are no coal fired power stations in KZN it could be argued that a similar process could be undertaken for other large producers of bottom ash (RSA, 2019a, 2020; Eskom, 2021; Godfrey, 2021). Because of this potential national legal barrier for approved sources of bottom ash (RSA, 2020) this opportunity was scored lower than organic waste fractions which have a relatively less rigorous and onerous approval process and are dependent on local site specific conditions. Both bottom ash and the different organic waste fractions could find local market applications and were scored the maximum of three (3) for this criterion. This is significant because transport costs could render many waste beneficiation projects unviable (Coelho and De Brito, 2013).

**Table 5: Final Scoring**

No	Criteria	Finding	Potential Score	Bottom Ash	Organic Waste
1	Availability of Technology	High – Simple Technology options available	3	3,00	3,00
		Medium	2		
		Low – Only complex Technology options	1		
2	Barriers to Entry	No Known barriers	3		3,00
		Low barriers to entry	2	2,00	
		High - Considered insurmountable barriers	1		
3	Existing markets	National or international	1		
		Regional	2		

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		Local	3	3,00	3,00		
4	Alignment with SDGs	GOAL 1: No Poverty (1/17)	0,06	0,06	0,06		
		GOAL 2: Zero Hunger (1/17)	0,06		0,06		
		GOAL 3: Good Health and Well-being (1/17)	0,06		0,06		
		GOAL 4: Quality Education (1/17)	0,06				
		GOAL 5: Gender Equality (1/17)	0,06	0,06	0,06		
		GOAL 6: Clean Water & Sanitation (1/17)	0,06		0,06		
		GOAL 7: Affordable & Clean Energy (1/17)	0,06		0,06		
		GOAL 8: Decent Work and Economic Growth (1/17)	0,06	0,06	0,06		
		GOAL 9: Industry, Innovation & Infrastructure (1/17)	0,06		0,06		
		GOAL 10: Reduced Inequality (1/17)	0,06				
		GOAL 11: Sustainable Cities & Communities (1/17)	0,06	0,06	0,06		
		GOAL 12: Responsible Consumption & Production (1/17)	0,06	0,06	0,06		
		GOAL 13: Climate Action (1/17)	0,06	0,06	0,06		
		GOAL 14: Life Below Water (1/17)	0,06	0,06	0,06		
		GOAL 15: Life on Land (1/17)	0,06	0,06	0,06		
				GOAL 16: Peace & Justice Strong Institutions (1/17)	0,06		
				GOAL 17: Partnerships to achieve the Goal (1/17)	0,06	0,06	0,06
5	Opportunities for symbiotic relationships	Opportunities exist	3	3,00	3,00		
	(BBBEE in Industrial Symbiosis)	No opportunities	2				
	Impacts negatively on existing livelihoods		1				
			<b>TOTAL</b>	<b>11,529</b>	<b>12,824</b>		

#### 4 Conclusion and Recommendations

This study found that there are opportunities for SMME's and cooperatives in KZN to utilize several relatively unexploited organic waste streams, including biomass, food, wastewater sludge and garden waste. These waste streams were found to be relatively widely distributed and underutilized throughout KZN. Several sources for these organic wastes include institutions such as fresh produce markets, commercial agricultural sources, schools, hospitals, and prisons. Off the shelf, relatively simple treatment technologies can be utilized for these under-exploited wastes. A number of recommendations are made below:

The study noted the general finding from other authors which indicated the poor separation at source of co-mingled waste streams, which presents a challenge to any beneficiation project. It is recommended that separation at source be implemented to improve the quality of recyclables as well as increasing quantities recovered.

There is also a need for improved reporting on the SAWIS database (by more private sector entities and municipalities). In terms of both the coverage and quality of information reported by waste type, this could be improved to assist discussion making.

The appropriate organic waste treatment method is dependent on the specific organic waste fraction. For instance, composting can be utilised for woody and heavily lignified garden wastes, while anaerobic digestion could be utilised for food waste fractions and less lignified organic waste fractions. Both technologies are available for a relatively small up-front investment required for set up, are easily scalable, and have relatively low skills requirements, ideally suited for an SMME. Different composting technologies are also available which provides opportunities for small-scale, large scale, in-vessel, and open windrow type operations.

A top-down approach to SMME (or cooperative) development is not advisable due to the likelihood of failure. Therefore, SMMEs (and cooperatives) which are already established and have a proven track record in the waste management space should be prioritised for implementation. The first prize is if such enterprises are already operating as either composters or possibly utilizing small scale anaerobic digestion.

Other waste streams that are known to be well distributed throughout KZN are bottom ash (although legislative barriers need to be overcome), as well as construction and demolition waste, although some of this is routinely being used for cover material on landfill sites. Other opportunities including glass waste (from MSW sources) with low technology processing could also be explored, however this excludes bottle to bottle reuse because there is no bottle plant in KZN, and the transport costs are likely to make any such enterprise uneconomical. Other opportunities for re-use include the construction sector, where crushed glass could be utilized as a filler for cement for compacted earth bricks, or for sandblasting.

Uptake of the identified opportunities could be facilitated through funded feasibility studies which will provide the required information for SMMEs to make informed decisions on technology choices and preferred location of the identified feasible opportunities.

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opportunities within the waste sector. This project is therefore also aligned with identifying opportunities for SMMEs and cooperatives in KZN.

### Conflict of Interest

The authors declare that there is no competing interest.

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## "Keeping South Africa's co-operatives data relevant and useful: Whose Responsibility is it? "

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### Abstract

Co-operatives are important in society; they strengthen democracy and encourage civil society to engage in economic, social and political affairs actively. Co-operatives provide numerous benefits to communities and have a significant positive impact on the economy. However, co-operatives are often poorly represented in statistics, with less reliable, coherent and comparable statistics on co-operatives in most countries. A qualitative study was conducted to determine how databases of the co-operatives in South Africa are maintained and to ascertain whether the database assisted in monitoring the contribution of co-operatives to the country's economy. In-depth interview was conducted with eight participants selected purposively from government departments that support and develop co-operatives. The findings revealed that data and information on co-operatives were maintained separately by several institutions. The database kept is only relevant to the needs of specific government departments and was not easily available to the public. The article recommends that a census of co-operatives in South Africa is carried out and this information must be updated continuously and be made publicly available. It is also recommended that a uniform reporting on the activities of co-operatives with a coordinated system of channelling information about co-operatives be established. Lastly, it is recommended that the CIPC revamp its current information and make it transparent and accessible to all stakeholders to benefit the country's economy.

**Keywords:** co-operative database, co-operative census, co-operative statistics

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### 1 Introduction

Co-operatives around the world contribute significantly to providing employment. Data from 156 countries reflect that co-operatives employ at least 279.4 million people globally, which is 9.46% of the world's employed population (Eum, 2017). However, data on co-operatives are not perfect, and they are collected for different purposes with little concerted efforts at times to produce comprehensive data sets. Researchers and practitioners argue for this gap to be filled to enable accurate studies and reports on the impact of co-operatives on their socio-economic environment (Brown & Novkovic, 2015).

Global mapping of the available national statistics revealed uneven processes of data collection, lack of a single legal and operational definition being used, and classification of co-operatives in terms of sector, size and type that does not, in most cases follow any internationally recognised standards (Aciamericas.coop 2014; UN, 2014).

ILO Resolution No. 193 in 2002, concerning the promotion of co-operatives, carried out developmental work on the measurement of co-operatives, the number and characteristics of co-operatives, members of co-operatives; members and workers employed by co-operatives and value added by co-operatives. In addition, paragraph 8 of ILO Recommendation No. 193 of 2002, encourages governments to corroborate national policies, and "seek to improve national statistics on co-operatives with a view to the formulation and implementation of development policies".

### **Global Census on Co-operatives**

The first-ever Global Census on Co-operatives was completed in 2013-14 with data from 145 countries worldwide. The census counted co-operatives in as many countries as possible regardless of their sector or membership in regional/global associations (Aciamericas.coop 2014; UN, 2014). The census revealed the existence of 2.6 million co-operatives globally, with over 1 billion members/clients. This reflected that 1 in every 6 people in the world has membership or is a client of a co-operative. Co-operatives globally generated USD 3 trillion in annual revenue. The census reflected the global size and impact of the international co-operative system (Aciamericas.coop, 2014; UN, 2014).

The Global Census on Co-operatives obtained its data from national level surveys, and from deliberations with sector and national associations charged with establishing co-operatives, such as the International Cooperative Alliance (ICA), World Council of Credit Unions (WOCCU), and International Cooperative and Mutual Insurance Federation (ICMIF) (Aciamericas.coop, 2014).

The outcome of the Global Census on Co-operatives led to the development of a Co-operative Economy Index based on the membership and employment concerning the country's population and the co-operative sector's annual Gross Domestic Product (GDP). The Co-operative Economy Index provides a single, even though oversimplified, determinant of the most co-operative economies globally (Aciamericas.coop, 2014).

The 2014 Global Report categorised work and employment found in co-operatives as employees, worker-members, and self-employed producer-members. The distinction between the key classifications led to identifying types of the impact of co-operatives on employment.

A follow-up report to the 2014 Global Report was completed in 2017. While the 2014 Global Report clarified the quantitative importance of co-operatives in work and employment globally, the focus of the Second Global Report on "Co-operatives and employment" 2017, was on understanding the various aspects of work and employment in co-operatives (Eum, 2017).

A wider coverage was provided using the information from the 2014 Global Report, and adding a few new countries, utilising data on 156 countries. The 2017 Global Report updated the 2014 report by a) providing an update on the quantitative information on co-operative employment worldwide; b) submitting conceptual tools with the view to processing reliable information on work and employment in co-operatives; c) examining the contribution of co-operatives to work and employment in informal employment and the new forms of work (Eum, 2017).

Further work done involved guidelines on co-operatives' statistics, which were adopted at the 20<sup>th</sup> International Conference of Labour Statisticians (ICLS) in October 2018. The compilation and analysis of statistics on co-operatives in many countries rely on administrative information emanating from co-operative registers. In South Africa, such statistics are held by the Companies Intellectual Property Commission (CIPC). Although administrative information is a crucial source of statistics, they tend to exclude pertinent information relating to membership in co-operatives or the number of workers employed in co-operatives.

Household surveys, another way of gathering information on co-operatives, could provide a rich source of economic and social data on the current activities and challenges of co-operatives. Though household survey-based information can be used to analyse relationships between economic sectors, types of co-operatives, and characteristics of workers, they are limited in producing accurate statistics on the number of co-operatives or their economic value (Brown & Novkovic, 2015). Compiling co-operative data cannot be exclusively reliant on administrative information or household surveys only. The blending of information is needed.

### **A lens on South African co-operatives**

Surveys on co-operatives in South Africa, though not a frequent occurrence, have been carried out before. A survey conducted by the National Co-operative Association of South Africa in 2001 (NCASA, 2002) concluded that the highest number of registered co-operatives was in the agricultural sector (25%), the services sector followed at (17%), and the rest were in the multipurpose sector, which constituted 14% of registered co-operatives.

The NCASA (2002) survey highlighted co-operatives generated R1.7 billion per annum. The greater portion of this income, R136 million per month, was derived from the nine mainly white-owned wine co-operatives based in the Western Cape. Other co-operatives not in the wine sector contributed R84 million per month to the GDP of the country. The survey highlighted that 40% of the co-operatives surveyed did not produce revenue for their members. According to the survey, co-operatives in subsistence farming, arts, baking, craft, catering, educare and clothing were earning almost R 2000 per month and were amongst the poorest. Less than 20% depended on grants from the government and donors. There has not been any further research of a similar nature in South Africa since the survey of NCASA (2002) and later information provided by the Department of Trade and Industry (DTI, 2012) for the co-operative strategy.

The spread of co-operatives in townships around urban centres was the same as in rural settings (NCASA, 2002). The survey conducted by the DTI in 2009 found a total number of 43 062 co-operatives spread nationally. The highest number of co-operatives (26%) were registered in KwaZulu-Natal (KZN). Satgar (2007) and Theron (2008) also found KwaZulu-Natal and the Eastern Cape to have the highest percentage of trading co-operatives (68%). KZN was followed by 20% in Gauteng where the majority were found in Johannesburg (37%), Pretoria (12%) and Vaal (3%) mostly in urban and peri-urban areas. Mpumalanga had 8%; North-West, 7%; Limpopo 6%, Western Cape had 5% co-operatives. The NCASA study did not cover North-West, Limpopo and Northern Cape. As a result, comparative information in terms of regional distribution was unavailable (NCASA, 2002; DTI, 2012).

In his study, Satgar (2007) found statistics on co-operatives in South Africa to be unreliable and problematic because of the failure of the CIPC to a) suitably classify co-operatives according to the Co-operatives Act 14 of 2005; b) failure to distinguish between primary, secondary and sectoral co-operatives as per the Cooperative Act (Act 14 of 2005). The data on conversions of co-operatives to companies was not captured; c) unavailability of contact information on co-operative members making it difficult to verify the existence of co-operatives; d) the difficulty in confirming whether the co-operatives are engaging in co-operative activities, and e) information received did not reflect the submission of annual financial statements by co-operatives as per the Cooperative Act (Act 14 of 2005). It must be noted though that, the introduction of the Protection of Personal Information (POPI) Act, 2013, which amongst others regulates the manner in which personal information may be processed, will make certain information regarding members of co-operatives not easily accessible for verification (Government of South Africa, POPI Act, 2013).

Various institutions are involved in co-operative support programmes in South Africa. As a result, various institutions hold the data and information on co-operatives without



proper coordination. These institutions include various national, provincial and local government departments and the government implementing agencies involved in support of co-operatives, the co-operative apex bodies, Co-operative and Policy Alternative Centre (COPAC), tertiary institutions, the German Co-operative and Raiffeisen Confederation (DGRV) and the NGOs. This complicates having an overview and planning interventions for co-operatives (Twalo, 2012) unless the Department of Small Business Development (DSBD), a government custodian of co-operatives, co-ordinates the data efficiently.

Satgar (2007) believes that the emergence of various government-linked institutions supporting co-operative development and policy constitute the strength of the emerging government support system. However, their work needs to be collaborated. If the DSBD fails to collaborate on co-operative information, the Cooperative Development Agency, as introduced in the Cooperative Amendment Act of 2013, which is still to be established, could solidify the representation from various institutions promoting co-operatives and from co-operative movement structures.

One of the objectives of the Co-operatives Development Agency in terms of Section 91B (d) of the Co-operative Amendment Act No. 6 of 2013 is to offer support to the registrar for the registration and de-registration of co-operatives while Section 91C (d) (v), makes provision for the Co-operative Development Agency to "assist the registrar of co-operatives in maintaining and updating the co-operative database and registration database". The registration of co-operatives and related data capturing, and maintenance remains the responsibility of the CIPC. Co-operative Amendment Act No. 6 of 2013 came into operation on 1 April 2019, eleven months before the onset of the COVID-19 pandemic. This could signal a further delay in implementing salient aspects of the Act.

### **Why measure and monitor co-operative data?**

It is an onerous task to determine how to support or aid co-operative development without reliable data on their size and impact (Brown & Novkovic, 2015). It is also equally important to show that a valid model exists that is different from the for-profit model dominant in today's global economy. Developing such an estimate requires effort to define the target population, and the most appropriate data collection tools and identify and define the key indicators for assessing co-operatives' impact on the economy and society. Statistics on co-operatives, become important in quantifying, clarifying and analysing the impact the on their owner-members, and how different business models impact communities, workers and the economy.

Such statistics will include a) the number of co-operatives and their characteristics; b) the number of members of co-operatives, the number of workers engaged in co-

operatives and their characteristics; c) statistics on the value of production by co-operatives (Brown & Novkovic, 2015).

A further reason why data on co-operatives are crucial relates to the advocacy role played by the International Cooperative Alliance (ICA). ICA relies on an accurate quantitative and qualitative volume of evidence of the global co-operative economy in carrying out its advocacy role on behalf of co-operatives. Its advocacy role is complemented by applicable methodologies utilised to gather and analyse data, the indicators, metrics, and approaches of co-operatives, what influences co-operative behaviour, and how performance in non-co-operative sectors is assessed.

The need to standardise, harmonise and coordinate data for comparability--the "data challenge"-- occurs in most sectors and is therefore not unique to co-operatives. In the co-operative sector, the ICA plays a significant role of developing, guiding, and driving a strategic approach to statistical data and research on co-operatives without dictating the trends of research and methodologies. ICA partners with the ILO allowing for the development of international statistical standards. At the same time, the Alliance rallies its members, which includes federations of co-operatives at the national level to support data collection efforts (Brown & Novkovic, 2015).

The ILO, ICA work with the World Co-operative Monitor which assembles vigorous economic, organisational, and social data about co-operatives, mutual organisations and non-cooperative enterprises controlled by co-operatives globally. The World Co-operative Monitor 2018 was the only report of its kind designed to collect annual quantitative data on the global co-operative movement (Monitor, 2018).

A study conducted by Diaz-Foncea and Marcuello (2015) on statistical data sources on co-operatives in Spain, a country with a long co-operative tradition, reflected that such data was available mainly at the macro level and no micro-level data is available on co-operative firms to conduct generalisable studies of their internal structures.

Micro-level data were provided by company censuses or surveys that included the legal form of co-operatives such as the Commercial Registry, Survey of Industrial Strategies and Promoting Production, which was biased toward large co-operative firms. Furthermore, the variables they present were unsuited to the reality of these organisations. Regional and state registries of co-operatives, whose tasks were to collect individualised accounting data on these organisations, did not computationally and publicly record such data nor update them annually, as they should. (Diaz-Foncea & Marcuello, 2015).

This study further revealed that available statistics are rarely differentiated by the type of co-operative and made it difficult to research specific models of co-operatives, analyse idiosyncratic characteristics and specify behaviours that occur in a certain type of co-operative. Lastly, the most common data sources were in the form of non-readable information using common statistical analysis software which was not conducive to the study.

Several factors inhibit the easy collection of co-operative data. Nembhard (2015), highlighted that identifying benefits offered by co-operatives is different and more difficult from measuring impacts, significant effects or consequences made by co-operatives from the contacts or relationships. Inter co-operation and interconnections between co-operatives produce multiplier effects, co-operative businesses often help create other co-operatives by donating money to co-operative revolving loan funds, and/or investing in co-operative development.

### **Tools used in measuring the performance of co-operatives**

The "co-operative way" of doing business separates co-operatives from investor-owned counterparts and may position them well to meet the objectives of responsible organisations. According to Brown and Novkovic (2015), responsible organisations meet three categories (a) sustainability performance; (b) responsibility performance; and (c) ethics performance. However, the question is, how to ascertain that co-operatives are delivering on the "co-operative difference", including democratic governance and transparency (Brown & Novkovic, 2015).

Brown and Novkovic (2015) acknowledge the many tools available for co-operatives to measure and report on their practices. Still, they believe a need exists to blend the theoretical and empirical research on co-operative social responsibility and accountability and performance measurement. Co-operatives should measure the effect of the co-operative form of business, and gauge what this means in their communities.

Several co-operatives have been using the AA1000 Assurance Standard (AA1000 AS) and Global Reporting Initiative (GRI) which are also widely used by big businesses (Brown & Novkovic, 2015). AA1000 Assurance Standard (AA1000 AS) is a standard for assessing and strengthening the credibility and quality of an organisation's social, economic and environmental reporting (Nefconsulting, 2021).

According to Gamze and Çaliyurt, (2021), the Global Reporting Initiative (GRI) guidelines used in sustainability reporting are justifiable for almost all sectors. Sustainability reporting is periodic and voluntary assessment and public disclosure relating to sustainability information that presents the enterprise's economic, environmental, and social efforts and advancements to internal and external stakeholders, as well as

appraises the progress of the enterprise's sustainability. However, Gamze and Çaliyurt (2021) found sustainability reporting practices in co-operatives insufficient.

The study commissioned by the ICA on the Social and Environmental Indicators and Tools for Co-operatives appraised the nature of social, environmental and sustainability impact indicators and tools utilised by the top 50 Global 300 co-operatives (ICA, 2016). The findings revealed that most co-operatives are not using tools of this nature to track non-financial indicators. Those engaging tools were using the ones designed for investor-owned companies, such as GRI, AccountAbility, LEED, and UN Global Compact. That study further revealed that fifteen co-operatives used predominantly proprietary tools, and could only be used by the co-operative that designed them. Such tools often did not include metrics, were not standardised and were focussed mostly on social indicators, but they often connected closely to the co-operative principles (ICA, 2016).

## **2 Materials and methods**

This qualitative study aims to establish how government departments, implementing agencies and the apex co-operative maintain and monitor the databases of the co-operatives they deal with. Purposive sampling was applied in selecting government departments that support and develop co-operatives. An in-depth interview was conducted with eight participants at their offices. These were selected national (3) and provincial (2) government departments, government implementing agencies (2) and the apex co-operative (1). The interviews were analysed using thematic data analysis.

## **3 Findings and Discussion**

The findings revealed that, in South Africa, data and information on co-operatives were maintained separately by several institutions involved in co-operative support programmes. These institutions include but are not limited to national, provincial and local government departments and their implementing agencies, NGOs, private organisations and educational institutions. The DSBD, the government custodian of co-operatives, maintains a memorandum of understanding (MOU) with various government departments and the private sector that supports co-operatives. The researcher was not privy to the contents of the MOU.

The DSBD, who is the custodian of co-operatives does not have a database of co-operatives. However, their implementing agency, Small Enterprise Development Agency (SEDA) has an organised database of co-operatives that they support, some of which they have assessed and produced written reports from which the researcher chose the suitable reports.

The DSBD relied on the CIPC despite being aware that the information from the CIPC was not user-friendly and reliable. When asked about successful co-operatives in their database, the participant interviewed responded, *"I can run a query and see how many co-operatives were formed, just after 1994, they should be very few. Many co-operatives were formed during the last 4 to 5 years. I can run a query and let you know which ones"*. It is important to note that this participant never shared the information promised.

The same question attracted a different response from another government department, *"We do have a database, like what Mr Vax (pseudonym) did. He put some of the co-operatives here. These are some of the national projects that we were doing – we can just print this database and email it to you"*. The database that this participant referred to was accessible on their website.

The second national government department indicated that they only kept a database of the co-operatives that they have profiled. They linked these co-operatives to resources and then measured the impact brought by linking them to the resources. They were implementing the strategy they introduced in 2015, and were yet to carry out the impact assessment. Before the 2015 strategy, they funded co-operatives but not any longer.

The cooperative apex body did not appear to be keeping a proper database of its affiliates. When asked about successful co-operatives the participant interviewed responded, *"So, there are many co-operatives that are successful, but I need to get the names of the places where they operate from"*. Despite the participant reporting a huge number of affiliated co-operatives, many of which they found challenging, the participant interviewed could not easily identify successful co-operatives.

The third national government department maintained a sophisticated online system accessible only to their stakeholders. The participant interviewed was versatile and knowledgeable and had information at his fingertips regarding the co-operatives they supported. The database of co-operatives maintained by the CIPC is not reliable. As a result, it is not known how many active co-operatives there are, which could make the budgeting process of the co-operative custodian national government department difficult.

The findings revealed that the database kept by government departments and implementing agencies supporting co-operatives, including the apex body, is not easily available to the public. Furthermore, the database kept is only relevant to the needs of specific government departments, with no uniformity across government departments. Similarly, the information kept by the CIPC, co-operatives the registrar, is not reliable nor user-friendly and does not provide information useful to stakeholders. One of the

issues on cooperative data in South Africa is that they are bundled up with Small and Medium-sized enterprises (SMMEs).

The objectives of the study were to establish the nature of the database of co-operatives maintained by government departments, or their implementing agencies maintain and ascertain whether these databases assist in monitoring the contribution that co-operatives were making to the economy of the province and the economy of the country.

Lack of vigorous and collective effort in producing comprehensive data sets on co-operatives was found as a challenge. This results from the fact that co-operative statistics are compiled for different purposes by different institutions leading to imperfect data on co-operatives. Furthermore, in measuring the impact of the co-operative form of business, co-operatives need to assess what their business means in their communities. The lack of accurate data on co-operatives makes it impossible to conduct this assessment.

Obtaining statistics on the social economy and the co-operative sector required immense resources in time and money as revealed in the study in Spain (Diaz-Fonca & Marcuello, 2015). Statistics South Africa (StatsSA) the national statistics agency of South Africa established under the Statistics Act (Act No. 6 of 1999) produce timely, accurate and accessible official statistics that can assist in providing co-operative data. Frequent reports reflect the extent of their resources on among others, the living conditions, sustainable development goals, the economy, municipalities and many more (StatsSA, 2021).

Statutory bodies with important enterprise information include SARS and the National Treasury. It is mandatory for enterprises in South Africa including co-operatives to file annual returns. SARS is the legislatively authorised controlling entity for statistics on the importation and exportation of goods. The National Treasury and SARS together issue tax statistics annually. These aggregated statistics which emanate from SARS' registers of taxpayers and tax returns, complement other published social and economic data (SARS, 2021).

National Apex bodies such as the National Co-operative Association of South Africa (NCASA) had previously played a pivotal role in surveying co-operatives. However, national apex bodies in South Africa do not live long enough to continue with this important role. NCASA was launched in 1997 through the initiative funded by the Canadian Co-operative Association in support of the ICA and the new democratic African National Congress (ANC) government. According to Philip (2003), fatal mistakes in organisational form and roles led to the demise of NCASA as a National Apex Body in 2002. This led Satgar (2007) to believe that NCASA was an organisation that evolved in

a top-down way and set a mould that culminated in the failure to establish proper provincial structures. The South African National Apex Co-operative (SANACO), formed in 2010, played the role of the national apex body until 2019 when the Co-operative Amendment Act of 2013 was signed into law and did not have the same agenda as NCASA.

Some government departments, nationally, provincially and at the local level have signed an MOU with the DSBD to develop and support co-operatives. As a result, they have critical co-operative information. However, they have not coordinated their effort in developing a comprehensive and accurate database on co-operatives. The findings further revealed that in South Africa, co-operative data maintenance and reporting remain the responsibility of the CIPC.

#### **4 Conclusions**

The legislation on co-operatives, Co-operative (Act. 14 of 2005 as amended in 2013), in South Africa puts the registration, and de-registration of co-operatives in the hands of CIPC as the registrar with the assistance of the National Development Agent that is yet to be established. Given this, it is recommended that a census of co-operatives in South Africa be carried out and this information must be kept alive. It is also recommended that a uniform reporting on the activities of co-operatives with a coordinated system of channelling information about co-operatives be established. Lastly, it is recommended that the CIPC revamp its current information and make it transparent and accessible to all stakeholders to benefit the country's economy.

#### **Conflict of Interest**

I declare that there is no conflict of interest.

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## Alternative Financial Inclusion and Women Empowerment in the Covidian Era: Evidence from Rural Women Entrepreneur in ROSCA in South-Western Nigeria

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### Abstract

Informal credit arrangements create potential financial succour for businesses, mainly small-scale enterprises, as most micro-businesses bear the brunt of low financial inclusion because of their informal existence. Hence, the study seeks to answer two central questions: Is ROSCA<sup>9</sup> a sustainable alternative financial inclusion option for women entrepreneurs' empowerment in the Covidian era?; what are the challenges facing the successful operationalization of this form of cooperative mechanism in the rural setting in Nigeria? The study is anchored in the collective action approach. The study adopted a mixed-method design using econometric tools (Ordered generalized logistics regression and Variance covariance estimate least square regression after a sum approach was used to extract a composite score for the outcome variable) and statistical techniques (tables, and pair-wise correlation) were employed to analyze the quantitative part while thematic analysis was adopted for the qualitative section. Results show that most of the women surveyed used their ROSCA money for capital accumulation and other business expansion purposes. Also, ROSCA has a positive and significant effect on the performance of the business of these rural women. These results were confirmed with the outcome of the qualitative analysis, which further underscores the role of ROSCA in financially empowering women in Nigeria. However, challenges such as default in loan repayment by members and occasional fund misappropriation by some leaders were prevalent.

**Keywords:** ROSCA, rural dwellers, women empowerment, financial inclusion, Covidian era

### 1 Introduction

Informal credit arrangements create potential financial succor for businesses, mainly small-scale enterprises, as most micro-businesses bear the brunt of low financial inclusion due to their informal existence and weak business environment (Lakuma, Marty & Muhumuza, 2019). Economic conditions such as inadequate infrastructures, poor finance, and some other factors exacerbate the poor growth of these small-scale enterprises in Sub-Saharan Africa, especially in Nigeria, with strong implications for women

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<sup>9</sup> ROSCA stands for Rotating Savings and Credit Association

entrepreneurs' empowerment (Lakuma et al., 2019). Global Entrepreneurship Monitor (GEM) 2020 report shows more women entrepreneurs in Nigeria than even their male counterparts. However, the women in Nigeria generally are not only socio-culturally vulnerable but also economically limited in access to economic opportunities (UN-Women,2020); a condition further aggravated by the COVID-19 pandemic and rural socio-economic context (The Fate Institute,2021). The socio-economic vulnerability of women further strengthens the debate about women's social and financial empowerment, especially about engaging women directly in the empowerment process given institutional bottlenecks in financial access. Also, the focus on women's economic empowerment<sup>10</sup> has been recognized as an important strategy in the journey to gender equality in many low-income countries (Niyonkuru, 2021).

To this end, Niyonkuru & Barrett (2021) observed that working with critical consciousness is central to expanding the possibility horizons for women and realizing a transformative impact on access to income and autonomy in expenditure. However, previous authors (e.g. Bat liwala, 2007; Kabeer, 1999; Rowlands, 1997) feel that women need to take up the mantle of empowerment themselves and for themselves, arguing that women can be supported through policy, but empowerment cannot be done for them. This would not be considered as taking up power in a negative light but 'power for' positive social change. In fact, through confidence in self, empirical account shows women can survive in small scale enterprise, most especially in Nigeria business landscape (Egwe,2021).

While agreeing with other authors, Cornwall (2016) argued that the movement towards women driving empowerment for themselves can only be achieved if they begin thinking differently about themselves; believe in themselves; consider the major role they play within the nation, communities and households; their relationships and their visions.

This raises greater interest in generating more insight into how a sustainable empowerment scheme that is governed independently, like Rotating Savings and Credit Association (ROSCA) can augment businesses of women. This economically marginalized group (Niyonkuru & Barrett,2021). ROSCA has been seen as a source of earnings for women (Sedai,Vasudevan & Pena,2021) and creates a strong link to the growth of women-owned micro-businesses. In other words, it offers an alternative means of earning which is not dependent on financial institutional terms like bank loans. It is also

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<sup>10</sup> Women's Economic Empowerment is understood as: "The capacity for women to participate in, contribute to, and benefit from growth processes in ways that recognize the value of their contribution, respect their dignity, and make it possible to negotiate a fairer distribution of the benefits of growth" (Niyonkuru,2021).

argued that ROSCA can be placed within a broad set of institutions that provide credit (Besley et al, 1993), earning opportunities (Bisrat et al., 2012; Hossein, 2018), social support (Geertz, 1962) and mutual aid (Klonner, 2008). However, there is a dearth of literature exploring ROSCA's relevance in the Nigerian rural context, focusing on women and given exogenous shocks like COVID-19, which further worsen the situation of these cohorts. Therefore, it is imperative to provide insight into how ROSCA can be relevant to the growth of women's business and increased social relevance given Nigerian and COVID-19 contexts.

Two central questions are set to be answered in this study, *vis-à-vis*; to what extent can participation in ROSCA promote women's empowerment as an alternative mechanism of financial inclusion in the Covidian era? What are the challenges facing the successful operationalization of ROSCA as a form of cooperative mechanism in the rural setting in Nigeria? This study is anchored on the collective action approach by Mancur Olson (1965) which seeks to explain the action taken by a group of people whose aim is to improve their standard of living and achieve a common goal. In this light, we linked the relationship between ROSCA involvement and measurable business outcomes such as profitability, customer satisfaction, new branch opening, and new equipment acquisition.

The remaining part of the study includes the materials and methods, main findings, discussions, conclusions, and recommendations.

## **2 Materials and Methods**

The study adopted a mixed-method design. Atlas ti 9 was used to extract the emerging themes and codes from the interview excerpts of 3 rural micro-business owners involved in ROSCA. They were selected across three towns in Southwestern Nigeria to represent the three rural contexts central to the study. The three towns were selected as they represent the major towns of the Osun State including the capital of the State. While questionnaire was administered to 250 women micro-business owners in the three selected towns in Osun State namely, Ile-Ife, Ilesha, and Oshogbo. The response rate was 90% while the sample was selected using a snowball sampling technique from an unknown study population of women entrepreneurs. When data is collected from a business owner who participates in ROSCA, she helped with the information of the next person as there was no official information on their list in any database. This is particularly because they usually operate informally. Econometrics tools such as ordered generalized logistics and Variance covariance estimate least square regression. Also, the sum approach was used to extract the factor scores for both ROSCA and the outcome variable (performance). Statistical techniques (tables, and pair-wise correlation) were employed to analyze the quantitative part. At the same time, thematic analysis was adopted for the qualitative section. Following Yusuf & Ijaiya (2009), ROSCA

was measured as a series of expenses (capital accumulation, household expenditure, health care, insurance, debt payment, children school fees, and other expenses) ROSCA money could be spent on in the household and business. Specifically, in estimating the effect of ROSCA on performance of the micro-businesses, the sum score generated from the sum score approach was used following the suggestion of Distefano et al. (2009). In addition, due to the ordinal response pattern of the outcome variable, ordinal generalized linear model was adopted to explain the effect of ROSCA adoption on business performance. It can be noted that the model becomes necessary because of the violation of the proportional or parallel odds assumption of the traditional ordered logistic model as the parallel assumption test showing a brant test of Chi2 value of 4506 and pvalue=0.000(<1%) and the approximate likelihood ratio test of Chi2 63.31 and p-value of 0.000(<1%) (see table 6). The two test consistently affirmed the violation of proportional odds assumption, hence the adoption of ordinal generalized linear model (Williams, 2008). The heterogeneous choice model is further estimated using both the aggregated and disaggregated models (table 3 and 5). The aggregated model used the sum score index to proxy ROSCA while the disaggregated model used a granulated measure of ROSCA to test their effect on the performance of the women-led micro-businesses.

### 3. Main Findings

#### Demographic Information

Table 4.1 shows the demographic information of respondents. Less than 1 out of 100 (0.78%) of the respondents are below 18, more than one-third (32.81) of the respondents are within the age bracket 18-35, more than half (53.91%) of the respondents are within the age of 36-65, and one out of ten (12.5%) of the respondents are within the age of 65 and above. One-quarter (19.92%) of the respondents had a primary school degree as educational qualification, about half (46.88%) of the respondents had secondary school degree as educational qualification, one out of four (21.88%) of the respondents had HND/B.sc/BA as educational qualification, one out of twenty (6.64%) of the respondents had B.sc as educational qualification, and about 5 out of 100 (4.69%) of the respondents had M.Sc./MA/PHD as educational qualification.

Also, one out of ten (10.55%) of the respondents are single, more than one out of hundred (1.95%) of the respondents are divorced, about one-fifth (19.92) are widowed, and more than two thirds (67.58%) of the respondents are married.

More than half of the respondents were Christian (62.11%), one third were Muslim (36.72%), less than 1/100 (0.39) of the respondents were traditionalist, and the same quantity belonged to other religion. More than one third of the respondents reside in Osogbo (39.45%), less than 1/3 (30.21%) of the respondents reside in Ile-Ife, and a little less than 1/3 (30.21%) of the respondents reside in Ilesha. This shows a proportionate distribution across the levels of ruralization. More than 1/20 (3.52%) of the respondents

had a circle of collection once in a year, majority (95.7%) of the respondents had a circle of collection twice in a year, and almost all the respondents had a circle of collection twice/thrice in a year. Almost (99.2%) all the respondents had a daily nature of ROSCA, and less than 1/100 (0.78) of the respondents had a weekly nature of ROSCA. Less than half (39.84%) of the respondents receive below 18000 naira (41 USD as of 7<sup>th</sup> October, 2022 exchange rate) as monthly income, more than one-third (37.17%) of the respondents receives 18000-100000 as monthly income, and more than one-fifth (23.05%) of the respondents receives 100000 and above as monthly income.

**Table1: Demographic Information of Respondents**

Variables	Categories	Frequency	Percentage
Age	Below 18	2	0.78
	18-35	84	32.81
	36-65	138	53.91
	65 and above	32	12.50
Qualification	Primary	51	19.92
	Secondary	120	46.88
	HND/B.sc/BA	56	21.88
	B.sc	17	6.64
	M.Sc./MA/PHD	12	4.69
Marital status	Single	27	10.55
	Divorced/separated	5	1.95
	Widow	51	19.92
	married	173	67.58
Religion	Christianity	159	62.11
	Islam	94	36.72
	Traditional	1	0.39
	others	2	0.78
Place of residence	Oshogbo	101	39.45
	Ile-ife	85	30.99
	Ilesha	70	30.21
Circle of collection in a year	Once	9	3.52
	Twice	245	95.70
	Twice/thrice	2	0.78
Nature of ROSCA	Daily	254	99.22
	Weekly	2	0.78
Monthly income	Below 18000	102	39.84
	18000-100000	95	37.17
	100000 and above	59	23.05

Source: Stata Output as compiled by the author

Table 3.2 shows the correlation matrix, a measure of the degree of association and direction of relationship among the variables. The table presented correlation coefficients of explanatory variables required for testing for multicollinearity. According to the assumption of the classical regression model, when explanatory variables within a model are correlated, the model is not a good fit. It tends to exhibit overstated or understated

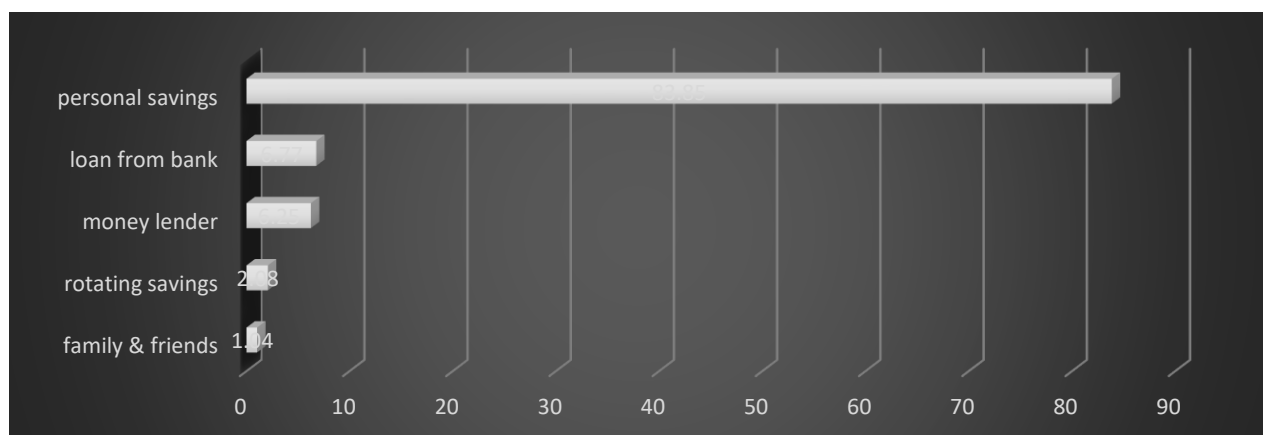
standard errors possibly. Correlation among independent variables affects the efficiency of model estimates. However, if the partial correlation value between independent variables is less than 0.8, it means there is no multicollinearity between independent variables (Gujerati and Porter, 2010). From Table 4.3, no statistically significant coefficient that is up to 0.8, therefore, no existence of multicollinearity problem among variables. The variance inflation factor result table also supports this (see Table 4).

**Table 3.2: Correlation Matrix**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) performance	1.000							
(2) capital accumulation	0.114	1.000						
(3) household expenditure	0.276*	0.225*	1.000					
(4) healthcare	0.184*	0.302*	0.380*	1.000				
(5) insurance	0.268*	0.135*	0.120	0.179*	1.000			
(6) debt payment	-0.038	-0.122	0.092	0.048	0.064	1.000		
(7) school fees	0.186*	0.224*	0.226*	0.224*	0.097	0.103	1.000	
(8) other expenditures	0.079	0.134*	-0.083	0.151*	-0.080	0.088	0.084	1.000

\* shows significance at the 0.05 level

Interestingly, Figure 1 depicts that majority (83.5%) of the businesses was financed from the personal savings of the business owners. Bank loans and money lender sources constituted 6.77% and 6.25% respectively while rotating coops savings was at 2.08%. Very few (1.04%) resorted to family and friends. These findings further confirm the argument that women-led micro-businesses thrives more on personally financed sources than institutionally offered business capital like the bank loan.

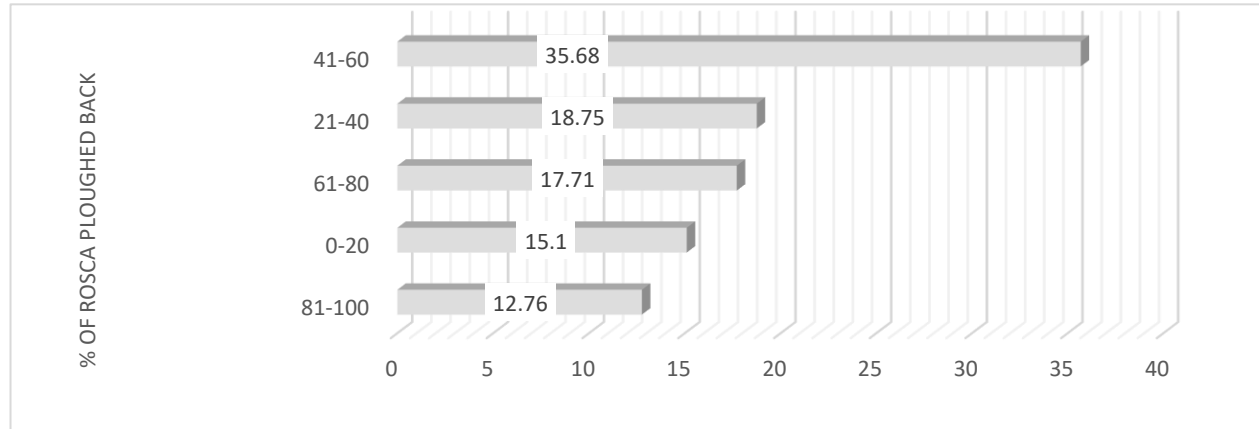


**Figure1: I finance my business through**

Also, Figure 2 shows up to 35.68% of the respondents ploughed back between 41-60% of their rotating coops proceeds into their business. While 18.75% ploughed back 21-

40% of the ROSCA proceeds. How much of the ROSCA being reinvested is dependent on other attendant exigencies to be met at home and other financial obligations.

% of ROSCA reinvested into the business



**Figure2: % of ROSCA reinvested into the business**

Table 3.3 shows the various analytical models used in the study to test the impact of ROSCA on the performance of the selected businesses. Model 1 is the ordinary least square with variance covariance estimates while models 2 to 5 show the results of the ordered generalized linear models expressing different measures of performance. However, the outcome variable used in model 1 is a composite measure of the performance using performance indicators (such New branch opening, customer satisfaction, sales turnover and profitability) extracted from the sum approach. Therefore, a scalar gives an aggregate measure of business performance. Similarly, ROSCA is measured as a composite measure of what ROSCA is used for (Yusuf & Ijaiya ,2009). In other words, ROSCA was measured as a combined measure of items that represent usage of the proceeds. These include, capital accumulation, household expenditure, health care and capital expansion. Therefore, Model1was used for the purpose of interpretation. Also, in a bid to facilitate interpretation, each covariate has been recoded to a binary variable showing the presence or absence of the spending pattern using ROSCA funding by the respondents (Yusuf & Ijaiya,2009).

In this light, ROSCA is positively and significantly driving the performance of these micro-businesses. However, when using the disaggregated model in Table 5, capital accumulation negatively drives those involved in ROSCA's business performance. Technically, a unit increase in capital accumulation decreases performance by 0.07 unit. By implication, the ROSCA proceeds spent on capital accumulation does not translate to an improved performance. Similarly, household expenditure also positively and significantly impacts business performance and with a unit increase(decrease) in household expenditure, business outcome responds by 0.39 unit. Health care also positively



drives performance. A unit increase in health care leaves 0.06 units of impact on business performance. Not clear how the word “unit” is being used.

Conversely, debt payment negatively impacts business performance. A unit increase (decrease) in debt payment decreases(increases) business performance by 0.09 unit. Expenditure on children's school fees positively affects business performance while other expenditures also positively affect business performance.

Overall, the joint assessment of the variables that proxied ROSCA have joint significant effect. By implication, the hypothesis that ROSCA significantly drives business growth is not rejected ( $F_{statistics}=4.8$ ,  $p<1\%$ ). The variables explained 14% of the variation in business performance while the remaining is explained in the stochastic disturbance. For further robustness check, the ROSCA composite measure was disaggregated to check the effect of each form of ROSCA expenses on the business outcome. Using model two, capital accumulation, household expenditure, healthcare, expenditure, debt repayment and children school fees were all significantly driving business outcome (see appendix).

**Table 3.3: Regression Estimates**

VARIABLES	(1) Performance	(2) customer satisfaction	(3) sales turno- ver	(4) Profitability	(5) new branch
ROSCA	0.20* (0.06)	0.95 (0.12)	2.24* (0.33)	2.23* (0.42)	1.87* (0.37)
Age	-0.12** (0.06)	0.64** (0.13)	0.79 (0.18)	0.92 (0.18)	0.80 (0.19)
Qualification	0.04 (0.03)	1.20*** (0.11)	1.06 (0.11)	1.04 (0.11)	1.13 (0.12)
Marital status	-0.05 (0.04)	0.91 (0.10)	0.90 (0.10)	0.61* (0.09)	1.06 (0.17)
Religion	0.01 (0.06)	1.07 (0.21)	1.12 (0.22)	1.12 (0.30)	0.77 (0.19)
Constant	2.34* (0.24)				
Observations	256	256	256	256	256
R-squared	0.13				
Pseudo R-squared	.	0.0118	0.0632	0.0971	0.0476

Robust standard errors in parentheses

\*  $p<0.01$ , \*\*  $p<0.05$ , \*\*\*  $p<0.1$

## Post Estimation Tests

Table 3.3.1 shows the results of the multicollinearity test. The overall VIF value is less than 10 showing the absence of multicollinearity test.

**Table 3.3.1: Multicollinearity Test**

Variable	VIF	1/VIF
Age	1.14	0.880982
ROSCA	1.13	0.886135
Marital Status	1.1	0.910262
Qualification	1.05	0.950076
Religion	1.01	0.98612
Mean VIF	1.09	

The significance of the brant test statistic shows the parallel assumption which indicated that the three outcomes in the target variable are not the same in magnitude has been violated in the ordered logit model, hence the need for the ordered generalized linear model (Williams,2006;2009).

**Table 3.3.3: Tests of the parallel regression assumption**

	Chi2	df	P>Chi2
Wolfe Gould	33.08	30	0.319
Brant	4506	30	0.000
score	1021	30	0.000
likelihood ratio	62.31	30	0.000
Wald	2.1e+04	30	0.000

Similarly, the complementary analysis using the interview outcome also shows ROSCA'S benefits were classified into five distinct classes. These include business expansion, funding children's education, loan repayment, and asset acquisition (see Figure 3).

On business expansion, this comes in terms of capital expansion and ROSCA proceeds re-investment. For instance, a female trader stated, "[...] *my purpose of acquiring it is for my business, I will purchase more goods [...]*". So, ROSCA guarantees business sustenance despite limited access to micro-credit-based finances. In some other instances, ROSCA proceeds was channeled to funding children's school fees. Paying school is yet another critical aspect of household expenditures and some cases falls on the women. So, to cushion the expenses from direct deduction from the business capital, periodic local contribution like ROSCA is used. Loan acquisition through the micro-credit scheme is

usually repaid using ROSCA proceeds just as the acquisition specific assets like business tools.

Reported ROSCA serves as their profit. In other words, it serves as an avenue to save up their daily profit and then get a lump sum after a period for business expansion.

*“Whenever it is collected, it serves as our profit [...]”* - [Female, frozen food seller]

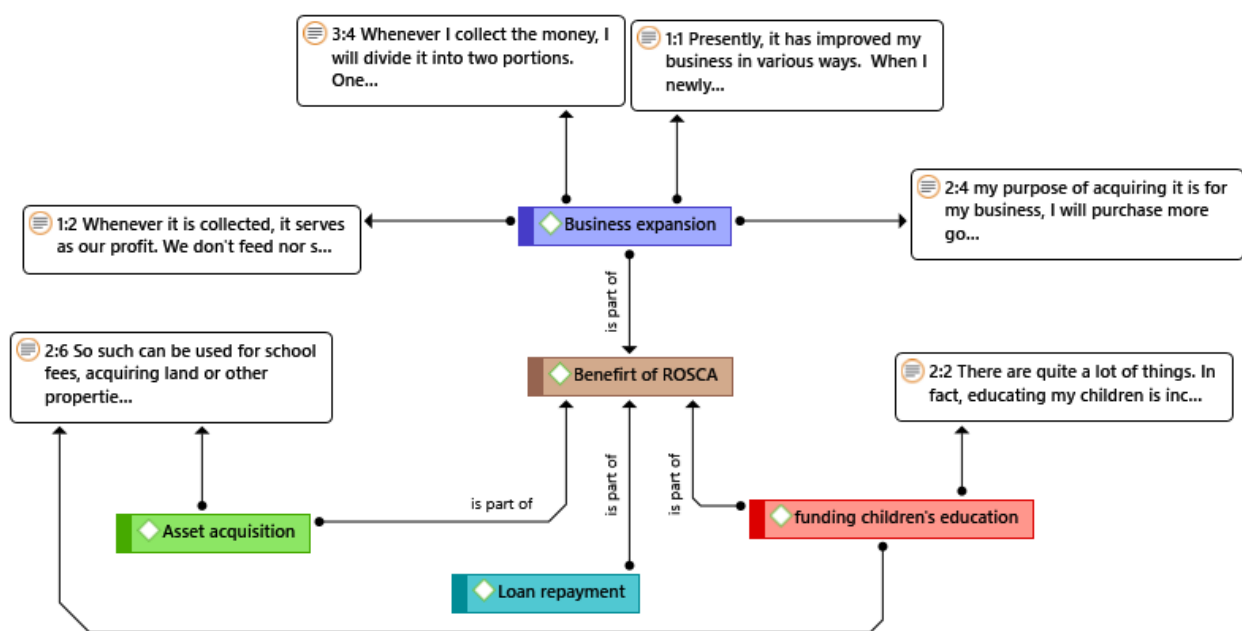
*“Presently, it has improved my business in various ways [...]”* – [Female, frozen food seller]

Others stated they pay their children’s school fees, land acquisition and other properties and loan repayment.

*“[...] can be used for school fees acquiring land or other properties [...]”* - [Female, trader]

Figure 3 shows the thematic framework relating ROSCA to its benefits based on the responses from the interviewees. In agreement with the quantitative findings, many interviewees mentioned ROSCA participation has left them with a number of benefits. These include, business expansion, funding children’s education, asset acquisition and loan repayment.

*“Whenever I collect the money, I will divide it into two portions. One goes into provision business while the other goes into rice and beans business.”* - [A female food stuffs seller]



**Figure 3: Semantic Network Showing the Benefits of ROSCA**

Source: ATLAS ti 9

**4 Discussions**

The study finds strong positive evidence for the effect of ROSCA participation on the business outcomes of rural women (see Table 3). Also, the majority of the women surveyed admitted they ploughed back between 41-60% of their ROSCA proceeds into their business (see Figure 3). The study also established that most of the sampled businesswomen did not finance their business only with ROSCA proceeds. Largely, ROSCA was seen as an alternative financial source to maintain the business and sort other expenses domestically (school fees, household expenditure, healthcare, and related expenses) that could solely be dependent on business capital and profit. By implication, instead of using business capital to pay for these exigencies, which could expose such business to potential risk of bankruptcy (as the largest percentage earn below the minimum wage), the ROSCA proceeds would be diverted to cater for such expenses. In turn, channeling the ROSCA proceeds to support the household expenses can increase women's influence at home (Niyonkuru & Barrett, 2021). Hence, the resultant effect of the ROSCA proceed helps to give a voice for the woman in the family while sustaining her business funding. This suggests the empowerment perspective to the ROSCA as an alternative financial source. This finding corroborated the finding of Mwambi, Bijman & Galie (2021). It is important to note that female entrepreneurial empowerment have a strong implication for the global sustainable development goals (Yang, Huang and Gao (2022). ROSCA and similar solidarity economic mechanisms should be encouraged as it provides members a reliable source of business finance without necessarily overdependent on the government. To hasten the achievement of the SDG goals, women empowerment cannot be solely left in the hand of agency based micro-credit credit schemes alone. ROSCA offers a significant socio-economic freedom and autonomy for the women entrepreneurs (Sedai, Vasudevan and Pena, 2021). However, as indicated by the varying challenges blighting the effective functioning of the group, it is essential a regulatory mechanism be installed to oversee the affairs of the group. Also, these results were confirmed with the outcome of the qualitative analysis which further underscores the role of ROSCA in financially empowering women in Nigeria. All the interviewees attested to the benefits accrued to the ROSCA participation most especially for their business and home exigencies. However, challenges such as default in loan repayment by members and occasional fund misappropriation by some of the leaders were prevalent.

**4 Conclusions and Recommendations**

The study, therefore, concluded that ROSCA significantly serves an alternative financial source for rural women and hence, help in empowering this economically vulnerable groups, especially at such a time with heightened business turbulence caused by

Covid 19 pandemic. For long-term/sustainable gender quality and women empowerment to be achieved, policymakers should work closely with men and women in rural areas to understand cultural conventions and gender power relations to reconcile them with achieving gender equality through initiatives such as ROSCA.

### Conflict of Interest

There is no conflict of interest

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## Appendix

**Table 3.3.2: Disaggregated Model**

VARIABLES	(1) Performance	(2) New Branch	(3) Customer Satisfaction	(4) Sales Turnover	(5) Profitability
capital accumulation	-0.07 (0.13)	0.03* (0.03)	1.28 (0.49)	1.06 (0.40)	0.72 (0.32)
household expenditure	0.39* (0.10)	3.69* (1.51)	1.16 (0.32)	3.19* (1.04)	2.67** (1.06)
health care	0.06 (0.08)	4.56* (1.82)	0.57** (0.16)	2.17* (0.61)	2.12** (0.68)
debt payment	-0.09 (0.07)	0.25* (0.10)	1.39 (0.35)	0.53** (0.14)	0.66 (0.19)
children school fees)	0.10 (0.11)	2.94** (1.36)	0.87 (0.25)	1.28 (0.41)	1.56 (0.65)
others	0.12 (0.08)	0.77 (0.28)	1.79** (0.45)	0.80 (0.23)	0.81 (0.25)
Age	-0.14** (0.06)	0.63*** (0.17)	0.65** (0.13)	0.71 (0.17)	0.84 (0.19)
Qualification	0.04 (0.03)	1.06 (0.12)	1.20*** (0.12)	1.06 (0.12)	1.05 (0.12)
Marital status	-0.05 (0.05)	1.07 (0.21)	0.89 (0.12)	0.95 (0.12)	0.63* (0.11)

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Religion	0.00 (0.06)	0.99 (0.32)	1.00 (0.19)	1.15 (0.24)	1.15 (0.31)
Constant	1.73* (0.53)				
Observations	256	256	256	256	256
R-squared	0.14				
Pseudo R-square	.	0.193	0.0236	0.0809	0.102
F-stat	4.81*				

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Robust standard errors in parentheses

\* p<0.01, \*\* p<0.05, \*\*\* p<0.1

## Cooperatives in Rwanda and the Building of Reflexive Agency: connecting positive peace and development

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### Abstract

The key objective of this study is to understand the pathways towards a peaceful living with sustainable and inclusive development, based on the case of Rwanda. Troubled by protracted cycles of violence and their aftermath, international organizations and nation-states are calling both civil society and enterprises, including cooperatives, to contribute with solutions. Understanding peace as positive peace (Galtung, 2011), this qualitative study focuses on Rwandan cooperatives in coffee, crafts, arts, transport, and tourism, including women-led cooperatives in these sectors, in the following regions of the country: Kigali, Gasabo, Kicukiro, Huye, Nyaguru, Nyamagabe, Musanze. Two fieldwork visits with interviews were carried out in 2018 and 2019. The same questionnaire was used in all group interviews, with differentiated questions only for the National Confederation of Cooperatives and the Rwanda Cooperative Agency. Atlas.Ti software was used in data analysis, with two main codes appearing: reflexive agency and impact multiplicity. Cooperatives' impact included social and community organization, education and training, health and nutrition, investment, solar energy uptake, women leadership and empowerment, voluntary contributions and participation in rebuilding the country, exports in economic sectors such as coffee, raising equality and building livelihoods. Following Archer (2013) modes of reflexivity, two main modes were observed: a) communicative mode requiring confirmation by others, and b) autonomous self-grounded mode leading to action. The study observes that cooperatives can contribute to building human capability, reciprocity, and reflexive agency through collective action. The practical implications for society and government are that such a positive peace building process, locally grounded and embedded, benefits all for the long-term and deserve full attention and support in policy planning. It is recommended that policy choices consider global challenges and changes to step beyond the usual economic thinking in terms of dichotomy between national needs of development for all on the one hand and attracting investment into infrastructure investments on the other. There are models of cooperatives that appear to be unknown to the country policymakers, which may respond to their country's needs. Visiting, learning from and listening to many other cooperatives in the world is advisable. Their model deserves further research, in particular regarding their impact multiplicity, avoiding a unilinear or unidimensional focus.

**Keywords:** reflexivity; positive peace; Rwanda, cooperatives, collective agency



## 1 Introduction

The key objective of this study is to understand the pathways towards a peaceful living with sustainable and inclusive development based on the case of Rwanda. Troubled by protracted cycles of violence and their aftermath, international organizations and nation-states are calling both civil society and enterprises, including cooperatives, to contribute to solutions. Cooperatives are recognized as post-conflict community-based organizations that are fundamental for rebuilding but are expected by some to be replaced thereafter. The second section on theory connects peace studies, cooperatives, and reflexive agency. The third section introduces the policy framework in which cooperatives have evolved and their numbers. The fourth section explains the methodology. The fifth section presents the findings related to cooperatives' contributions based on two fieldwork visits with interviews carried out in 2018 and 2019, followed by a discussion and conclusions. This is a qualitative study focusing on Rwandan cooperatives in coffee, crafts, arts, transport, and tourism, including women-led cooperatives in these sectors, as a sample in vital areas for peacebuilding and development. The methodology follows a constructivist grounded theory approach and is based on in-depth interviews on the one hand, and data collection on the other, during the field research mentioned above, plus a follow up work carried out at distance due to the Covid-19 pandemic. Main findings show that cooperatives have been offering the space and infrastructure for reflexive agency, building capabilities that connect positive peace with development. Examples and evidence of their efforts point to a long-term path towards fairness, equity, and a more just and inclusive economic development on a sustainable and peaceful basis. In conclusion, the study observes that cooperatives can contribute to building human capability, reciprocity and reflexive agency through collective action, provided the cooperative identity is acknowledged and respected in full. The practical implications for society and government are that such a peacebuilding process, locally grounded and embedded, benefits all and for the long-term.

Before discussing the case study, here is a brief background to help situate the reader. Rwanda is a landlocked country with the highest population density in Africa. There is an important tradition of solidarity and peaceful solutions to conflicts called *Ubuntu*, including *Seriti* or the life force of people connected in community (Francis, 2008) (Hailey, 2008). Sadly, the most important recent event has been the Genocide of 1994, a devastating trauma with about a million people tortured and killed, most of them Tutsis, and the destruction of large part of the country. Among the many analyses of what happened and why, Piton's PhD thesis provides remarkable evidence that the genocide was due to the '*racialization*' during the colonial period of social relations and their consequent instrumentalization after independence (Piton, 2018). Turshen (2001) explains how the international political economy of coffee, between deregulation,

liberalization and structural adjustment, struck the rural areas with structural violence: “the abrupt drop in the price of coffee, the principal income source for 60 per cent of Rwandan families, coupled with a 40 per cent currency devaluation in 1989 and rapid inflation after 1990; [and] a structural adjustment program that curtailed or reduced social services and charged for health care, schooling, and water, combined with a drought in the southern regions, which turned into a famine (Newbury, 1999)” (Turshen, 2001: 3). Women suffered particularly during the Genocide. One aggravating condition was that they lacked land rights, but male descendants could claim them. Massive rape, including by HIV-infected males, was called *kubohoza*, literally: liberate land (Turshen, 2001: 7). While accounts of Rwanda since 1994 may diverge, its general stability and gains in development have been undeniable. The International Monetary Fund data for Rwanda from 1980 to 2020 shows an average growth rate during that period of 4.97 percent.

## **2. Theory on cooperatives and positive peace: an approach to reflexive agency**

### **On cooperatives contributions to peace and development**

This study discusses how cooperatives contribute to both peace and development, in the case of Rwanda. The hypothesis is that cooperatives not only contribute after a shock or catastrophe but also foster local sustainable peace and development through reflexive agency for the long term. Cooperatives are positively seen as post-conflict community-based organizations fundamental for rebuilding (Ettang and Okem, 2016; Havers, 2007; MacPherson and Paz, 2015; Joy and MacPherson, 2007; Masabo, 2015; Parnell, 2003; Sentama, 2009; and Wanyama, 2014). By being both associations and enterprises with significant potential for peacebuilding, cooperatives deliver access to credit, decent jobs and livelihoods, help restart the economy after a shock, and solve the basic needs of the population. Why is this possible? Based on practical case research and theory, cooperatives provide a safe space for human interaction to rebuild trust, thus rehumanizing the other (Sentama, 2009). Cooperatives allow for both individual and collective empowerment, including gender empowerment (Masabo, 2015). They take care of community needs (MacPherson and Paz, 2015). Cooperatives cut away middle-men and stabilise food prices, preventing hoarding and improving livelihoods and nutrition (Havers, 2007). They reintegrate socially and economically demobilized soldiers and the disabled.<sup>11</sup> Yet, some people who still adhere to 20<sup>th</sup> century neoliberal policy ideas may take them for granted and transient as soon as things seem to be back to ‘normal’, including giving precedence to their seeking out FDI and/or funding for large infrastructure projects.

### **On cooperation and positive peace**

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<sup>11</sup> For example Japan JICA has helped form 34 cooperatives, in a project follow up to their Skills Training for the Reintegration of Demobilized Soldiers with Disabilities (2005-2008), <https://www.jica.go.jp/rwanda/english/activities/activity06.html>

One of the many vital matters of our time is achieving sustainable peace and development; and to better understand how to promote both together. First, studying peace-building in terms of 'positive peace' (Galtung, 2011) helps overcome the predominant focus in peace studies on 'negative peace' (Gleditsch, Nordkvelle and Strand., 2014). Galtung's 'peace formula' is equity x empathy over trauma x conflict. Equity, in Galtung's words, means cooperation for mutual and equal benefit; empathy to suffer or enjoy the suffering or joy of others; trauma stands for past violence dealt with by reconciliation; and conflict is solved by resolution. As the first two grow, the latter two may weaken.<sup>12</sup> Therefore, cooperation, mutuality, equality, equity, and empathy come to the fore, as *"peace is made neither by culture alone, nor by politics and economics alone. It is made by all three, synergistically. The formula for peace is always equality, equity, and mutual respect."* (Galtung and Fischer, 2013, p.153).

### **On collective action in the face of risk, inequality and violence**

Growing inequality does not only detract from development but also accentuates the risk for violence and strife. Inequality, in large part due to a shift favouring capital to the detriment of labour, ends by endangering both human development and social cohesion (Brada & Bah, 2014). The search for answers to protracted conflict and rising inequality remains relevant because, following Ulrich Beck, in late modernity, states and societies seem to be distributing risks rather than resources, and all suffer the consequences through wars, pandemics and impacts of climate change, while many suffer abhorrent violence and even genocide. In the context of protracted conflicts and violence, risk and vulnerability exacerbate inequality. Beck considers them as human-made crises, together with climate change and global financial crises (Beck, 2009).

Following Ulrich Beck, Margaret Archer, Fuyuki Kurasawa and David Held, human group capabilities are our hope to build a better future. Faced with human-made crises, we are compelled to respond to the present 'world risk society' through a wave of 'reflexive modernization' (Beck, 1986) built on solidarity (Beck, 2013). Even though Beck discussed reflexivity, he did not use the expression 'reflexive agency'. However, can there be a process of reflexive modernization without agency? Beck explicitly supported Kurasawa's attention to work-oriented 'sub-political' actors building solidarity, sub-political understood as civil society. Discourse and political struggles are not sufficient, work on the ground with a long-term vision being necessary (Kurasawa, 2004). Ulrich Beck thus opened the door to the reflexive agency as a type of agency, while Kurasawa (2004) affirms that this is done through group work on the ground, namely collective action.

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<sup>12</sup>Watch Johan Galtung's Peace formula by Niamh O'Connor, TranscendMedia, 2017, <https://www.youtube.com/watch?v=auP8mpjWr0w>

David Held (Held, 1992) proposes cooperative enterprises to redress inequality in a globalized, deregulated, debt-ridden era, where vulnerabilities mount and, in particular, in Sub-Saharan Africa:

*'If individuals and peoples are to be free and equal in determining the conditions of their own existence there must be an array of social spheres – for instance, privately and cooperatively owned enterprises, ... which allow their members control of the resources at their disposal'* (Held, 1992, pp. 27,35).

### **On reflexivity bridging agency and structure**

Reflexivity has become part of researchers' individual methodology and ethics. Thus, it is good to clarify how it can be applied to cooperatives and teamwork. Reflex, reflecting, and reflexivity are three words that are sometimes conflated, but do not have the same meaning. Reflex is the quick response to a stimulus, experiencing reception, transmission and reaction, outside a process of consciousness, even outside brain processes. Reflection is thinking backwards onto oneself (Finlay & Gough, 2003, p. IX)<sup>13</sup>, illuminating the shadows of our path and performance, and possibly that of others close to ourselves and our surrounding environment. We thus reflect on the 'who' and the 'why' of what we have done. Reflection is about introspection (Finlay, 2002). While reflecting is taking stock, reflexivity is devising. While reflecting is about sameness, reflexivity is about epistemological grounding, revised critically with others interacting among themselves, working or living together. Reflexivity includes reflection, not the other way around. Reflexivity should not be confused with reflectivity or self-reflection and needs to be applied to other domains beyond individual accounts such as those of academic researchers "to a collaborative, reflexive sensibility which is (ethically) mindful of the wider contexts" (Lumsden, et al., 2019, p. 16).

Margaret Archer's 'reflexive imperative' offers a similar argument, but instead of Beck's 'reflexive modernization', she proposes 'reflexivity' as a normal human capacity mediating mechanism between structural habituation, social interaction, and structural elaboration, becoming imperative in our times to respond to crises. Archer proposes three positive modes and a negative one: a) communicative requiring confirmation by others, b) autonomous self-grounded leading to action, and c) meta-reflexive as critically reflective and about action effectiveness in society (Archer, 2013). The negative mode is that when agency is blocked, disoriented. Like Kurasawa, Archer acknowledges that voluntary association and group work can be grounded in collective reflexivity:

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<sup>13</sup> Reflection can be defined as 'thinking about' something after the event. Reflexivity, in contrast, involves a more immediate, dynamic and continuing self-awareness.

*“ the members of a voluntary association orient themselves towards the properties and powers of what they generate together, It is then possible to sustain joint action and co-commitment that is grounded in a collective reflexivity.” (Archer, 2013, p. 8).*

### **Working definition of Reflexive Agency**

In this study, the working definition is the following: reflexive agency is a type of agency in late modernity, a capability that all normal human beings have in the face of multiple, intersecting and combining incalculable human-made risks that can bring about the disregard of the most vital norms of human existence. Reflexive agency is able to effect change towards a more sustainable and peaceful future, re/building and using resources reflexively. This late modernity agency can be experienced through group and teamwork on the ground.

### **3. Policy Framework on Cooperatives and Numbers**

This section introduces the number of cooperatives and the legal and regulatory framework, as well as key motivations from the national government, national representative and international organizations. As neither reflexivity nor collective action happen in a vacuum, this provides an insight into both the ecosystem and the needs that cooperatives have responded to.

#### *National policy and numbers*

Cooperatives appeared in very limited number and under tight control before and after independence in Rwanda (Musahara, 2012). The first official document was the Cooperative Ordinance of 1949, considered as a tool to extract labour in colonial times (Ministry of Trade and Industry, 2018, p. 13), with a revision in 1988. After the genocide, in 2005, the government set a Cooperative Task Force, approved a new cooperative policy in 2006 and passed the first comprehensive legislation in 2007. In 2008, it established the Rwandan Cooperative Agency (RCA) as registrar and promotor, also regulating SACCOs (savings and credit cooperatives). The minimum number of persons to establish a cooperative was 10. The new law allowed for Unions and Federations. Unions connected at least 3 cooperatives in the same territory or district, while federations were understood as business federations with a double role, advocacy and building value chains. In 2018, more than 3.6 million Rwandans had joined cooperatives, namely 55.3% of the population.<sup>14</sup> In 2020, RCA reported 5.2 million members. Table 1 on statistics shows their numbers by economic sector, their membership and their share capital in Rwanda Franc (FRW) for 2020. In 2021, according to national statistics, there were

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<sup>14</sup> [http://www.rca.gov.rw/uploads/media/Statistics\\_on\\_cooperatives-March\\_2018.pdf](http://www.rca.gov.rw/uploads/media/Statistics_on_cooperatives-March_2018.pdf)

about 9.500 cooperatives. In 2018, there were 141 Unions<sup>15</sup> and 15 Federations<sup>16</sup>, and all were members of the National Cooperatives Confederation of Rwanda (NCCR), the national representative organization. Between 2005 and 2017, cooperatives' share capital grew from 7.1bn FRW to 42.1bn FRW, while a survey of 500 cooperatives indicated an accumulated investment of 240 billion FRW (Ministry of Trade and Industry, 2018, p. 18). Table 1 shows the number and percentage of cooperatives by economic sector, the number of members and their percentage of the total number of cooperative members in the country, and their share capital in FRW in 2020.

**Table 1. Cooperatives in Rwanda in November 2020**

Economic sector	Number cooperatives	co- %	Cooperative members only real persons allowed- total	%	Share Capital FRW
Agriculture	4706	47.35	1,130,539	21.5	9,927,897,225
Services	1685	16.95	258,470	4.9	4,408,108,108
Trading	1420	14.28	251,032	4.8	9,270,654,208
Handicraft	1112	11.19	90,813	1.7	2,047,199,430
Housing	210	2.11	48,925	0.9	5,272,768,338
Transformation	167	1.68	28,825	0.5	791,062,708
Mining	127	1.27	107,622	2.1	666,286,100
Other	74	0.74	110,608	2.1	498,431,800
Subtotal	9501	95.61	2,026,834	38.6	32,882,407,989
SACCOs (credit and savings cooperatives)	437	4.39	3,219,670	61.4	18,218,682,753
<b>TOTAL</b>	<b>9,938</b>	<b>100</b>	<b>5,246,504</b>	<b>100</b>	<b>51,101,090,742</b>

Table by the author based on (Rwanda Cooperative Agency, 2020b, pp. 2,8).

*Note: this table does not count unions and federations that appear in the source, because they include the first-tier cooperatives here above and could carry double-counting. The economic sectors follow the number of cooperatives in the country except for the SACCOs.*

SACCOs - Savings and Credits Cooperatives - are considered micro-finance in Rwanda. In 2018, Rwanda had 459 microfinance institutions in total, of which 439 were SACCOs. Of these, 416 were Umurenge, namely sectoral, thus working with cooperatives in a same area and economic activity. More research is needed to explain why there were two fewer units in 2021, such as merger or closure.

15 One cooperative Union is formed of at least of three primary cooperatives operating in the same value chain

16 One Cooperative Federations is formed currently by at least of three Cooperative Unions operating in the same value chain.

How did the new cooperatives come about after the genocide and how did the government look at them? Immediately after the genocide, some were supported by foreign donors and projects in the coffee sector to restart the economy and exports, but most of them appeared with the 2007 law. The trauma left a trail of horror and fear, and, according to interviews, people found difficult to work together after the genocide. Associations were slowly formed with the support of foreign individuals, universities, and non-profits. Many associations then turned into cooperatives after the 2007 law. Two other explanations help understand the passage from associations to cooperatives and how the latter were so strategic: a) the 2011 report to the IMF and b) the Pearl Project.

a) The 2011 MINECOFIN progress report to the IMF explains that promoting cooperatives was part of a strategy to achieve several strategic goals: to reduce donors' duplication efforts except in the health sector (page 64), to improve nutrition (page 131), to reduce youth unemployment (page 49), to channel entrepreneurship and labour in the urban areas (page 67) and to provide marketing channels after the remarkable growth in agricultural production, of which cooperatives were the significant success factor (page 42). (MINECOFIN, 2011).

b) The Pearl Project was a fundamental project to restart the coffee sector<sup>17</sup> and increase export revenues. It was the first of its kind, followed by others such as the WB, the EU, SNV from the Netherlands. This also means that the project was key to the emerging policy towards cooperatives in mid-2000s because the Pearl project started a few years earlier. "PEARL helped facilitate measurable outcomes that linked the work ... to successful development and poverty reduction...the farmers benefited significantly from increased resources, higher income, better health, and relevant education" (Collins, 2012 Fall ). The coffee sector was set as priority as it was contributing to 41 % of GDP and 90 % of total employment. During my field visit in 2018, the National Cooperative Confederation of Rwanda – NCCR was very active in sustaining this latter process, in terms of marketing, cupping, supporting cooperatives needs, visiting them.

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<sup>17</sup> "Between 2001 and 2003, the NGO provided approximately \$600,000 financial and technical assistance to nine cooperatives 11, with 85% of the funding allocated to four entities: COOPAC (\$300,000), UCAR (\$105,000), ABAHUZAMUGAMBI, commonly referred to as Maraba (\$77,000) and IAKAKA/Karaba (\$42,000). Seven of the nine cooperatives, with the exception of UPROCA and COOPAC, were assisted by the PEARL Project for coffee production, processing and marketing." (USAID, 2006). The project was extended for another 3 years (Collins 2012).

According to Katawarba – NCCR Chairman, the dairy and potato sectors were also priorities. In the dairy sector, NCCR was inspired by Amul’s model in India<sup>18</sup>. In the case of cassava, after a pest ruined crops countrywide in 2016, the federations met with the Ministry of Agriculture at the government level and went together to Uganda to get more resistant seeds. This led to success in ensuring a key national food staple. NCCR was also advocating for better infrastructure to raise the value-added in various activities.<sup>19</sup>

A strategic government policy has been regional integration. Cooperatives in the region have actively participated in consultations and contributing to the East African Community Cooperatives Bill 2014, which still awaits to be approved at government level. This bill would help cooperatives reach a level playing field on a par with other economic actors and develop the necessary capabilities to continue contributing to national development.

#### *A pillar in building a peaceful future*

At the Genocide Memorial in Kigali, cooperatives are explicitly acknowledged as part of the country’s foundation for a peaceful future. They appear in the same panel together with the mention of women’s empowerment, education and healthcare for all, economic growth, and the government vision, with the aim at empowering and developing Rwandan living conditions. This has been a hallmark in terms of government policy. The Kigali Memorial is part of the emergence of a new international politics and practice of memory, but this Memorial panel acknowledges the link between cooperatives and positive peace.

National policies acknowledging cooperatives in development have been wide ranging: from cooperatives improving access to health with the *mutuelles de sante* (namely health mutuals), nutrition, housing, renewable energy, women rights, access to savings and credit (with their local SACCOs), accumulating capital investment, to building value chains for exports and ‘industries without smokestacks’ (IWSSS)<sup>20</sup> such as transport (moto taxis, car taxis and trucks), logistics, crafts, arts, and tourism. Cooperatives have been important in the National Programme providing small livestock animals to members and within communities. Laws against gender-based violence were accompanied by reforms of the Penal Code to facilitate

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<sup>18</sup> See ‘The Amul Model’ in India at <https://amul.com/m/about-us>

<sup>19</sup> Interview with NCCR Chairman Dr Augustin Katawarba and Gerald Ngobonziza of 19 June 2018.

<sup>20</sup> Smokestack is a type of chimney. Used in industry is a basic manufacturing industry that generally has gas stacks or chimneys releasing polluting, it releases byproducts of combustion into the air, such as carbon dioxide and nitrogen. Africa could better compete in global markets with ‘industries without smokestacks’ such as services and agroindustry (Newman et al., 258, 260-261).



reparation, and women received powers to own property and land. This facilitated the creation of cooperatives, as women organized.

Cooperatives have donated materials, volunteered labour, and gave money to build or rebuild schools and clinics, while in the countryside interviewees also mentioned rebuilding or repairing small roads and bridges during and after each rainy season. Cooperatives have helped in the uptake of solar energy at household level, as well as all having to pay a specified sum under government requirement for health services. They have also participated in programs to improve the roofs of houses or the materials with which houses were constructed with, to improve health and living conditions.

Regarding financial inclusion, 22 % of adults were members of sectoral Umurenge SACCOs, advancing formal access to financial services. As people have a high level of trust in SACCOs and proximity to them is best, they are the “ideal candidate’ for formal inclusion” (FINSCOPE, 2008).

### **National Development Plans and International Financial Institutions (IFI)**

In documents by international organizations since 1999, policy on cooperatives can be traced under the IMF and World Bank Poverty Reduction Strategy Programmes (PRSPs), especially from 2005 until 2014, after which cooperatives are not mentioned in the IMF reports. Cooperatives still appeared strongly in WB, FAO as well as Rwanda’s reports to the IFI.

Since 2008, Rwanda has implemented state-led development plans: two five-year Economic Development and Poverty Reduction Strategies – EDPRS (2008-12) and EDPRS-2 (2013-18) – in view of its Vision 2020, with nested sector-specific strategies and district development plans. Rwanda National Strategy for Transformation (NST1) is their successor for 2018–2024 based on Vision 2050. After cooperatives did most to rebuild the country and social cohesion, the institutions that supported them turned to foreign investors.

Since the end of 2018, with the arrival of a new director at the RCA, a new path is envisaged with the idea of merging SACCOS<sup>21</sup> to establish a cooperative bank with a head office possibly outside Kigali (interview with the newly appointed RCA director in 2018), and of promoting information technology, and new management practices (MINICOM, 2018 January). In 2019, the World Bank promoted leaving cooperatives

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<sup>21</sup> See SACCO merge, at <https://www.minicom.gov.rw/news-detail/plan-to-establish-a-co-operative-bank-to-merge-saccos-is-near-completion>

out of consultations in price setting, “SMEs to energize private entrepreneurship”, and mechanization linked to “Reforming cooperatives”. (World Bank, 2019 June 25).

The WB report states that sectoral cooperative federations such as in rice and tea, more organized, could bring better support services such as finance, agglomeration, marketing, and equipment. Large farms by Rwanda standards are mostly members of cooperatives by 70 %. The WB call for clarity of ownership, accountability and transparency in cooperatives is sourced just once from foreign authors (namely Zeuli, Cropp, and Schaars 2004, Idem, page 39). Without any reference to recent national or other international research, the World Bank calls for making more land available to foreign investors because Special Economic Zones are costly (Idem, page xiv). FDI at lower costs would bring in investor-led growth (World Bank, 2021).

The 2020-2025 RCA Strategic plan, which guides national policy on cooperatives, details three main goals looking for change: economic, social, and governance (Rwanda Cooperative Agency, 2020a, p. 2). RCA roles is to supervise SACCOs as well as cooperatives in utilities The document explicitly says that it abides by the International Cooperative Alliance - ICA Statement on the Cooperative Identity<sup>22</sup> (Rwanda Cooperative Agency, 2020a, p. 15). The Cooperative Law of 14 May 2021<sup>23</sup> gives RCA powers to provisionally suspend “leaders and employees” and call for a cooperative general assembly after that, as well as applying Imhigo or performance contracts to cooperatives’ members and not only the cooperative as such. The text provides no definitions, being a list of possible components. The role of local authorities is reinforced.

Since 2005 and in view of Vision 2020, the Rwandan national government had the view that, like in the post-war period in Europe, cooperatives could be key to national development in peace.<sup>24</sup> Vision 2020’s Umurenge Programme showed the national elite commitment to redress high poverty rates and inequality that could hinder stability. It had a double track of sorts: infrastructure versus people: “*the programme design was approved by the government... with targets for infrastructure development, in particular, in tension with those of poverty reduction* (Lavers, 2016)”. In 2008, Vision 2020 Umurenge (meaning sector) Programme had donor support, with a focus on public works, unconditional direct support for the disabled and the promotion of financial literacy and

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<sup>22</sup> See the international cooperative movement definition by ICA at <https://www.ica.coop/en/cooperatives/what-is-a-cooperative>.

<sup>23</sup> Law N° 024/2021 of 27 April 2021 *Governing Cooperatives in Rwanda*, Official Gazette n° Special of 14 May 2021, repealing the 2007 Law (RWA-2007-L-85124 of 18 September 2007). Text at the ILO Natlex website <http://wcmsq3.ilo.org/dyn/natlex/docs/ELECTRONIC/112290/140287/F1143983128/RWA-112290.pdf>

<sup>24</sup> Interview 2018 with NCCR Chairman Katawarba, Kigali. He was replaced after the new RCA Director came in 2018.

credit to persons. Cooperatives were an important component of it. Vision 2050 still mentions cooperatives, but the focus is on large infrastructure projects and FDI.

#### **4. Materials and methods**

This is a multi-unit qualitative case study (Yin, 2018) of cooperatives in Rwanda after the genocide. Three types of cooperatives were selected in particular after a study of the literature: 1) women's cooperatives or cooperatives led by women, 2) cooperatives linked to nature such as natural parks and tourism, and 3) cooperatives exporting crops that are key to the country: coffee and tea. The last two were selected not only because they are key export products, but also because of the link between coffee, land, and the conditions leading to genocide. Women-led cooperatives were important because of their importance in both peacebuilding and the rebuilding the country (Bayisenge, 2015, pp. 3-4,24, 47; Musahara, 2012, p.6). Kadende-Kaiser (2012) makes a similar argument for Burundi. Crafts and arts, tourism and transportation responded to other criteria: these are industries without homestacks that have become significant contributors to GDP and employment. In the case of Rwanda, transport and logistics are essential to competitiveness and African regional integration.

In 2018, in Kigali, interviews were held with members of the ceramics cooperative of Twa, transport cooperatives CODACE and ATAK, long transport and logistics cooperative COCTRAMAVK, construction cooperative ADARWA, the women cooperative in crafts AMAHORO AVA HEJURU. This was followed by visits with interviews in Nyaguru and Nyamagabe, the tea cooperative COTHENYA, the coffee cooperative NYAMINGA, the tea growers cooperative KOBACYAMU. In Huye, the coffee growers cooperative MARABA ABAHUZAMUGAMBI. In Musanze, the artisans' cooperative COOPAVU, and COOJAP, and the eco-tourism cooperatives. Interviews followed a semi-structured questionnaire applied in group settings. Cooperatives were visited in the following regions of the country: Kigali, Gasabo, Kicukiro, Huye, Nyaguru, Nyamagabe, Musanze. In addition, the Rwanda National Confederation of Cooperatives (NCCR) and the Rwanda Cooperative Agency were interviewed. The questionnaire stated that the focus was on cooperatives contribution to sustainable development with social cohesion, and for laying the peaceful foundations of living together, if any. It was also stated that it was believed that cooperatives also depended on the support from others such as cooperative confederations, federations, the cooperative movement at large, the government and other partnerships to build on their potential and deliver successful, inclusive and sustainable growth. Besides, it was explained that there was an interest in understanding how cooperatives may be part of a process of change. Questions to the Confederations discussed they work they did, planned, studies of cooperatives, data, potential contribution to local development, SDGs, and the history of cooperatives including before and after the Genocide. Did cooperatives offer a difference compared to other types of organizations or enterprises? Did they contribute to the

community and how? What were their relations with the Government, the cooperative movement worldwide, and other organizations? Questions to cooperative members and managers dealt with their work, the organization of their routines, the history of their cooperative including solving conflicts and challenges, all types of contributions to the members including income generation, learning skills, cooperative rules and meetings, mediation in disputes or conflicts, savings, resilience to natural, social and economic disasters, women participation and initiatives, if there was any type of celebration and solidarity among them and how could this be explained, whether members paid the same sum or different sums in anything including logistics and transportation and why, if they had changed or innovated in anything. The NCCR secretary was present and kindly helped in translation between English and Kinyarwanda. Some interviews were in both English and French and cooperative members also contributed in translating what they were talking about.

Several areas and sites of each cooperative were visited. Besides, public authorities and representatives of cooperatives at the national level were interviewed. Finally, photographs and other material was collected. Some photographs are included at the end.

The methodology follows a constructivist grounded theory approach (Strauss, 1987; Corbin and Strauss, 2015) and is based on in-depth interviews and data collection during the two field research trips carried out in 2018 and 2019. The first one lasted a month, and the choice of areas was related to those areas who had suffered the most during the genocide. The second one was shorter, visiting some of the same cooperatives, others came specifically to Kigali to meet, sharing with them observations through an open dialogue, listening to new developments. This study has thus the limitations not only of time but timing, as the new 2021 law and policy changes in course call for further research. Atlas.Ti was used in the analysis, and after coding, the major code was 'reflexive agency' as a type of agency that helps reconcile diverse requirements and sometimes conflicting demands in a peaceful cooperative manner with the goal of community social cohesion with both local and national development. Another key code was 'impact multiplicity' where cooperatives contribution was multiple and interactive, showing a learning process.

Ethical considerations in research on peacebuilding in post-conflict settings were omnipresent due to the trauma still present and because the concept of peace can be interpreted in various ways. First of all, conclusions are based on the cooperatives visited with the goal of understanding how they contribution to both peaceful and sustainable development, together with factors that may be conducive or restrictive, and to grasp to which extent their contribution may be the result of public policy, and whether this potential contribution remains, expands or phases out after a certain period.

Three types of challenges are worth mentioning: discussing certain issues such as members in cooperatives and whether they belong to any particular group to be able to discuss how cooperatives help in reconciliation. There are several PhD and MA theses on this aspect, but this was explicit in the questionnaire. Interviewees could naturally explain the situation, and some said they had members of both groups. A second challenge concerning research on peace generally, when the first and dominant idea of peace is security or so-called 'negative peace'. To explain 'positive peace' at the beginning of any meeting was out of the question, because it would have overdetermined the discussion. The solution was to focus on the elements of Galtung's peace formula, contributions to equity, equality, empathy, and harmonious resolution of conflicts, including mediation, facilitation, finding solutions in cooperation, and the types of contributions to development they felt were important to them. In addition, the dialogue could include mentioning challenges and how they solved them, and whether they had projects for the future.

### **5 Main findings: Impact multiplicity on development**

Evidence is presented from the interviews and discussions undertaken during the visits to the cooperatives mentioned in the section on Methodology. There were multiple simultaneous types of contributions to a peaceful living with development among which the following: collective organization and identity, education, skills, health and food security, capital investment, renewable energy, women leadership, voluntary solidarity, exports and growth with increasing equality and reconciliation.

#### **Cooperative organization and identity**

Cooperatives that existed before the genocide were few and disappeared. The *banques populaires*<sup>25</sup> gave way to the SACCOs that helped small farmers or growers and villagers save for their needs and those of their families. Except for a few such as coffee cooperatives, most cooperatives were formed following the national policy and legal framework about 10 years after the Genocide once people had regained some trust and experienced in working together in associations. According to interviews, such a process facilitated their conversion into cooperatives: *"First of all, we were an association called Athenya since 2001. In 2005, we got legal personality. Secondly, with the national cooperative policy, we transformed into Cothenya, with legal personality in 2010."*

Cooperative members were proud economic leaders in that they were leading exporters and growers in the tea and coffee sectors. Small growers were members of

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<sup>25</sup> These were cooperative banking societies operating before the Genocide. The first one was created in 1975. In 1986, they set up a Union. In 2018, this Union was turned into a commercial bank and in 2021 it was bought by KCB Kenya (Njorogue, 2021).

tea cooperatives in the vast majority, but only by 50% in coffee, working with the Rwanda National Agriculture Export Board. In tea, “around 69% acreage is under growers’ cooperatives that are into two categories cooperatives with consolidated tea blocks” (Rwanda National Agriculture Export Board (2018, page 20). In coffee, washing stations were being built and enlarged. A key problem was that coffee growers found some cooperatives’ processing plants too small and resorting to middlemen to sell part of the produce. Larger cooperatives had built different channels to sell in the local and national market on the one hand and in the international market on the other. In 2021, as the policy framework seems to veer towards profit-making partnerships, the recent initiative of a large fertilizer plant shows that the government concerns about rising import costs and productivity, but also recognize that financial pressures will be borne by small farmers and growers.<sup>26</sup>

Many cooperatives organized along sectoral lines. Crafts were the most difficult of all to organize, as shown in the only case during the research that was not fully active. The cooperative had a wonderful location, crafts and building, but organized tours bypassed them early in the morning and returned with tired tourists directly to their hotels. Many cooperative members were therefore working their agricultural plots and had taken other jobs, while a few would maintain open the craft cooperative.

### **Education and Training**

Education and training were both a need and request. University education on cooperatives did exist in a limited fashion. There were a few courses at two smaller universities but not at the University of Kigali or in business courses. NCCR personnel was limited and constantly travelling to meet cooperatives’ needs. RCA was also considering hiring more personnel. On the other hand, cooperatives looked for support from others such as international non-profits, fair trade networks, universities in the USA, cooperative organizations in Germany, to name a few. Cooperatives had accountants, agronomists, trainers in their sectoral activity, licensed experts in customs and logistics.

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<sup>26</sup> See Edwin Ashimwe, 2021 December 21, The New Times, “The development follows a joint venture partnership reached between Rwanda Fertiliser Company Ltd (RFC) and OCP Africa (OCP), a subsidiary of the Moroccan public-private company OCP Group, one of the leading phosphates producers in Africa... “The issue remains to strategically subsidize or find financial mechanisms for affordability of the farmers,” said Bucagu [Deputy Director General of Rwanda Agriculture Board], adding, “Incentives will be needed.”, <https://www.new-times.co.rw/news/fertiliser-plant-be-complete-next-year>

### **Health and Nutrition**

In health and nutrition, cooperatives had a vital role in various aspects such as encouraging vaccination, in initiatives against malaria.

*“Every cooperative contributes to the health mutuals...”. Cooperatives have also been very active to achieve Zero hunger: “There was no rice in the country before, we imported 100 %. Now about 60% of our total consumption is produced by cooperatives... In maize, now it is widely produced by cooperatives”*

### **Cooperatives and Investment**

Cooperative members described being recipient of programs providing small livestock, but also donating (paying previously for the animals) or helping distribute the animals within the villages or communities. Cooperatives were expected to invest in irrigation equipment, tackle drought-induced food shortages, rebuild small roads and bridges after the havoc of the rainy seasons. They were receiving government-backed training in post-harvest handling and managing produce. The Government subsidised irrigation equipment by up to 50 per cent of the cost.<sup>27</sup> Interviews took place before the COVID-19 pandemic so they could not cover this situation.

### **Cooperatives and Solar Energy**

In terms of solar energy, in the rural areas, cooperatives paid for the farmers first, and the farmers paid them in instalments.

### **Cooperatives and Women Leadership and Empowerment**

Concerning women leadership and empowerment, like in Parliament, cooperatives were required to give 30% seats to women in elections and seats. Many women survivors became members of cooperatives after the Genocide. Women have been vital in reviving agricultural activities, they used their knowledge in crafts to rebuild livelihoods and they had a key role in the Gacaca courts serving as presidents, but they also worked as taxi drivers and mechanics. *“A vast network of women’s groups such as... cooperative societies ... used an entry point for peacebuilding and reconciliation in Rwanda.”* (Issifu, 2015). This research saw women leading cooperatives in the crafts and tea sectors. Women were members in logistics and trucks cooperatives if their husbands passed away, even if they did not drive the trucks themselves. In that way, they could maintain their families.

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<sup>27</sup> See for example, Emmanuel Ntiringanya, New Times Today 18 October 2019 <https://www.new-times.co.rw/news/rwanda-targets-zero-hunger-next-six-years>

### **Cooperatives and Voluntary Participation in Rebuilding**

Voluntary contributions and participation in the Umuganda: cooperative members participated in the Umuganda Community service day to rebuild the country. In interviews, depending on their financial capacity and working tools, they also donated sums of money, bricks and building materials, they used their trucks to take construction materials to build/ rebuild clinics and schools. In 2006, Imihigo (known also as performance contracts) was introduced.

### **Cooperatives and the coffee sector**

The coffee was strongly rebuilt with the efforts of cooperative members. Maraba is the district with highest percentage of victims during the genocide. The name of the cooperative Abahuzamugambi means "those who have a common goal", and some members were refugees returning home. Their plants are of the Arabica Bourbon variety. During the interview, they explained that:

*"The Maraba coffee cooperative started as registered cooperative in 2002 with 37 members and were 1340 in 2018. It started with one washing station and grew up to 5 in different areas ... It all started after the genocide, in 1998... together in an association, both men and women. ...USAID supported us, the Maraba government and a US person from the Pearl Project, plus the University of Uganda and the University of Michigan. In 2002 the Government and the Pearl Project advised us to turn into a cooperative. This helped in constructing the station".*

*As association, members had no ownership and no profit. With the cooperative, member - owners earn money, get their coffee washed for free, better quality and at higher price with the conditions to get marketing. With the association, members continued to produce ordinary coffee, which was only local and for the local market. With the cooperative, the price we get is higher, and we got export markets. From 1000 it went to 6000 FRW/KG."*

Approximately 70 % of surplus returns to cooperative members, and the rest is reinvested in the cooperative. In 2007, the cooperative MARABA established a cooperative group called Rwashoscco<sup>28</sup> with five other cooperatives: *"With cooperative shares in it, equal shares and equal profits. We meet with tourists. And it helps us with markets."* At the place, during this research, there was a large room for tasting and tourists, and a coffee bar. The National Agricultural Export Body have tasters coming on site to certify them for fair trade, and they export through the National agricultural export board. *"Better to work as cooperatives although fair trade can work with associations. This is because cooperatives are registered and have legal identity."*

<sup>28</sup> <http://www.rwashoscco.com/>



The social contributions to community as cooperatives were many: through community work, as well as individually. They give members loans through small groups (money every week) from January to July and after the season and harvest they pay back, without interest. If members seek a loan for the next six months, interest is 12%. The cooperative has 32 savings groups with 36 people each, meeting in person. The idea of local SACCOS was key to them:

*"We have enough capital now. We ...prefer [to have] it rather than taking our money to other SACCOS.....For cooperative meetings, we meet in groups every month and make sure that all groups have met by the end of the month. Our general assembly meetings take place once per year. We also meet twice a year for Board meetings, formed by member from all different zones. We are encouraging youth to join in as mothers and fathers get old."*

*The Maraba Cooperative was also helping pay health insurance, the mutuelles de sante for those who cannot pay, helping the survivors of genocide, and give money to pay for events too. Members work to repair bridges destroyed by rainfall. It gives money to the authorities and the sector to pay for the local works. In election times, we donate to buy the election boxes, the decorations, ...where people vote.*

Not only cooperatives restarted the economy, but they continued to sustain rebuilding and innovate in products, outcomes and solutions for cooperative members and their communities. Not only they cared to build equality but also empathy and solidarity, establishing routines and practices that lasted.

The Nyaminga Cooperative of Coffee Growers works in the Nyaguru District. They got advice to register as cooperative from the RCA and to put up a washing factory. They got government land and asked the National Agricultural Body for a loan and mortgage. Members gave their own houses as collateral. The cooperative had five Board members, three Supervisory committee members, and are four staff: an accountant, a manager, and two agronomists. From 6 am to 12 pm they worked in the field in their plots, then went home. The groups explained in the interview and while touring the washing station that: *"In common, , we have four fields and a station that is important enough to buy from other producers"*. The Nyaminga Cooperative works with the NGO Sustainable Harvest and Women for Women. In 2014, the President of the Cooperative looked for help from NGOs to train women in budget management.

The Cooperative Chairwoman explained their interest in nature and sustainability, and work with Sustainable Harvest: *"We tried first as beekeepers but stopped because we failed. Bees are killed by pesticides. After came Sustainable Harvest, who trained us in groups and that lead to an increase in the number of cooperative members"*. When they had troubled with

managers, they sacked them. And selected new staff from the local university through exams and an open call. The women had bought each a dress for city functions, bought with part of the cooperative surplus, that they had allocated, and for which they felt proud. They also bought goats for each member and invested in their cooperative building. A woman member wanted to share her testimony:

*“I was a new member after receiving training from Women for Women and Sustainable Harvest, I joined the cooperative in 2017. Having education is the most important aspect for me and my children. Then to have health insurance. I can help my husband. Being with other people, I am not only at home all the time. I can get other things, clothes. I get to know now what happens outside! In the past, only men cultivated coffee. Now, I know about it and get profit from it. “*

### **Equality and livelihoods**

Interviewees expressed that they were heard by others, included, sometimes celebrated by the community, the local authority, or the national government, after the genocide but in particular since 2005. They described their own cooperatives as contributing to equality, livelihoods and reconciliation, and conflicts eventually dealt through dialogue.

*“You cannot explain it [the genocide], the country ‘had no image’, every person was miserable, full of hatred, fear, hopeless, there was suicide, revenge. Being in a cooperative, we talk, we agree, at the end of the day, we come to a consensus. The only solution is to work together. You’ll see the difference now, we have values, lots of programs with initiatives on poverty, reconciliation”.*

Rwandan interviewees also shared personal stories of how cooperatives helped them survive, overcome trauma, build solidarity, and reconcile with themselves, others, and society in general. Koperative Amahoro Ava Hejuru in Kigali was founded in 2004 as an association by women, including survivors of the Genocide. Amahoro means peace. During the interview<sup>29</sup> they explained:

*“We had no internal rules to bind us, no strategic plan, we worked in a disorganized environment. After a while, we were able to generate revenues, we opted to apply to be recognized cooperative, and in 2009 we were granted a registration certificate as cooperative. Some of us are widows and orphans, we used to be street vendors, builder, helpers, and we could also get small orders in the market for sewing clothes. Now we are able to produce over 70 different products. The program of cooperatives, we realized that it’s a*

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<sup>29</sup> Interview 21 June 2018 with all members of Amahoro Ava Hejuru.

*good program to develop ourselves and be able to get out of poverty. We increased our skills that enabled us to have creativity."*

The women of Amahoro Ava Hejuru had made a large quilt that was hanging on the wall. The quilt showed the country with red lines and a cross, and women hands exchanging a Peace basket at the top and a drinking jug at the bottom:

*"The quilt tells the story of our lives, families and the hope for our country Rwanda. Our peace was stolen by the Genocide. .... At Amahoro, we have come together from different backgrounds, and we joined together. This quilt is part of our true peace, we share our lives together as we sew together"*

With their headquarters in Gikondo, the work of sewing was used to get out of poverty but they had other projects and initiatives:

*"We have a vision of expanding our sewing activities to other places and helping our fellow women by teaching them so that they are also able to get out of poverty. We joined our savings and bought ourselves a house one after the other. Now we send our children to school and even the university. We also helped one of us get married, because she was expelled from her family after her father remarried and could not receive the dowry. One of us adopted her, and her aspiring fiancé went to meet her there. It was good to see the happy ending."*

Valorization of both productive and reproductive life and wider care is observed. Their resilience gave way to solidarity, their inter-personal ties led way to the possibility of marriage. Their business showed signs of sustainability as they had completed paying the credit they had for their large cooperative building. They paid for their dwellings and children needs. The cooperative offered space to deal better with the trauma of being a survivor and they had future projects. The bearing of trauma causes a rupture (Edkins, 2006) from settled understandings that were previously considered commonsense. This shattering provides an openness to 'reflexive agency' through cooperation and mutual help.

## **6. Discussion on Cooperatives, reflexive agency and positive peace**

Socializing by way of reflexive agency can further the sense of belonging through material and governance practices. Cooperatives may be a mobilizing vector with the potential of aligning for change and transformation from a past crucial event onto a resilient present and hopeful future. Land and Roessl provide similar evidence for Austria and Germany (Lang & Rößl, 2011). Cooperative members see themselves as part and value of a common shared initiative. They express a degree of interpretive competence in identifying and analysis what was a common good to them. Such a collective agency

can be identified as reflexive agency. Besides, in order to re-act to problems and challenges, they base their actions on modern forms of solidarity compatible with individual freedoms and self-realization (Rehg, 2007)

This notion would call into question the idea that, in building sustainable peace and development, top-down policy implementation is sufficient. Local stakeholders' reflexive agency appears necessary to their achievement, provided that collective actors such as cooperatives are appropriately supported and their business model and identity respected.

Explanations given as to why they felt better or more secure being owner and member of cooperatives, responses ranged from being able to establish trade and market relations, access credit, being able to sign transactions in terms of buying land and property, raise savings, and felt empowered generally. They were proud to have established cooperative enterprises and expressed that their contributions to society and economy were made clearer in that way, through a cooperative. Responses linked up positive peace to development with equality and equity. Reflexive agency takes place through reflexivity modes (Archer, 2013). Throughout interviews and dialogue, communicative, autonomous, and meta-reflexive modes, explained in Section 2, appeared in a non-linear continuum of shared experience. In terms of requiring confirmation by others or communicative reflexivity, various interviewees expressed that, on the one hand, they wanted to abide by the law; while on the other they gave evidence of increasing reflexive autonomy leading to action as expressed in common points: as cooperative members they could register nationally and thus be able to trade and work across the country and abroad; they all had to work while, previously, as associations, only the leaders got involved and benefitted from the association's network. Members were now able to save capital, individually and together in the cooperative, which enabled them to invest or try new projects, start new activities and/ or scale up what they already had, while before it was not possible. However, there were also expressions of challenges, some failures in specific initiatives and actions, either due to climate change, to unsustainable practices in agriculture or to mismanagement. They expressed awareness and will to change, and explained in detail when they had already taken action as cooperative to deal with difficulties.

Women also expressed a feeling of empowerment and safety regarding their work, their children, their living conditions, even their capacity to buy a decent dress. In all cases, cooperatives continue to work with NGOs including international ones, and, in 2018, they were looking to further collaboration and projects. They all brought up that they were paying taxes which supported the country's reconstruction, while previously as associations they did not. In fact, Italian social cooperatives underwent a

similar learning process, from being associations and turning to social cooperatives in the 1980s to make their work and mission stand the time.

## 7 Conclusions and Recommendations

When looking at Rwanda's programmes by the national government as well as by supporting international organizations, cooperatives appear to have had a prominent role in a variety of activities and economic sectors (e.g. in coffee, Boudreaux, 2011; in maize, Ngaboyisonga et al., 2011; in rice, Ngango, 2012; in milk, Kayitare and Mutesi 2018; in tourism Nyungwe Forest National Park (n.d.)). Their rapid growth offers a vantage point to observe the potential contributions of cooperatives. Cooperatives have been mainly expected to be a vehicle for inclusiveness and effectiveness in terms of economic development and agricultural performance, but not only. They have been fundamental in providing a safe space, building trust, learning how to live and work together again, build savings, housing, invested and donated materials, money, and work to build or rebuild schools, clinics, bridges, or roads during or after the rainy season, have been vehicles for renewable energy, nutrition programmes, health, to a name a few.

Cooperatives showed to be successful in finding solutions through networks, solidarity, markets, innovation, mediation, and strength through equality, mutuality, and reciprocity. The main findings show that cooperatives offer the space and structure to build reflexive agency through collective action. Examples and evidence of their efforts indicated a long-term path towards fairness and equity. Reflexivity was centred not only on achieving specific goals as stated in policy, but also on which were the most appropriate ways and means to do so, their cooperative reflexivity evolving as they worked through the normative connotations and value of their actions. Together, they were taking care of themselves and their families, their community, their district and country, and the relations they were building among themselves and with nature.

Data analysis identified two main Archer (2013) positive modes: a) communicative requiring confirmation by others, and b) autonomous self-grounded leading to action. Held (1992) beliefs about cooperatives stated in Section 2 seem right but, instead of being free from any direct interference, reflexive agency shows that cooperatives can build collective agency through a learning process bridging needs and constraints, including from other organizations and institutions. This process enables cooperatives to build and sustain positive peace. Their efforts focused on fairness, equity, and a more just and inclusive development. In conclusion, cooperatives can contribute to building human capability, and reflexive agency through collective action, provided their cooperative identity is acknowledged in full.

The timing of policy choices is decisive because the world is constantly changing. Applying top-down neoliberal policies from the late 20<sup>th</sup> century to human-made crises of the 21<sup>st</sup> century bringing about incalculable risk may not work. Supply chains as well as economic globalization are under heavy strain in COVID-19 times. Mobility, transportation and logistics, and light industries such as tourism and services, may be suddenly heavily restricted. Just like the proposal of avoiding smokestack industries (Newman et al., 2016), development choices may be reshaped, getting industrial policy and the re-shoring of enterprises back on the agenda of developed countries.

There are models of cooperatives that seem unknown to the policy makers. This would require visiting, learning and listening to many cooperatives in the world and not just a few. Based on in-depth interviews on the one hand, and data collection on the other, cooperatives seem to enable reflexive agency, while engaging in advocacy and reconstructing capital in various forms. It is fundamental that the cooperative identity is respected and not to destabilize large parts of the population who are cooperative members, especially in the difficult times of a pandemic and post-pandemic. Cooperatives are enterprises with a well-defined but flexible business model, and until 2019, they and their members were able to contribute with their efforts to rebuild the country's economy and society from a positive peace perspective. Their model deserves further research, regarding their impact multiplicity. Future research should avoid taking a unilinear or unidimensional focus. New national policy developments hint at the continuing dichotomy in economic thinking between national needs of development for all, facing poverty and inequality, on the one hand, and of attracting investment into large infrastructure investments on the other. This also raises concerns as to the level of knowledge of cooperatives by the younger policy officials. Understanding better the evolution of the country's younger elite commitment (Rehg, 2007) to development with equality for a peaceful living economy can be part of further research. The practical implications for society of this study are that such a peacebuilding process, locally grounded, takes time but is beneficial to all not only for the short but also for the long-term. Therefore, policy frameworks need to take the evidence into account, not only quantitative but also qualitative data to grasp the process of change and include appropriate support to cooperatives in their policy plans. In general, more research on the roles that cooperatives have in building positive peace would be highly welcome.

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## Conflict of Interest

The author declares hereby there is no conflict of interest.

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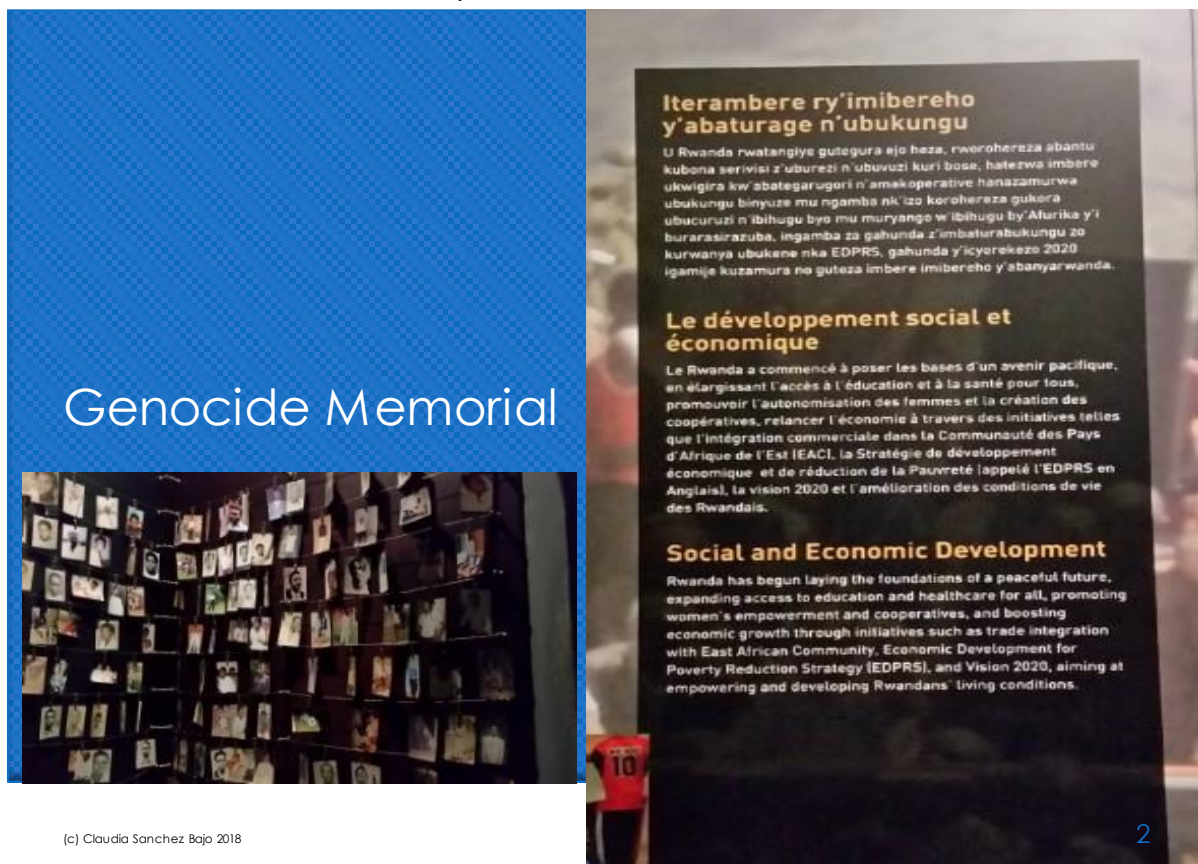


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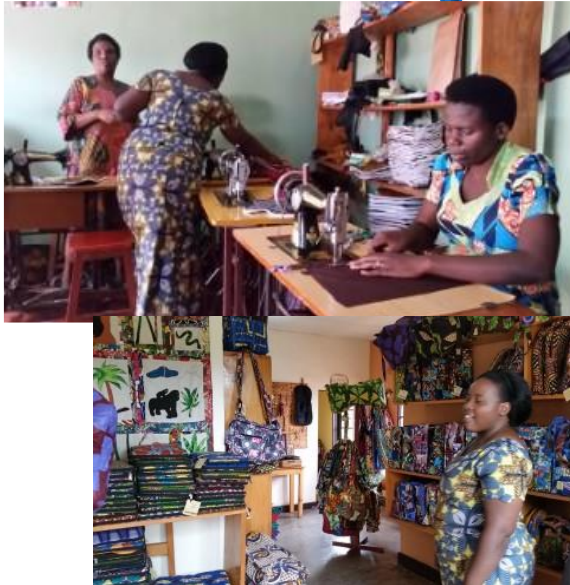
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## Dimensions of peacebuilding AMAHORO COOPERATIVE

- Resilience – Solidarity
- Personal - Marriage
- Business – Sustainability
- Dwelling and housing
- Family – Children
- Survivors – Trauma
- Future - Projects



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## Dimensions of peacebuilding MARABA COOPERATIVE

- Credit without usury
- Partnerships – solidarity
- Exports Quality –Diversified marketing
- Small Producers - Inclusion



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