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Financing MSMEs Green Growth, Resource Efficiency and Cleaner Production in East Africa

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Abstract

Resource efficiency, including cleaner production and energy efficiency (CP/EE), play an important role in supporting Africa's sustainable growth in the future. Since the 1990s both the governments and development agencies in Africa have promoted such strategies to help firms reduce their negative environmental impact while enhancing their economic performance. The main objective of this study was first to explore opportunities and constraints for the commercial financing of micro, small and medium enterprises (MSMEs) for resource efficiency and cleaner production (RECP) projects in East Africa (EA), and to develop a sustainable financial scheme for firm-level RECP programs; secondly, to interrogate financing opportunities for RECP advisory services allowing for the growth of the RECP agenda and providing the opportunity to make RECP programs self-sustaining; and thirdly, to increase the use of, and investment in RECP technologies by Enterprises (Industries and MSMEs) in EA. A survey was undertaken across EA and stratified sampling was used to ensure all the partner states were included in the sample. A mixed method approach was used where both primary and secondary data were collected. The sample size comprised of 36 financial institutions and 42 enterprises across the EA region. Key respondents across the industries were interviewed, and a semi-structured questionnaire was used. Quantitative data was analysed by descriptive analysis using SPSS and presented in form of frequency tables. Content analysis was used for the qualitative data and then presented in prose. A hybrid kind of scheme(s) was

developed. The study recommends a guarantee scheme whereby the government and or development partners provide guarantee to commercial banks at 50% and the enterprises would be required to raise 50% collateral to unlock funding to enterprises. However, most MSMEs indicated the lack of capacity to raise the 50% collateral hence the study proposes a revolving fund supported by the development funds to set aside a kitty to cater for this category of enterprises. Additionally, a rigorous process has been put in place to implement these two models of financing. Through the study formulation of managerial policy and practice that promote better RECP practices and green growth will be operationalized.

Keywords: Financing, Green Growth, Resource Efficiency and Clean Production

1. Introduction

Studies document that resource efficiency, including cleaner production and green growth, critically contribute to fostering future sustainable growth. A number of governments and development partners have continued to support strategies to help firms decrease their environmental impact while enhancing their economic performance (Ashton et al. 2002). Governments employ economic tools, such as lending programs, pollution taxes, charges and fees and subsidies which are designed to encourage firms to adopt environmentally sound practices by increasing the penalties or by decreasing the investment required and providing other economic benefits to those who adopt them. However, many firms, mostly MSMEs, continue to shy away from implementing resource efficiency practices due to the fact that they are regarded as being more problematic or less profitable compared to other investments. The introduction of policies, regulations and incentive programs to engage MSMEs in resource efficiency, needs to be cognizant of the barriers MSMEs face in adopting them (Ashton et al. 2002; McEwen 2013; Lewis and Cassells 2010).

Public funding alone cannot adequately deal with the great challenges of climate change and environmental degradation in the East Africa region. Private sector engagement and mobilizing private sector investment in the advancement of climate change mitigation and adaptation efforts, particularly in Resource Efficiency and Cleaner Production (RECP) activities of the industrial sector is essential. RECP provides investment options for win-win opportunities in many industries grappling with pollution in the EA region.

The cleaner production concept has been defined as the “continuous application of an integrated preventative environmental strategy to processes, products and services to increase efficiency and reduce risks to humans and the environment” (UNEP, 1994).

Since its conceptualization, cleaner production has been applied in 72 countries around the globe, using the experience of industrialized countries and their commitment of providing developing and transition countries with methods, practices and techniques for more sustainable production, by building national structures - the national cleaner production centers, and technical capacities – the national experts, in order to ensure further scaling up and replication of cleaner production applications.

Based on the experiences gained through the years, the cleaner production concept has been developed, expanded and redefined as “Resource Efficiency and Cleaner Production”; the new definition makes the logical connection between the productive use of resources, reduction of waste and emissions and the enterprises’ productivity and competitiveness and refers to “the continuous application of preventive environmental strategies to processes, products and services to increase efficiency and reduce risks to humans and the environment, addressing all three sustainability dimensions individually and synergistically” (VAN Berkel, 2015). It leads to production efficiency through productive use of natural resources in all production stages; environmental management through minimization of the adverse impact of the industrial activities on nature and the environment; and human development through minimization of risks to people and communities.

Resource efficiency and cleaner production programme jointly initiated by UNIDO and UNEP, aiming to enhance resource efficiency and environmental performance of firms in developing and transition countries, provided for the first time a strategic and coherent approach for mainstreaming and upscaling activities and results of National Cleaner Production Centres, nationally, regionally and globally.

As a result of 17 years’ intensive work undertaken by the National Cleaner Production Centres (NCPC’s) around the world, thousands of companies have benefited from the adoption of sustainable solutions, which contributes to improving their resource efficiency, increasing their productivity and at the same time, decreasing their negative environmental impact. RECP solutions are typically identified and assessed during intensive and time consuming in depth plant assessments, often requiring advanced expert knowledge and massive technical support to applicant companies. However, in order to ensure transition to more sustainable production systems, application and adoption of RECP methods, practices and techniques, those should be mainstreamed, scaled up and expanded beyond the in depth assessments and have higher impact on more companies, while investing less time and effort. This could be achieved by replicating well-known solutions and best practices.

Developing regions place importance on micro, small and medium enterprises (MSMEs) due to the fact that they play a critical role in economic

development and growth. They constitute 90% of the firms in Africa, contribute 25% of the region's GDP and represent 50% of employment (CAF 2016).

MSMEs usually face less scrutiny for environmental enforcement in most parts of the world due to the fact that individually they are small quantity generators (SQG) with regard to pollution, though in totality their pollution may be large (de Cerreño et al. 2002). This may be even more so in EA, as innumerable MSMEs are part of the informal economy, that is, they are unregistered and completely outside the purview of environmental regulators and enforcement. This therefore leads to the need to deal with the environmental issues among MSMEs in order to achieve a sustainable future in EA.

Studies document that MSME largest barriers to implementing RECP initiatives is lack of capital. This realization motivated our research in this area with the aim of gaining a deeper understanding of the challenges associated with financing RECP and identifying strategies for tackling this barrier. This study seeks to document the constraints for the uptake of financing for resource efficiency in MSMEs in EA region, why these limitations persist and how they can be overcome.

Currently, the adoption by firms of RECP initiatives is considered a social responsibility since on one hand it concentrates on environmental management and on the other hand focuses on a continuous improvement of the product (Alaña-Castillo et al. 2017).

Nevertheless, the adoption of the RECP initiatives and strategies in Micro, Small and Medium Enterprises (MSMEs) is not easy due to the fact that they lack information about the RECP concept and new technologies. Zhou and Zhao (2016) were of the view that the MSMEs owners often see climate change as an abstract problem that does not affect them and that they are not directly responsible for environmental issues. Additionally, the lack of finance for research and innovation, and the lack or absence of "green" credits for environmental projects also reduces the adoption of RECP (Bernal et al. 2016, Vieira and Amaral 2016). To surmount these barriers, Klewitz and Hansen (2014), who analyzed the strategic sustainability behaviors of SMEs between 1987 and 2010, found out that interaction with external actors (e.g. customers, authorities, research institutes) is an essential part to achieve a sustainable development of MSMEs. Another important aspect to support the transition is to foster a "green" company culture among staff and managers (Rizos et al. 2016).

1.1 Research Objectives

The main objective was to determine the opportunities and constraints for RECP, its advisory services and develop a sustainable financial scheme for firm-level resource efficient and cleaner production programs.

Specific objectives

- i. Explore opportunities and constraints for the commercial financing of micro, small and medium enterprise (MSME) for RECP projects in EA.
- ii. Interrogate financing opportunities for RECP advisory services allowing for the growth of the RECP agenda and providing the opportunity to make resource efficient and cleaner production programs self-sustaining
- iii. Develop a sustainable financing model to increase the use of, and investment in, resource-efficient and cleaner production (RECP) technologies by MSMEs in the EA region.

2.0 Empirical & Literature Review

The cleaner production concept has been defined as the “continuous application of an integrated preventative environmental strategy to processes, products and services to increase efficiency and decrease risks to humans and the environment” (UNEP, 1994). Since its conceptualization, cleaner production has been applied in 72 countries around the globe, using the experience of industrialized countries and their commitment of providing developing and transition countries with methods, practices and techniques for more sustainable production, by building national structures - the national cleaner production centres, and technical capacities – the national experts, in order to ensure further scaling up and replication of cleaner production applications.

Based on the experiences gained through the years, the cleaner production concept has been developed, expanded and redefined as “Resource Efficiency and Cleaner Production”. The new definition makes the logical connection between the productive use of resources, reduction of waste and emissions and the enterprises’ productivity and competitiveness and refers to “the continuous application of preventive environmental strategies to processes, products and services to increase efficiency and decrease risks to humans and the environment, addressing all three sustainability dimensions individually and synergistically” (Berkel, 2015). The three dimensions include; production efficiency through productive use of natural resources in all production stages; environmental management through minimization of the adverse impact of the industrial activities on nature and the environment;

human development through minimization of risks to people and communities.

Resource efficiency and cleaner production programmes, with the aim of enhancing resource efficiency and environmental performance of businesses in developing and transition countries, provided for the first time a strategic and coherent approach for mainstreaming and upscaling activities and results of national cleaner production centres, nationally, regionally and globally. Through the national cleaner production centres (NCPC's) around the world, thousands of companies have benefited from the adoption of sustainable solutions, which contributed to improving their resource efficiency, increasing their productivity and at the same time, decreasing their environmental impact. RECP solutions are typically identified and assessed during intensive and time-consuming in-depth plant assessments, often requiring advanced expert knowledge and massive technical support to applicant companies. However, in order to ensure transition to more sustainable production systems, application and adoption of RECP methods, practices and techniques, should be mainstreamed, scaled up and expanded beyond the in-depth assessments and have higher impact on more companies, while investing less time and effort.

Studies have unveiled that due to the scale of the East Africa region and its environment and climate-related challenges, public funding alone may not deliver successful and less polluting enterprises. Programmes have demonstrated the effectiveness of using public funds to catalyze private sector investment in clean and efficient production. This public support helps overcome perceived risk of investing in the new RECP approach and shows the private sector that profitability and corporate, social and environmental responsibilities are aligned and are not necessarily mutually exclusive. The study aims to expand on this engagement, leveraging successful partnerships to bring in new elements, such as creating sustainable financing mechanisms for RECP and creating synergies between the financial institutions, industries and national cleaner production centres.

Lending to MSMEs has traditionally been seen as presenting more risk of default compared to lending to large, established private firms and government-owned institutions. Additionally, conventional banking is subject to complex application procedures and collateral requirements which in most instances do not favour the MSMEs. Studies indicate that a risk-share programme improves volume of credit to MSMEs that have been on a downward trend over the last five years. In Kenya, this has been exacerbated by capping of interest rates. Credit Guarantee Schemes help de-risk MSME lending by providing partial guarantees in the case of default.

This study considered a number of schemes in various sectors across the world for incorporating RECP in their operations. This included; Firstly, a

roadmap for scaling up resource efficiency in Israel based on the experience from the UNIDO MED TEST II component, implemented as part of the SwitchMed programme. The roadmap addresses all aspects of mainstreaming resource efficiency in Israel and offers a wide range of instruments to respond to the needs of industries, from technical assistance at management and policy level to financing opportunities, aligned to the regulatory system.

Secondly, In Romania a study on scaling up RECP for a sustainable industrial development recommends that undertaking RECP initiatives calls for a systematic and continuous approach for identifying and evaluating the current inefficiencies and monitoring the enterprise level results. Solutions are proposed to intensify applications of RECP methods, practices and techniques and innovative approaches are used to facilitate the expansion of RECP application and transfer of existing experiences and best practices to a larger number of enterprises.

Thirdly, AfDB has successfully implemented a credit guarantee scheme for fertilizer financing in Africa. This scheme was conceived as an initiative to improve agricultural productivity by providing finance to “debottleneck” the use of fertilizers. This study further provides solutions to identifying financial institutions, beneficiaries and the technical assistance required.

2.1 Barriers to Adoption of Resource Efficient and Cleaner Production

Lack of knowledge relating to the RECP initiatives and new technologies remain one of the key hindrances in the implementation of the RECP strategies by Small and Medium Enterprises (SMEs). SMEs often consider climate change as an abstract problem that does not affect them and that they are not directly accountable for environmental concerns (Zhou and Zhao, 2016). Additionally, the lack of financial resources for research and innovation, and the lack or absence of "green" credits for environmental projects also hinders the adoption of RECP (Bernal et al. 2016, Vieira and Amaral 2016). To reduce these barriers, interaction with external actors (e.g. customers, authorities, research institutes) is an important aspect to achieve a sustainable development of SMEs. Fostering a “green” company culture among staff and managers also plays a critical role (Rizos et al. 2016).

The barriers to adoption of resource efficiency measures in almost all sectors are both external and internal. Internal barriers are entangled in company management systems such as low levels of awareness and skills amongst the workers. External barriers are largely outside of the firm's capacity to change including access to technology and cost of finance.

A low awareness of environmental issues. Some sectors e.g. the tea, may have conceptual obstacles to Resource Efficiency and particularly, where

this involves changing to a cleaner technology or retrofitting existing equipment. The conceptual obstacles include; underrating the potential of embracing cleaner and greener technologies; and having a high resistance to new changes.

Information and skills: A key hindrance to the increased implementation of energy, water and/or material efficiency and alternative energy sources is the lack of access to appropriate information and expertise. Resource efficiency provides great potential to improve MSMEs' competitiveness. Many times, they lack the ability to take advantage of such opportunities because of ignorance. Firms lack information about appropriate alternative cleaner technologies, thus contributing to risk and uncertainty regarding the adoption of these technologies. Even to the extent that they are aware of these opportunities, a lack of appropriate skills and expertise prevents them from acting upon them.

Difficulty in accessing cleaner technologies: Investment in cleaner and greener technologies such as solar thermal, redesigned drying fans, variable speed drive motors, waste to energy among others, is a major decision for factories to undertake. In addition, costs of the new technology will be substantial which may discourage them from adopting it.

Difficulty in accessing external finance: Lack of access to finance makes it difficult to implement cleaner and more efficient technology. Most industries lack the ability to make commitments in cleaner technologies due to a number of financial reasons including lack of available external capital and the absence of appropriate funding mechanisms with longer term repayment periods.

Institutional support: the support of the institution in RECP is paramount as it ensures commitment on behalf of the firms. This includes support in mobilizing financial resources.

Policy and sector guidelines: Kenya has developed a Green Economy Strategy and Implementation Plan (GESIP) to guide the country's transition towards a green economy. All sectors of the economy are required to align their policies and operations to deliver in this. Further, the country's commitment in her INDC to reduce GHG emission by 30% by 2030 requires that various sectors put in motion strategies and activities that will contribute towards this reduction. Most industries as noted from the field engagements across the region lack specific green industry policies and guidelines to inform green innovations to contribute towards these targets.

3.0 Methodology

3.1 Research Design, Data and Sampling

This study was carried out across the East Africa Community partner states and will be implemented in all the five partner states (Burundi, Kenya,

Rwanda, Uganda and United Republic of Tanzania). The study focused on both the supply side and the demand side analysis. The demand side entailed assessing the demand for financing from SMEs in the EA region for RECP measures; assessing the scope and constraints for increased RECP investments and borrowing in priority sectors (e.g. awareness of profitable investment opportunities, profitability and cash flows, cost of borrowing); and assess support and incentives needed for MSMEs to prepare bankable RECP projects and request commercial financing. The supply side was to unearth current practices of financial institutions concerning the financing for RECP projects. Specifically, the supply side analysis was to provide details on existing financial products and mechanisms in the market, the prevailing policy environment, and determine existing gaps related to sustainable financing for RECP. It also sought to unearth the demand and willingness to pay for advisory services in accelerating the adoption of RECP and growth within the industry.

A mixed method approach was used and both primary and secondary data were collected. The sample size consisted of 36 financial institutions and 42 enterprises across the EA region. Key respondents across the industries were interviewed, and a semi-structured questionnaire was used. Other key respondents included; the Executive Secretary Lake Victoria Basin Commission (LVBC), key government officials in Ministries of Environment and Industry within partner states, LVBC regional project coordinator, LVEMP Kenya National Cleaner Production Project Coordinator, and the respective country National Environment Management Authorities (NEMAs) heads.

Secondary data was collected through literature review based on documents provided by NCPCs and internet search of relevant papers and case studies. This search focused on various sectors such as: environment, health, agriculture, natural resource management and the review of experiences gained by scaling up projects of eco-efficiency practices in industry. Comparative analysis was also used to assess the financial schemes that have worked elsewhere and determine their applicability in the EA partner states.

The study used a semi structured self-administered questionnaire to collect data from the respondents. Quantitative data was analysed by descriptive analysis using SPSS and presented in form of frequency tables. Content analysis was used for the qualitative data and then presented in prose.

The data collected was prepared, coded, analysed, organized and used to report the findings as well as results of tests of hypotheses. In getting the data ready for analysis, data editing, standardization, coding and categorization was undertaken. Descriptive statistics which included measures of central tendency were computed.

4.0 Results

4.1 Response Rate

This study undertook a survey and study of 36 financial institutions and 42 enterprises across the EA region. Seventy-eight (78) questionnaires were sent out and seventy were returned and all were correctly filled. The returned questionnaires consisted of thirty-three from financial institutions and thirty-seven from enterprises across EA. The response rate was 92% from financial institutions and eighty 88% from enterprises. This rate, amounting to 90% averagely, is considered adequate and comparable to previous studies such as Kirimi (2012) who reported a response rate of 60.9%. To ensure that the questionnaires were filled by officers with appropriate knowledge of RECP, the respondents were asked to indicate their current position in the firm. The study also required that key industry sectors for each country were included. Figure 1 below shows the sectors and respondents per country.

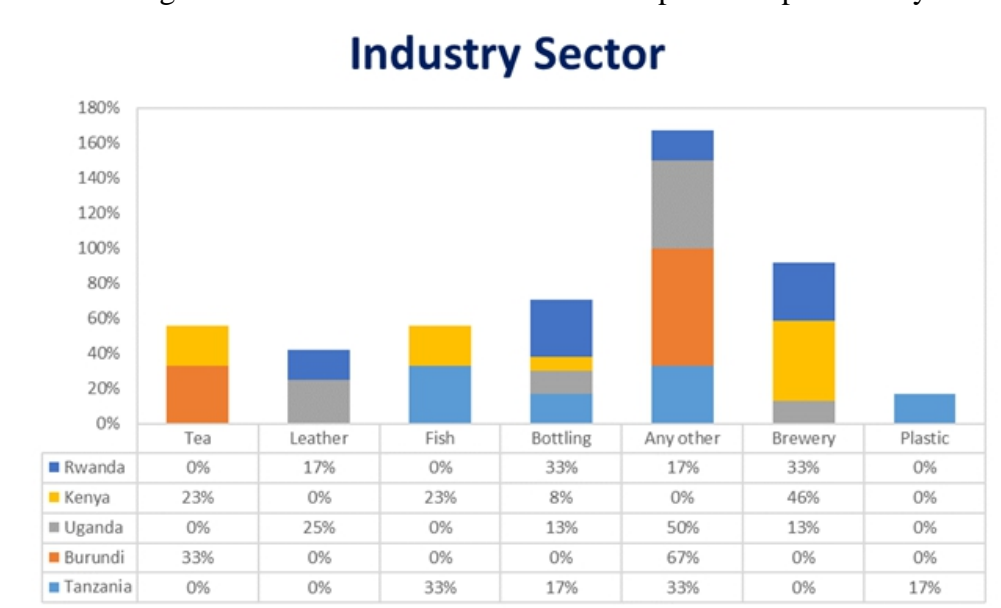


Figure 1 – Spread of respondents per country and sector

4.2 Demand Side Analysis

4.2.1 RECP Initiatives across the East Africa Industries

The MSMEs across the world have experienced tremendous growth with attendant negative impact on the environment, more so in the EA partner states. The importance of resource efficient and cleaner production cannot be overemphasized. For industries to improve on their margins/yields, they must deliberately and consciously have a policy on RECP initiative at the core of their strategy. The survey of 36 financial institutions and 42 enterprises across the EA region unpacked and measured RECP implementation across the East

Africa region in relation to RECP financing. Based on the results from the survey across the EA partner states, the firms interviewed confirm that they have been exposed to various RECP programs and are at different levels of implementation.

Developing water efficiency and effluent reduction options, developing materials efficiency and waste reductions options and energy efficiency options are the most implemented RECP programs across the EA region. For developing water efficiency and effluent reductions, the percentage results showed high recordings across the 3 countries; Tanzania 100%, Burundi 67%, Uganda 86%, except for Kenya at 17% and Rwanda 32%. From the figures established, Kenya ranks low in implementing this RECP initiative (developing water efficiency and effluent reductions). For developing materials efficiency and waste reductions, it showed high scores in terms of percentages across the 5 countries; Tanzania 100%, Burundi 83%, Uganda 86%, Kenya 84% and Rwanda 83%. This initiative is of the uttermost importance; all the countries have above 70% scores. For energy efficiency options the percentages across the countries were as follows; Tanzania 83%, Burundi 67%, Uganda 43%, Kenya 84% and Rwanda 67%. Tanzania and Kenya are the leading countries in implementing this initiative. Figure 2 explains the details of all initiatives that are being implemented.

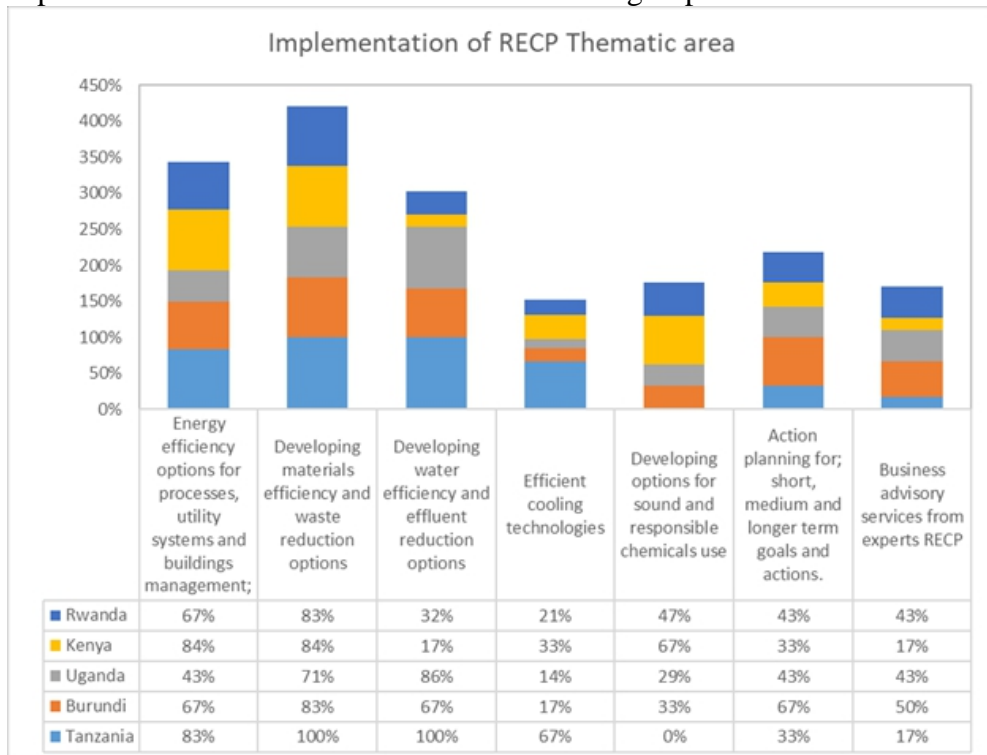


Figure 2 - Current RECP Initiatives across the EA Industries

4.2.2 Industry motivation for RECP uptake

The industry's main motivation towards RECP initiatives aligns with the goal / objectives for the RECP program. Improving profit margins, protecting the environment and improving efficiency are the key motivations for implementing RECP initiatives. This shows the demand for the program as it impacts positively to the industry's expectations. In improving margins for the business, Tanzania stands at 50%, Burundi at 80%, Uganda at 57%, Kenya 38% and Rwanda at 67%. In protecting the environment, Tanzania is at 67%, Burundi at 80%, Uganda at 71%, Kenya at 77% and Rwanda recorded minimal results. In improving efficiency; Tanzania at 50%, Burundi at 100%, Uganda at 71%, Kenya at 77% and Rwanda at 3%. Figure 3 below explains in detail the motivation towards RECP programs.

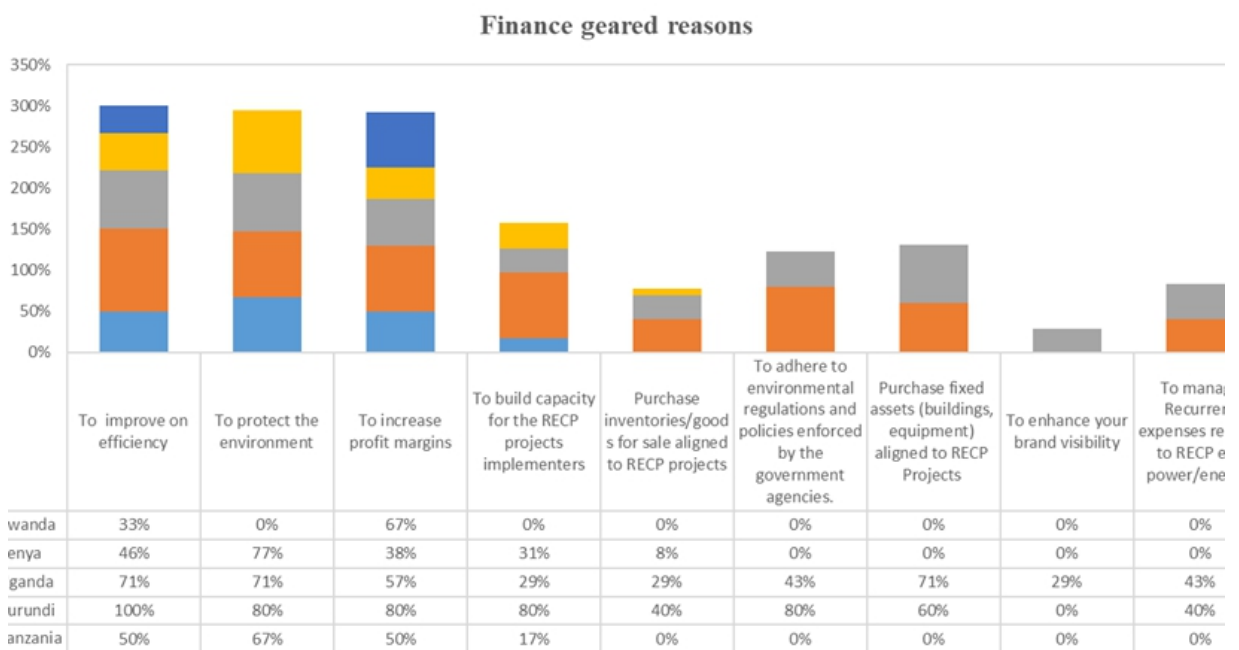


Figure 3 - Areas of focus for RECP financing in industry

Financing proved to be the greatest concern as support required by the industries, is considered as one of the key catalysts towards business growth / expansion and also improving efficiency within the industries' systems. However, access to financing was the major challenge as there are stringent and difficult measures to meet up with in order to access RECP financing from the financial institutions by the MSMEs. As a result, many industries advocated for flexibility on the conditions or a deliberate financial product/scheme to be put in place targeted at RECP programs. Various issues were highlighted as the most important for the industries that financial

institutions should consider in order to implement RECP. They rated on a scale of 1 – 5, where 5 meant the most important factor and 1 as the least important.

From the aggregate ranking of the factors across the five countries; low interest / cost of borrowing ranks at 68%, quick disbursements of loans at 56%, convenient location of financial institution at 56%, convenient repayment period at 53%, quality of service of the financial institution staff scored 50% and absence of requirement for immovable property as collateral at 47%. All factors had high level importance which demonstrated the need for banks and other financial institutions to consider a well targeted RECP financial scheme. Figure 4 below shows support and incentives needed by MSMEs to prepare bankable proposals.

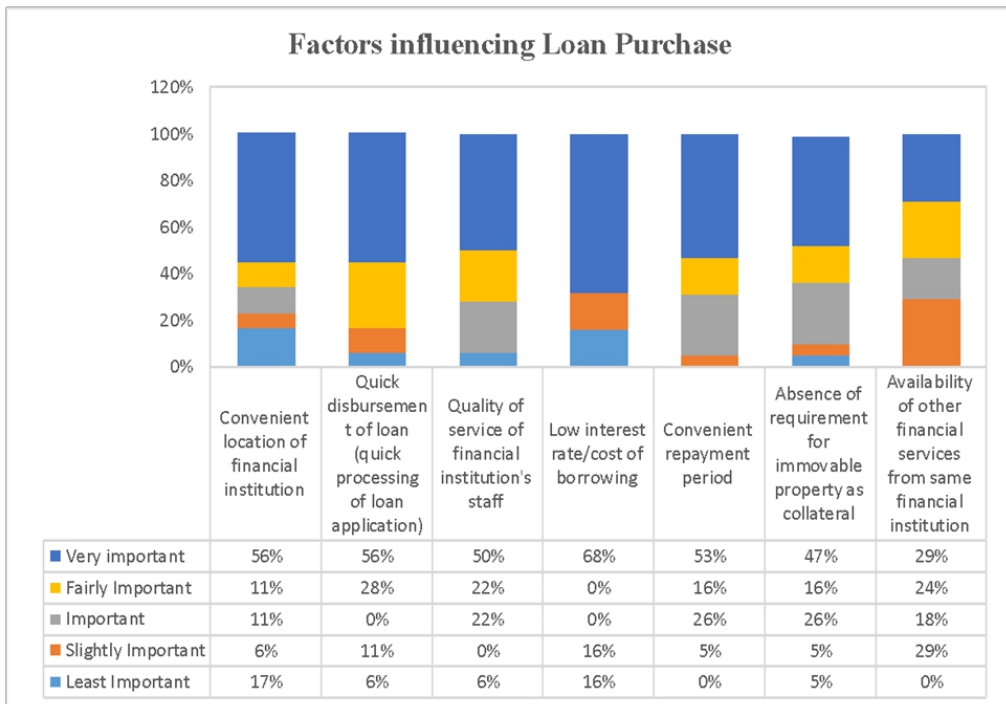


Figure 4 - MSMEs needs for development of bankable proposals

4.2.3 Investment financing by MSMEs

The current methods of financing by MSMEs are ideally through their own internal funds from retained earnings or owner/shareholders. Few industries attempt to use debt financing from banks because of the perceived constraints.

Internal funds / retained earnings is the most preferred but limits financing for RECP initiatives because of high amounts required for RECP projects. The internal funds are mainly used for day to day running of the business needs or recurrent expenses. Using internal funds / retained earnings ranks the highest, as a method of investment financing: Tanzania at 100%,

Burundi at 50%, Uganda at 88%, and Kenya at 83% while Rwanda was at 80%. Using owners' / shareholders contribution Tanzania had the lowest ranking at 5%, Burundi standing at 50%, Uganda at 63%, Kenya at 40% and Rwanda at 30%. Borrowing from private banks or state-owned organizations, Burundi leads at 50%, followed by Tanzania at 17%, Kenya and Rwanda come third with 20% while Uganda stands at 2%. Figure 5 shows various methods of RECP financing.

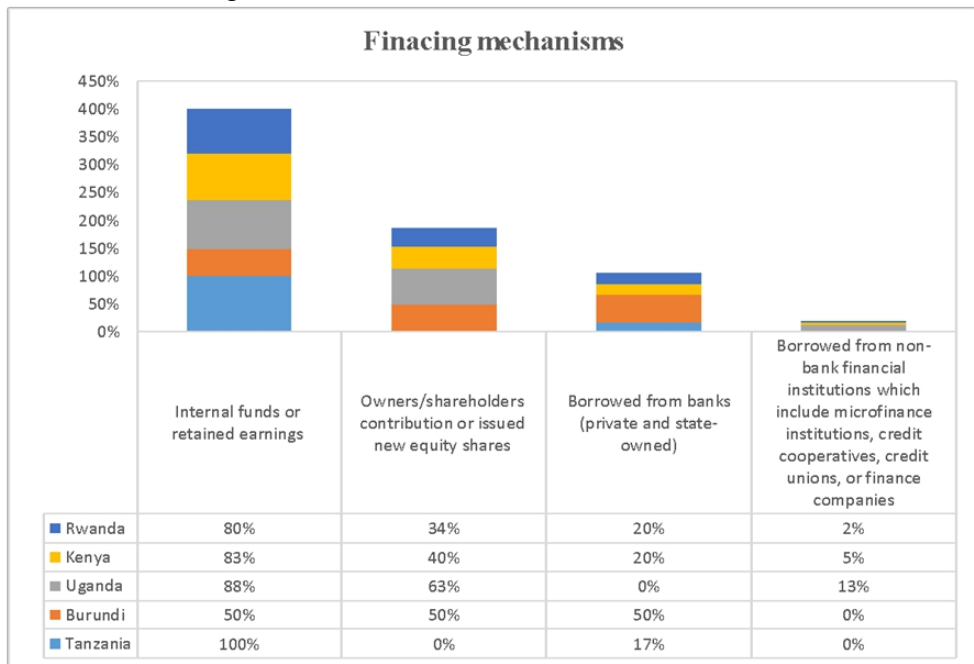


Figure 5 - Current prevailing financing mechanisms for industries in EA

4.2.3 The constraints for increased RECP investment

A bulk of the MSMEs interviewed consider RECP as a relatively new initiative in the region. Only the ones visited by the NCPCS were conversant with the RECP programs. This has impacted negatively on the potential for increased investment on RECP and its scale-up. Up to 62% of the total interviewees across the 5 countries cited lack of awareness of any form available for external financing. This was followed closely by lack of knowledge. Consequently, creating awareness of possible RECP investment and knowledge of the programs would significantly change the figures observed in the survey. Lack of awareness of any external funding for Burundi and Rwanda was, at 95% and 97% respectively, Uganda at 50%, Tanzania at 67% while in Kenya, only 24% claimed not to be aware. Due to the low awareness, most industries use internal funding towards the RECP programs but this is at the very minimal level e.g. installing transparent roofing material

for solar lighting within the production plants. Major RECP programs are not undertaken by the internal funds due to their magnitude. This also proves to be a major constraint. Figure 6 shows the prevailing constraints to RECP investments.

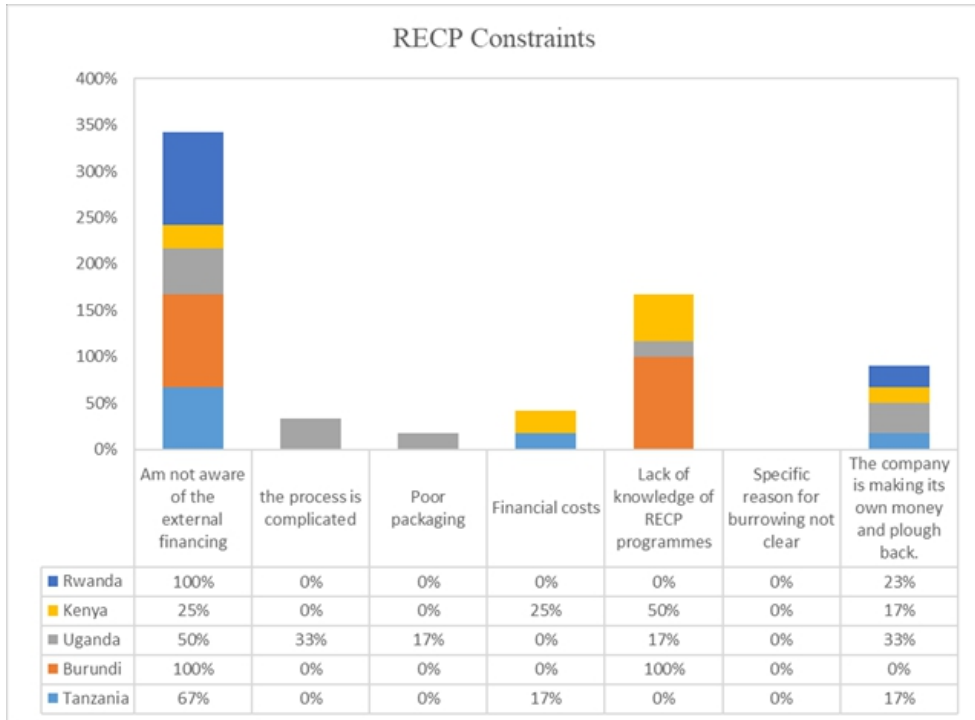


Figure 6 - Constraints in implementing RECP programs

The number of financing instruments for RECP initiatives available to MSMEs in the EA region continue to grow. However, several factors hinder their use, including lack of knowledge on their availability among the target MSME population and a perception that they are not worth the effort required to apply for them. As a result, MSMEs engage only in cheaper and more basic resource efficiency improvements that they can finance with their own resources or through grants that do not require much information from them.

Lending levels from the supply side is low. Majority of the firms indicated they required financing to undertake RECP initiatives however, the financial institutions interviewed did not have special products geared towards RECP. It was noted that financing RECP initiatives required special products from the financial institutions as the rate of return was low, making the FIs shy away from financing, due to long tenors and perceived high risks. In some financial institutions, in some countries there was zero awareness and no arrangements or schemes were available towards RECP financing. MSMEs are treated just as any other regular customer and the focus for the majority of

financial institutions is business prospects and profitability and/or quick turn over at the shortest period.

The financial institutions tend to shy away from RECP projects due to anticipated long tenors and perceived high risks. In Uganda only 25% of the financial institutions interviewed claim to have done lending towards RECP initiatives, Rwanda stands at 10%, and Kenya with the highest number of financial institutions claim the RECP concept being a new concept. Tanzania is at 10% while Burundi is the lowest scoring 2%. Figure 7 below offers a detailed explanation.

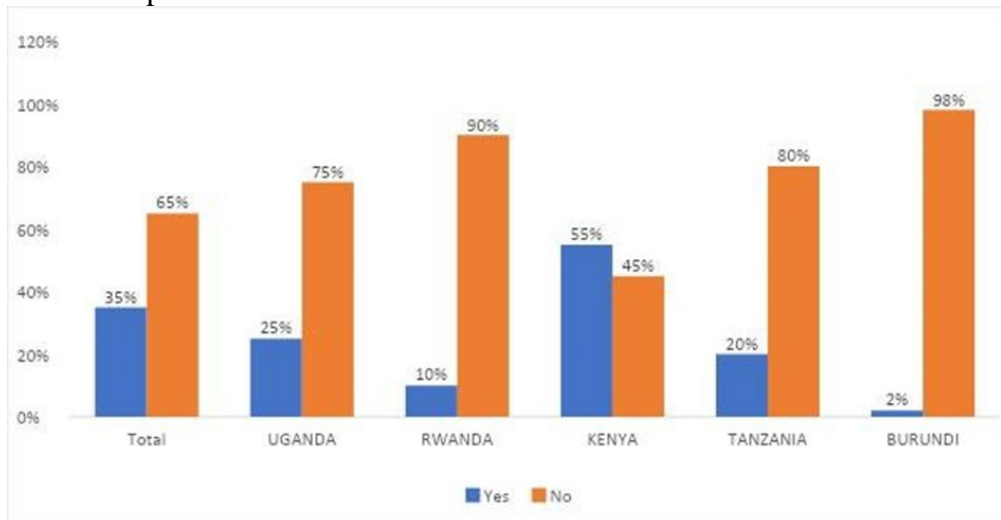


Figure 7 - Support for RECP Initiatives by financing institutions

The major obstacles from the results are eluded mainly due to low awareness and lack of internal mechanisms to cater for these MSMEs. Based on the field results, there is a willingness to develop RECP centered projects by the financial institutions as long as they have a clear, bankable plan for the projects after advancing such credit, a developed security system for funds advanced to avoid issues of falling behind repayment schedules, educate the firms on how to structure their projects to be able to cushion banks from the effects of delayed implementation plans. Figure 8 below shows that most banks have not established any working relationship with organizations offering RECP services which make RECP not well known in the banking institutions.

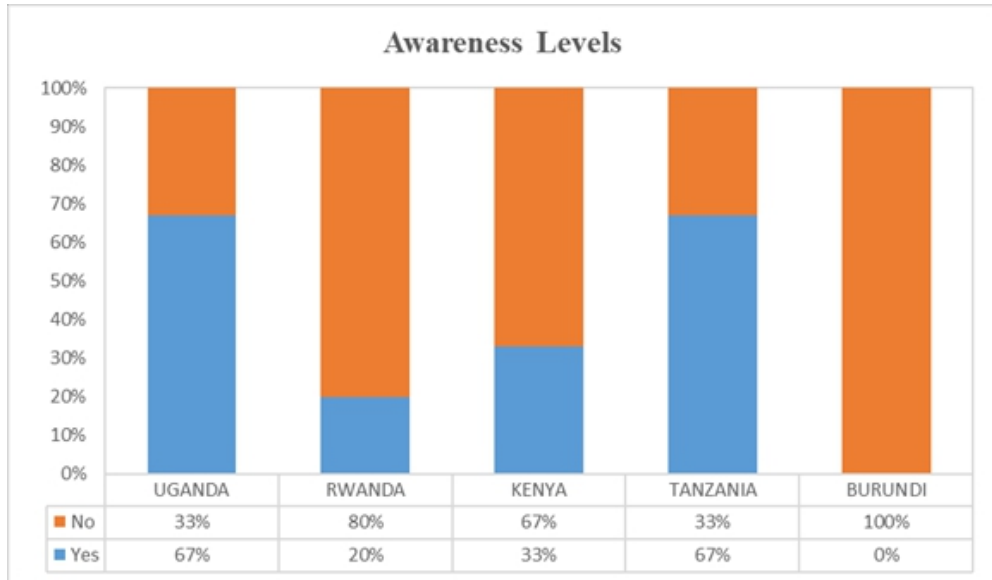


Figure 8 - RECP Awareness levels within financial institutions

From the results above, it is evident that most banks have not established any working relationships with organizations offering RECP services which make the RECP concept not well understood in the banking institutions.

4.3 The Need for advisory services

Increasingly, MSMEs in Africa and East Africa in particular view Resource Efficient and Cleaner Production (RECP) to be an important business issue. It is for this reason that all actors should find ways of supporting this initiative. The biggest challenge from the findings has consistently been lack of financing. Most banks generally do not have a deliberate policy on financing RECP.

The industries showed overwhelming support towards the RECP initiative. Up to 80% claimed that they are willing to pay for the services compared to the financial institutions. This willingness to pay for advisory services is driven by the benefits that have been witnessed by the industries already involved in RECP implementation. These advisory services are vital to enable the firms to be able to get financing for RECP from the financial institutions. So far, the RECP projects that have been implemented have shown significant improvement within the industry. As such, they would like to learn more technological aspects related to RECP. Figure 9 shows firms' willingness to contribute towards RECP.

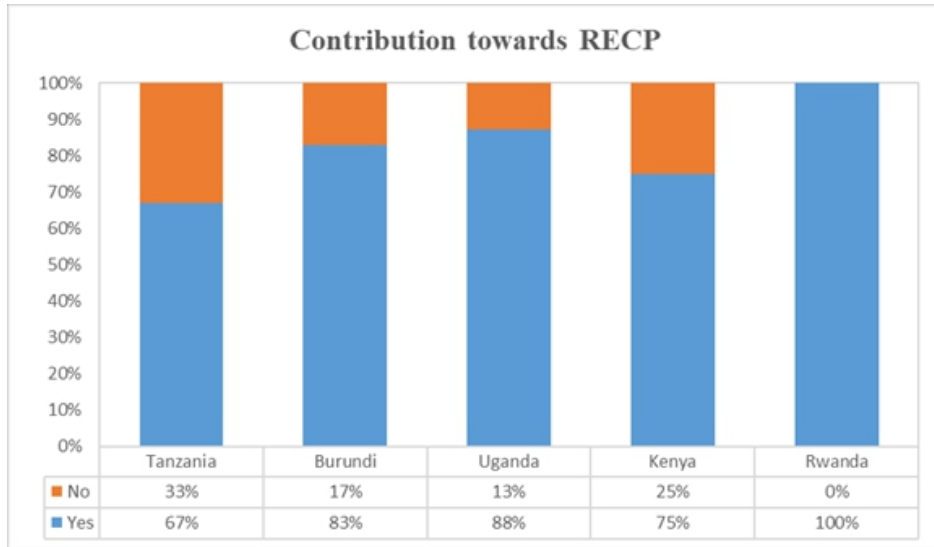


Figure 9 - Firms willingness to contribute towards RECP.

In terms of the percentage contributions, the industries are willing to pay. Majority returned a score of between 10% – 20% of the total amount of RECP cost services. However, there were reservations given the fact that they didn't know what the real total cost of the advisory service would be. Additionally, they were alive to the fact that RECP training is not cheap but would pay the required amount if specified. However, this was more for the industries that are large with more than 150 employees. Figure 10 explains the percentage distribution of what both industries are willing to pay.

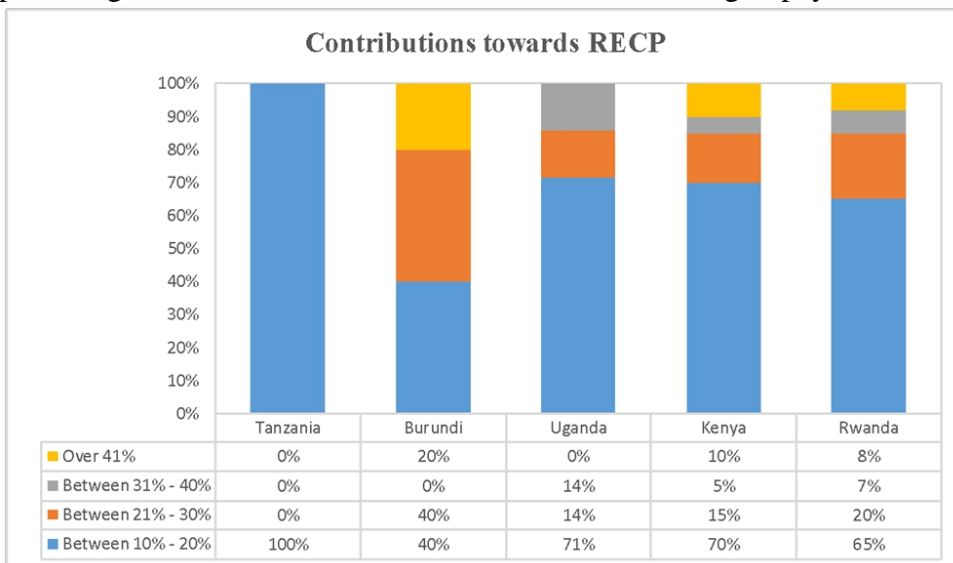


Figure 10 - Percentage Range industries are willing to contribute towards RECP advisory service

4.4 Financial Schemes

Resource efficiency and cleaner production, is an important strategy for developing countries to grow their economies in a sustainable manner. However, informational, technical and economic barriers often limit the implementation of such strategies in the private sector, particularly among smaller enterprises. MSMEs' investment in RECP may be inhibited by supply and demand conditions. On the supply side, there has been limited availability of technical and financial assistance to help companies identify and fund RECP initiatives. Business registration and collateral, as well as inadequate accounting systems and poor preparation of financial proposals were found to be the key constraints to successful RECP financing.

Studies have shown this to be common in Africa and the developing world in general. Supply may be inhibited by lack of in-country funding, administrative costs for managing small loans, competing priorities for government policies and private sector funding and generally stringent rules for financing MSMEs. On the demand side, many MSMEs may not be knowledgeable about the financing options available to them, or may not be willing to seek the options because they do not have the capacity to accomplish that.

4.4.1 Available Financial Schemes in the Market

As much as the RECP concept is gaining momentum in Africa, not much has been done to come up with a workable financial scheme. Around the globe, the United Nations Industrial Development Organization (UNIDO), Europe and Asia have developed various schemes geared towards promoting uptake of RECP initiatives. This study considered a number of schemes in various sectors across the world for incorporating RECP in their operations. This included;

Firstly, a roadmap for scaling up resource efficiency in Israel based on the experience from the UNIDO MED TEST II component, implemented as part of the SwitchMed programme. The roadmap addresses all aspects of mainstreaming resource efficiency in Israel and offers a wide range of instruments to respond to the needs of industries, from technical assistance at management and policy levels to financing opportunities, aligned with the regulatory system.

In 2009, UNIDO undertook detailed research on financing mechanisms for cleaner production and environmentally sound technology (CP/EST) in MSMEs around the world. Latin America featured prominently in this research, as the region was observed to be leading in terms of funding opportunities. These initiatives consisted of government tax incentives for purchasing clean technology (exemption from customs duties and value added tax), special/EST bankrolling offered by private banks and governments, as

well as general credit line for SMEs provided by banks. Some of the findings included a confirmation that available schemes were under-utilized by MSMEs and this was caused mainly by lack of information on funding options and appropriate financial and accounting systems.

Secondly, in Romania a study on scaling up RECP for sustainable industrial development recommends that implementing RECP requires a systematic and continuous approach for identification and evaluation of the existing inefficiencies and monitoring the enterprise level results. Solutions are proposed to intensify applications of RECP methods, practices and techniques and innovative approaches are used to facilitate the expansion of RECP application and transfer of existing experiences and best practices to a larger number of enterprises.

AfDB has successfully implemented a credit guarantee scheme for fertilizer financing in Africa. This scheme was conceived as an initiative to improve agricultural productivity by providing finance to “debottleneck” the use of fertilizers. This study further provides solutions to identifying financial institutions, beneficiaries and the technical assistance required.

The European Union’s EU4 Business was designed to contribute towards MSMEs’ access to finance in EA countries. The government-led MSME promotion mechanisms that do not have an explicit focus on RECP (e.g. interest and collateral support for lending to MSMEs in Georgia) can also potentially help MSMEs take out loans to finance their RECP measures. However, it was suggested that the potential of these measures to improve material efficiency and reduce negative environmental impact should be carefully monitored. It is also important to note that there is government support in this particular scheme in Europe.

The above schemes were reviewed mainly due to the fact that the developed countries have in most instances embraced RECP to a wider extent, financing for these initiatives is readily available, policy and regulatory support from their Governments exist.

4.4.2 The proposed Financial Schemes

The overarching strategy of the scheme is to improve uptake of the RECP initiatives. Further the aim of the scheme is to support participants in the chosen value chains in accessing sufficient financing capital to expand their activities. A key angle of the approach is to leverage the available capital within the sponsoring entity by getting commitment from financial institutions via an unfunded credit risk guarantee scheme or a revolving fund, as local financial institutions have long undeserved the RECP sector in particular.

A hybrid kind of scheme(s) was developed comprising a guarantee scheme and a revolving fund. These proposed options are detailed in the sections that follow:

Guarantee Schemes

The findings of this study recommends a guarantee scheme whereby the Government and or development partners provide a guarantee to commercial banks at 50% and the enterprises would be required to raise 50% collateral to unlock funding to enterprises.

Revolving fund

Since most MSMEs indicated the lack of capacity to raise the 50% collateral, we propose a revolving fund supported by the development funds to set aside a kitty to cater for this category of enterprises. Additionally, a rigorous process has been put in place to implement these two models of financing.

Conclusion & Recommendations

Based on the results from the study across the EA partner states, the firms interviewed confirmed that they have been exposed to various RECP programs and are at different levels of implementation of the same. Developing water efficiency and effluent reduction options, developing materials efficiency and waste reductions options and energy efficiency, emerged as most implemented RECP programs across the LVB region. Tanzania, Burundi and Uganda led on implementation of water efficiency and effluent reductions initiatives with 100%, 67%, 86% of the firms having undertaken these initiatives respectively. The results indicated that Rwanda and Kenya had 32% and 17% of the firms that had undertaken these initiatives respectively. The figures clearly indicate that Kenya ranks low in implementing this particular RECP initiative (developing water efficiency and effluent reductions).

The results further show that initiatives by firms relating to developing materials efficiency and waste reductions had high scores across the LVB region; Tanzania stood at 100%, Burundi 83%, Uganda 86%, Kenya 84% and Rwanda 83%. This parameter stood out as the most important, averaging 70% across the region. Looking at the energy efficiency, the countries scored as follows; Tanzania returned a score of 83%, Burundi 67%, Uganda 43%, Kenya 84% and Rwanda 67%. Tanzania and Kenya are the leading countries in implementing this attribute.

While there is a growing number of financing instruments available to MSMEs in the EA region, there is no particular product that deliberately targets resource efficiency and cleaner production initiatives. What exists are conventional bank products. There are several factors limiting or contributing to this situation, including low awareness of the RECP concept in the Financial Institutions (FIs) space, MSME's lack of knowledge on the same and a perception that RECP is not worth the effort required to apply for them. As a

result, MSMEs pursue cheaper and more basic resource efficiency improvements that they can fund with their own money or through grants that do not require as much information (requirements) from them.

The study results also show that most of the financial institutions tend to shy away from RECP projects due to anticipated long tenures and the inherent high risks. In Uganda, only 25% of the financial institutions interviewed claim to have done lending towards RECP, Rwanda scored 10%, while Kenya, with the highest number of financial institutions, indicated a lack of awareness on RECP financing, returning a score of 10%. Tanzania scored 10%, while Burundi is the lowest at 2%. It is clear that the concept of RECP financing is not grounded in the financial industry space.

In the role of advisory services, the consultancy performed a market survey to unearth the willingness of industries to pay for advisory services as well as the type of advisory services required by the industry specific to the sector. The industries showed overwhelming support towards the RECP initiative, up to 80% claimed that they are willing to pay for the services. The key advisory services required that came out of the study include; training on preparing bankable proposals, capacity enhancement for enterprise employees and feasibility studies of the RECP initiatives.

These findings provide pre-requisites for developing and implementing suitable financial mechanisms for RECP sustainability. These pre-requisites, designed to remove the above barriers include;

1. Create more awareness on participating financial institutions, clients and firms in order for every participant to have a better understanding of the RECP initiative.
2. Raise awareness of the RECP activities among the various firms that could implement these projects. This will entrench deeper into the enterprises.
3. Conduct sufficient research on viable projects for banks to be able to craft products that can support the initiatives.
4. Develop credit guaranteed schemes that are beneficial to both customers and financiers.
5. Have regular engagements with stakeholders to have a buy-in of the projects via monitoring and evaluation (M&E) to measure the impact of the investment.
6. Streamline certification of enterprises practicing RECP and put in place a provision for awards to encourage good practice.
7. Have government intervention through supportive legislation to encourage RECP participation by the private sector, RECP should not be voluntary but should be guided by law.

8. Enterprises / MSMEs should fully embrace financing / paying for advisory services offered by both NCPCs, Business development officers and Bank advisors.

RECP is well embraced especially by the industries that have implemented some of the initiatives. The initiatives have proven to be beneficial to the organization. The impact of RECP has been largely on improved profit margins, environmental and efficiency within their systems. They are very much willing to pay for advisory services especially on technical issues. However, the major constraint for implementation is the cost, as most industries use internal funds/ earnings to run both recurrent expenses and RECP. Recurrent expenses are given priority over RECP thus limiting its implementation. Borrowing for the purposes of RECP is a challenge given the current economic situation, where most companies claim they are not profitable which poses a risk in the event of default. In addition, the Financial Institutions rules and regulations make it difficult to access the funds. Financial Institutions are not conversant with RECP and do not have products targeted for RECP initiatives. They are not very much willing to finance the RECP initiatives given to low awareness, perceived risks, long term tenure, no guarantor, making it a challenge for MSMEs and makes it necessary to have a financial scheme that will be suitable for both parties in order to sustain RECP initiatives.

References:

1. Abor, Joshua, and Joshua, and Nicholas Biekpe, 2007, *Small Business Reliance on Bank Financing in Ghana" Emerging Markets Finance and Trade* 43(4): 93-102
2. Beck, T., L.F Klapper, and J.C. Mendoza. 2010. The Typology of Partial Credit Guarantee Funds around the World. *Journal of Financial Stability* 6, 10-25
3. Beck, Thorsten.2013, *Bank Financing SMEs - Lessons from Literature*, National Institute Economic Review 225 (1): R23-R38
4. Bek, Demirguc-Kunt and Maksimovic 2008, *Banking Services for Everyone? Barriers to Bank Access and use around the World*, The World Bank Economic Review
5. Coleman, S. (2000), Access to Capital and terms of Credit: a comparison of men and women-owned small businesses, *Journal of small business Management*, Vol.38, No.3 pp.37-52
6. Cosh, A.and Hughes, A. (Eds) (2003), *Enterprise Challenged: Policy and performance in the British SME Sector for Business Research*, Cambridge

7. Deakins, D. and Hussein, J.G (1993), Risk assessment with asymmetric information: a case study of Lending decisions by Banks, *UKMER journal*, Vol.3 No.2 pp.11-23
8. Gudger, M., 1998. *Credit Guarantees: An Assessment of the State of Knowledge and New Avenues of Research, Food and Agriculture Organisations*, United Nations
9. Hancock, D., J.A. Wilcox, 2007, *The Repercussions on Small Banks and Small Business of Bank Capital and Loan Guarantees*. Wharton Financial Institutions Centre Working Paper Number 07-22
10. Kirimi E.K. (2012). *The influence of cost leadership and differentiation strategies on the relationship between people oriented capital and competitive advantage of Kenyan firms certified by international standards organizations*, Unpublished PhD thesis, University of Nairobi.
11. *Public Credit Guarantees and Access to Finance*: Juan Carlos Gozzi, and Sergio Schmukler May 2016
12. *Roadmap for Scaling up Resource Efficiency in Israel*, Weltz Centre for Sustainable Development
13. *Scaling up Resource Efficiency and Cleaner Production for a sustainable Industrial development* Aida Szilagyi, Marian Mocan
14. Tatiana Chernyavska: *Opportunities and barriers to promoting RECP financing in Georgia*
15. UNEP (2015), *Resource-efficient and cleaner production*. United Nations Environment Programme, Nairobi
16. USEPA (2014), *Economic Incentives*. US Environmental Protection Agency, Washington
17. Van Berkel R (2010), Evolution and diversification of National Cleaner Production Centres (NCPCs), *Journal of Environmental Management* 91 (7): 1556-1565
18. Wang X (2011) Exploring trends, sources, and causes of environmental funding: a study of Florida Counties. *Journal of Environmental Management* 92(11): 2930-2938
19. Williamson D, Lynch-Wood G, Ramsey J (2006) Drivers of environmental behaviour in manufacturing SMEs and the implications for CSR. *Journal of Business Ethics* 67:317-330