

# “Evaluating the credit assessment criteria used by financiers to assess credit applications in Mozambique”

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<b>ARTICLE INFO</b>	Sanlie Middelberg, Pieter Buys and Merwe Oberholzer (2014). Evaluating the credit assessment criteria used by financiers to assess credit applications in Mozambique. <i>Banks and Bank Systems</i> , 9(3)
<b>RELEASED ON</b>	Tuesday, 30 September 2014
<b>JOURNAL</b>	"Banks and Bank Systems"
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

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## Evaluating the credit assessment criteria used by financiers to assess credit applications in Mozambique

### Abstract

Africa is the ideal location for agricultural investment to address the growing concern of food insecurity worldwide. South African agricultural producers and agricultural financiers are strategically positioned to expand their agricultural interests into Africa, as South Africa is regarded as the gateway for investors to Africa. Expansion into Africa is regarded as high risk and to reduce the increased credit risk, agricultural financiers use credit assessment criteria when evaluating South African producers' credit applications. The objective of this study was to identify and evaluate these credit assessment criteria to facilitate improved credit applications. The research used qualitative techniques by conducting semistructured interviews with specialist representatives from three commercial banks in Mozambique. The contribution of the study is the unveiling and evaluation of the credit assessment criteria founded on four pillars, namely financial history, cashflow repayment ability, collateral and management profile of the producer.

**Keywords:** agricultural finance, banks, collateral, credit assessment, Mozambique, credit risk.

**JEL Classification:** Q14, G21.

### Introduction

The Zero-Hunger Challenge was announced by the United Nations (UN) Secretary-General Ban Ki-moon during the Rio+20 UN Conference on Sustainable Development in June 2012. However, this challenge necessitates increased levels and quality of agricultural investment. As approximately 60% of the world's uncultivated agricultural land lies in Africa, combined with a large portion of natural resources, this is the continent that has the potential to feed the world. Notwithstanding this potential, Africa currently only delivers 10% of the world's food. The chair of the Africa Progress Panel, Kofi Annan, highlighted in the 2014 Africa Progress Report that if the acceleration of Africa's transformation is required, then agriculture and fisheries have to be boosted significantly, as together these sectors provide livelihoods for roughly two-thirds of all Africans (Africa Progress Report, 2014). He further went on to say that when farmers access finance they can invest more effectively in better seeds, fertilisers and pest control. Nonetheless, the agricultural sector in Africa struggles to access the financing it needs for sustained growth.

Furthermore, the providers of agricultural finance, keen on expanding their services into Africa, are also facing challenges that arise with entering new markets. This is partly due to a perceived combination of high risk and modest returns on agricultural investments in Africa (Klasa, 2013). Poor infrastructure, including roads, communications, electricity and storage, leads to high transaction and transportation costs (Benfica & Mather, 2013). Key investments in, among others, the upliftment of the infrastructure are therefore required in the African agricultural sector as the sector plays an important role as both a source of employment for large groups of the population and a source of gov-

ernment income through the exportation of agricultural products (Gêmo, 2011).

South Africa is regarded as the gateway of investors to Africa, and as an emerging market, it has a significant edge over their developed market counterparts (Hubbard, 2014). South African investors are therefore, strategically positioned to pioneer further growth into Africa by expanding agricultural interests into these countries. Although South African producers and agricultural financiers are not new to Africa as a continent, they are often quite unfamiliar with the countries they venture into. This leads to increased risk exposure, which should be carefully managed. Mozambique is a country with vast reserves of natural resources, such as arable land, water, gas and coal. Mozambique is also ideally located for South African producers aiming to invest in the country's agricultural sector. The success of the agricultural sector is, however, reliant on the availability and affordability of financial services, such as production credit and commercialisation credit, including overdraft facilities (Finmark Trust, 2012a).

The research context can therefore, be defined as that, on the one hand, Mozambique is ideally located for South African commercial producers to venture into – depending on financing availability; while, on the other hand, agricultural investment in Africa is often perceived as a high risk investment, with financiers having to manage their credit risk. The finance providers therefore, have to carefully evaluate a producer's credit application to identify the possible risk areas. It is also important that producers applying for agricultural finance have knowledge regarding the credit assessment criteria that financiers consider during the evaluation of their credit application. Producers can furthermore, learn from the credit process, since financiers have legal, collateral, credit and sector specialists at their disposal who

provide input toward the credit process. Typical commercial producers do not have all of these resources at their disposal. The credit application process therefore provides a learning opportunity to producers and will facilitate improved and successful applications leading to better planned and productive investments.

Considering the aforementioned, the following research question can therefore, be formulated: What credit risk assessment criteria do agricultural financiers consider when evaluating a South African agricultural producer's application for expansion into Mozambique?

In addressing this question, the paper is structured as follows. Section 1 identifies the research gap, section 2 includes the theoretical considerations of the paper. Section 3 finds the research method, section 4 includes the theoretical perspective and empirical results are presented in section 5 before providing a discussion in section 6 and some concluding remarks in the final section.

## 1. Research gap

A number of recent research studies have been conducted on agricultural finance in the African continent, notably by Making Finance Work for Africa (MWF4A, 2012) and the FinMark Trust (2014; 2012b). The focus of the first study was to assist in promoting the expansion of agricultural finance in Africa by providing a set of policy recommendations to policy-makers, donors, financial institutions and farmers' organizations. FinMark Trust (2014) assessed the current state of rural and agricultural financial services in six Southern African countries, namely Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe. Furthermore, FinMark Trust (2012b) undertook a study of African and international innovations and best practices in increasing access to rural and agricultural finance.

Studies focused specifically on Mozambique include the World Bank (2014), IFAD (2013), FinMark Trust (2011) and Cabral (2009). A study by FinMark Trust (2012a), which assessed the status of agricultural and rural finance in Mozambique, found that there is a supply of agricultural and rural finance in Mozambique, but with a limited reach. The primary recommendations of the study centred on sustained efforts to increase producers' incomes by improving agricultural production and market linkages.

Recent studies focusing on credit risk management in commercial banks include Arora (2012) and Suresh et al. (2010). Lastly, Gang et al. (2012) conducted research on a credit risk assessment model for agriculture-related organizations in China.

Based on the aforementioned discussion, the research study will fill a knowledge gap that exists by enabling

producers to understand the credit risk assessment criteria that are applied in Mozambique, specifically.

## 2. Theoretical considerations

Credit risk can be defined as the risk of a counterparty defaulting, i.e. failing to perform as agreed (Dictionary of Finance and Banking, 2005). Credit risk is critical, as the default of a small number of key borrowers can generate large losses and potentially lead to the insolvency of a financier. For any financier, a balance between proper risk management without compromising on the volume of credit operations should exist (Arora, 2012). Gang et al. (2012) argued that although traditional credit assessment models can be used to evaluate general credit applications, these methods are not suited for agriculture-related applications, as there is an increased uncertainty, and therefore, increased risk, associated with agriculture. An agricultural-specific credit assessment model should therefore, be used in evaluating agricultural producers' credit applications. Furthermore, as the agricultural sector in Africa is perceived as a high risk investment area, agricultural financiers interested in growing their market share into these markets have to apply proper risk management techniques in order to achieve a return for its shareholders.

## 3. Research method

The research can be classified as subjective and interpretive and was conducted in two phases. The first phase focused on reviewing current literature on Mozambique and agricultural finance, while the second phase comprised the empirical study. The latter was conducted by means of qualitative research techniques using semistructured interviews as the data collection technique. This technique was chosen as specialists in the field of commercial agricultural finance in Africa are limited and documentation of processes not publicly available. The data was therefore, obtained by conducting personal interviews with specialist representatives from three South African commercial banks that have already expanded into Africa. These are the commercial banks that specialise in agricultural finance, unlike the other Mozambican commercial banks that offer producers standard commercial loans. These are also the commercial banks focused on further expanding and diversifying their agricultural interests into the rest of Africa.

## 4. Theoretical perspective

The theoretical perspective will contextualise the country of Mozambique, followed by a discussion on agricultural finance in Mozambique.

**4.1. Mozambique.** The country's land area is slightly less than twice the size of the US State of California (CIA, 2014). Mozambique was one of six African countries included in the world's ten fastest growing economies in the last decade (Zachary,

2012). Furthermore, with 2 700km coastline along the eastern coast of Africa, it is strategically positioned as a gateway into Southern Africa through its three international ports, which provide access to landlocked countries in the region of over 250 million inhabitants (CPI, 2014a). Mozambique is located on the south-eastern coast of Africa and borders on Tanzania to the north, Zambia, Malawi and Zimbabwe to the west and South Africa and Swaziland to the south. The country has 11 provinces: Cabo Delgado, Niassa, Nampula, Tete, Zambézia, Manica, Sofala, Inhambane, Gaza, Maputo Province and Maputo City (FinMark Trust, 2012a). According to the World Bank (2014), in 2012, Mozambique had a population of approximately 25.2 million people with the official language being Portuguese. The country's average annual GDP growth rate for 2012 was 7.4%, with an estimation of 8% per annum for 2013 to 2016, with agriculture contributing 30.3% to the GDP (World Bank, 2014). Despite agriculture contributing only 30.3% to the GDP, according to the 2007 Census, the sector provides employment to over 75% of the active population (FinMark Trust, 2012a). Mozambique has 36 million hectares of arable land (Gêmo, 2011). One key aspect investors should take cognisance of is that the state is the owner of land in Mozambique and that it can only be used on a lease basis (CPI, 2014b). Notwithstanding, an increase in agricultural production and productivity has a high potential for poverty reduction in Mozambique (Cunguara & Garrett, 2011).

The Comprehensive Africa Agriculture Development Programme (CAADP) was launched in Mozambique in December 2010 with an objective of achieving a 6% annual agricultural growth (Cunguara & Garrett, 2011; Gêmo, 2011). This coincided with the government's preparation to implement its Strategic Plan for Agriculture Sector Development (PEDSA), a 10-year agricultural policy. Both these documents are viewed as policy tools that could potentially contribute towards agricultural development in the next five to 10 years in Mozambique (Gêmo, 2011). South African producers can assist in working towards achieving the goal of agricultural development.

**4.2. Agricultural finance in Mozambique.** Research conducted by the FinMark Trust (2012a) indicated that the supply of Mozambique's agricultural and rural finance emanates from 1) commercial banks, 2) micro-banks, 3) credit cooperatives, 4) micro-credit operators, 5) rural financial associations, 6) ASCAs, 7) out-grower companies, 8) commercialisation advances, 9) informal agents, and 10) government funds. It was furthermore, found that the reach of these financiers is limited, with major constraints being basic infrastructure, operational costs and professional staffing issues (FinMark Trust, 2012a).

As indicated above, ownership of all land in Mozambique is vested in the state, which means that the formal property rights of individuals, communities and corporations have the form of *Direito e Aproveitamento da Terra* (DUATs), which recognises the right to use and benefit from the land (Kaarhus et al., 2010). The DUAT does not serve as a form of collateral for formal sector loans (FinMark Trust, 2012a; Cunguara & Garrett, 2011). For formal approval of DUATs, it is further required that both local communities and investors present land-use plans/investment proposals for scrutiny and approval by the relevant authorities (Kaarhus et al., 2010).

Research conducted by the FinMark Trust (2012a) also found that the Mozambican commercial banks finance agricultural production through their standard loans. However, with the expansion of commercial banks, specific products aimed at the agricultural sector, such as lines of credit, have been designed. That is the case with both Banco Terra and Standard Bank. The former has begun offering credit all along the value chain, while Standard Bank has created a specialised agricultural finance department (FinMark Trust, 2012a).

## 5. Empirical results

The focus of this study was to identify the credit risk assessment criteria that agricultural financiers consider when evaluating a South African producer's application for expansion into Mozambique. As with any company, agricultural financiers have to increase and maximize the wealth of shareholders. One approach to increase the return to shareholders is to diversify by expanding into new markets. Africa is one such untapped market. However, although entering new markets can increase the return to shareholders, it exposes the agricultural financiers and producers to increased risk. Financiers are specifically exposed to increased credit risk and the management thereof is essential. Financiers manage credit risk by employing credit assessment criteria in their evaluation of a producer's credit application. However, producers should have knowledge of the credit assessment criteria to enable them to thoroughly strategize, plan and prepare when preparing their credit application.

The results section combines the findings identified during interviews with the respondents and does not specify to which commercial bank this relates, as per the confidentiality agreement with the respondents. The results will be presented by firstly providing the context within which these respondents operate, followed by a discussion of the four pillars of the credit assessment process when evaluating a producer's credit application. These four pillars are: 1) financial history, 2) cashflow repayment ability, 3) collateral, and 4) management profile of the producer.

**5.1. Context.** The most important aspect to consider is that agricultural financiers do not use “one size fits all” approach when considering providing agricultural financing. Each producer and his situation are unique and will be evaluated accordingly. However, financiers each have a standardized risk profile and risk appetite and will evaluate producers taking this into consideration.

South African producers applying for credit in Mozambique can be categorized as follows:

- ◆ Category 1: South African producers diversifying by investing in Mozambique. The producer has to rely on the strength of the balance sheet of his South African operation to obtain financing.
- ◆ Category 2: South African producers already diversified by investing in Mozambique using their own capital and can rely on their current Mozambican and South African operations as collateral for financing.
- ◆ Category 3: South African producers who have divested their South African interests and relocated to Mozambique. This category used the cash generated from the divestment as start-up capital and has a number of years’ history in Africa and is now applying for additional financing.

Another aspect to consider is that the three finance providers are South African commercial banks that have expanded into Africa and therefore, reference is often made to the South African context.

In contrast to South Africa, long-term agricultural financing in Africa is limited with the longest terms typically being five to 10 years, as the longer the term, the higher the risk. As the opportunity cost of having capital tied up for long periods is high, financiers will avoid taking a long-term risk on a volatile sector such as the agricultural sector in Africa.

**5.2. Financial history.** When considering the history of a producer, one approach that commercial banks follow to reduce their credit risk is that they will typically not offer project financing, also referred to as “greenfield project financing”. This is where a producer has no history of farming and therefore, no record of past performance. This type of financing is regarded as high risk, with a South African failure rate of approximately 80 to 85%. The financing of these types of projects is typically provided by the development finance institutions (DFIs) in South Africa.

The history is determined by analyzing the producer’s past financial records, which include a balance sheet, income statement and cashflow statement. These records should date back between three and five years, as this enables the financier to determine an average

performance, including costing trends. With reference to a Category 1 producer, the producer has to revert back to his South African operations financial records. The aim of analyzing these financial records is to determine the producer’s debt repayment ability. The financier will typically use the historic financial information to calculate a performance measure commonly used when evaluating credit applications, namely the earnings before interest, tax, depreciation and amortisation (commonly abbreviated as EBITDA). The effect of debt on a producer’s repayment ability is initially disregarded, i.e. the interest paid is not taken into account. An annual average, based on the number of years information obtained from the producer, is then determined. More often than not, the average EBITDA will be multiplied by a factor ranging from 3 to 5 varying between respondents. This factor varies from country to country and is influenced by, among others, the cost of borrowing and the industry’s risk premium. This method is a simplified net present value calculation and determines the net present value of a producer’s surplus funds, i.e. funds available to pay off debt. The next step is to deduct the producer’s current debt liability to determine whether additional debt can be afforded.

For example: Assume that the producer’s three-year average EBITDA is R300 000 and a factor of 3 is used, the producer’s debt repayment ability is  $R300\ 000 \times 3 = R900\ 000$ . The producer’s current debt liability is R500 000. The “surplus” is then calculated as  $R900\ 000 \text{ minus } R500\ 000 = R400\ 000$ .

Additionally, the financier will typically calculate a number of balance sheet ratios to determine a producer’s historic debt repayment ability. Two such ratios are the *gearing ratio* and the *current ratio*. The definitions of the ratios vary between the respondents from a gearing ratio calculated using debt to assets to using debt to equity. Using debt to assets in the gearing ratio calculation, 30% will generally represent a “strong” balance sheet and is regarded as a low gearing ratio, representing low risk to a bank. Using debt to equity in the gearing ratio calculation, the bank regards 100% as ideal, but does make allowance for higher ratios. With reference to the *current ratio*, the norm of 2 to 1 is preferred, i.e. the current assets should cover the current liabilities twice.

**5.3. Cashflow repayment ability.** The second pillar of the four pillars is cashflow repayment ability. Cashflow can be regarded as the most important consideration when considering agricultural financing applications. As agricultural long-term financing is limited in Mozambique, the pressure on producers to repay debt within a shorter period is high. Furthermore, from the viewpoint of both the financier and the producer, cashflow repayment ability is

crucial as the interest and capital on the debt has to be serviced.

Distinction is drawn between capital expenses and working capital expenses. The cashflow forecast requirement entails at least a three-year *monthly* forecast, i.e. a 36-month forecast. Some respondents expect a monthly forecast for a longer period. If, for instance, a producer is planning to make substantial capital investments for the next two years, the resultant positive return on that investment should be reflected in the cashflows presented thereafter, and therefore a cashflow forecast longer than two years should be presented. The first two years' cashflow will not necessarily incorporate the return on the capital invested and would not be an accurate reflection of the cashflows generated by the investment. Although forecasting remains difficult, even more so in Africa, it forces the producer to think and plan and consider aspects of the forecast (budget) not previously considered. This cashflow forecast should be *very* detailed by including the expected *income* and the various elements making up the *production costs*, including: 1) seed, 2) fertiliser, 3) diesel, and 4) labor. The financiers have access to market information, such as the average production cost, and can therefore, evaluate the forecasts made by the producer to determine whether a producer is being unrealistic or overly optimistic in the forecasts. Furthermore, the financier should compare whether the forecasts are substantiated by the historic performance. For example, if the producer is overly optimistic about the future, but it is not backed up by the average past performance, the financier will query the forecast.

Financiers will use these cashflow forecasts to calculate the EBITDA by deducting a depreciation allowance. Again, this figure will be multiplied by the same factor used in the calculation of the debt repayment ability. It should be possible to draw a line between the historical debt repayment ability and the projected cashflow repayment ability, as the forecast should flow from the historic performance. If not, it may be because the producer was not realistic with the production costs or income forecasted in the cashflow forecast. Financiers generally make use of norms between the costs and incomes in the cashflow forecasts. As an example: the cost (input and overhead costs, excluding capital and interest payments on debt) should comprise 75% of the income for a grain farmer. Again, the cashflows of the first two years when establishing an operation cannot be used as norms for cost versus income.

Financiers will use the producer's debt repayment ability and multiply it with a percentage, such as 75%. These percentages differ from financier to financier. In the example of 75%, a financier would be prepared to finance a producer to a maximum

amount of 75% of the total debt repayment ability. This is a safety mechanism that the financier builds into a producer's financing structure to reduce the risk if crop failure or natural disasters occur.

As a further "test", the financiers use productive value matrixes to value a producer's land. Agricultural land is commonly valued according to its yielding potential, with the fundamental assumption that land yields economic returns infinitely. These productive value matrixes categorize land according to the level of development. The productive value should be more or less in line with the producer's debt repayment ability and cashflow repayment ability.

It is imperative that a producer can provide evidence of his operations' cashflow repayment ability. If the evidence thereof is lacking, the chance of a producer obtaining finance is limited. The respondents use a number of mechanisms to verify a producer's cashflow repayment ability: 1) debt service coverage ratio (DSCR), 2) standardizing cashflow, and 3) surplus cash. The DSCR is a mechanism used to double-check the cashflow repayment ability. A producer should generate at least 1.2 to 1.5 times his debt obligation for the year; therefore, EBITDA must be at least 1.2 to 1.5 times the capital and interest payments for a 12-month period in the cashflows. The second mechanism used in verifying the cashflow repayment ability is to standardize the cashflow to a single factor, for example cashflow per hectare. As financiers have knowledge regarding the cashflow per factor varying between agricultural products, this enables a financier to make comparisons based on the cashflows per factor. The third mechanism that the respondents use to verify the cashflow repayment ability is cash surplus. Financiers often consider a cash surplus of 10% of the production cashflow as acceptable.

**5.4. Security/collateral.** The third of the four pillars of the four legs is collateral. Financiers cannot provide credit without sufficient collateral, as it serves to limit potential losses for financiers. Within the South African context, the financier generally takes out a lien on the producer's land, which serves as collateral for the value of the producer's loan (Middelberg, 2013). However, within the Mozambican context, this is not possible as all the land is state owned and a DUAT is not recognized as collateral by commercial banks. The financier will therefore require alternative collateral. Cross-border collateral is not ideal, as the legal jurisdictions between countries are different. It is therefore, not ideal for financiers to take out a lien on a producer's agricultural land in South Africa for agricultural production credit obtained in Mozambique.

The value of collateral and a producer's debt repayment ability has to cover the producer's total debt.

**5.5. Management profile of the producer.** The fourth pillar of the four pillars relates to the management profile of the producer applying for agricultural finance. This pillar is the most difficult to assess as it relates to the “soft skills” of a producer, such as the management abilities of a producer, including experience, production techniques used, labor practices and marketing of product. The producer has to ensure that evidence is provided in his credit application of such capabilities. The financiers place a high value on management capabilities as the “manager” behind the business remains a crucial factor in the success of an application. Producers therefore, need to be able to identify and mitigate the risk associated with their operating model.

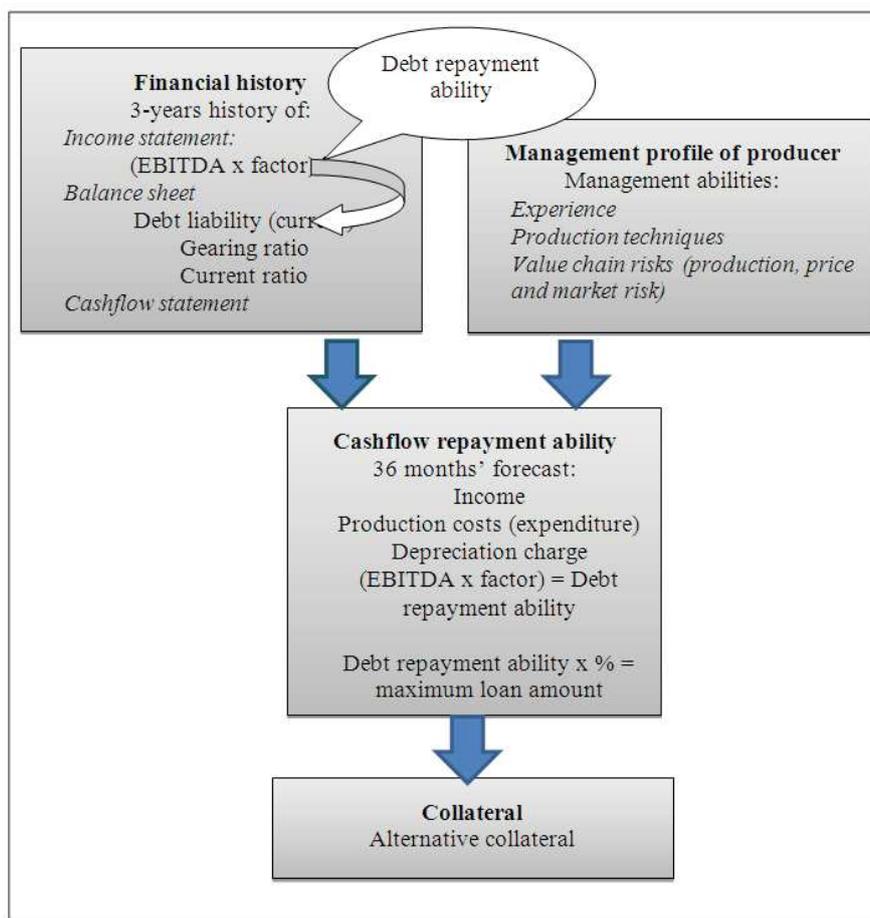
**6. Discussion**

Credit risk in agriculture is a key risk that financiers should manage and address. This risk is heightened when the parties that are financed are expanding into new markets different from the familiar markets currently serviced by the financier. This study focused on South African producers’ intent to expand or relocate to Mozambique and, as such, may require financing for the planned expansion or relocation. Knowledge of the credit assessment criteria used by such financiers to evaluate pertinent applicants is constructive for both

the applicant and the financier. This is where the contribution of the study lies in that a credit assessment framework is developed as a tool for South African producers interested in expanding into Mozambique, to enhance their credit application. The framework is presented in Figure 1.

In evaluating the identified credit assessment criteria, it was established that a producer’s credit application should centre on the cashflow repayment ability. The other three pillars all provide support to achieve the desired cashflow repayment ability. When, for example, referring to a producer’s financial history, a producer’s past financial performance does not necessarily guarantee success in the future, especially if the producer enters a new market such as Mozambique. Furthermore, a producer’s management profile should support the ability to achieve the desired cashflow repayments. Finally, the value of collateral will become critical when a producer defaults on credit repayments and the financier has to salvage the capital extended to the producer.

In conclusion, it is crucial to keep in mind that a financier has to determine whether a producer has adequately addressed all identified risks. This process forms part of a financier’s overall risk management strategy.



**Fig. 1. Credit assessment framework for South African producers applying for agricultural financing in Mozambique**

## Concluding remarks

Investment in the agricultural sector of Africa is essential to ensure that the world population is fed. South African commercial producers are strategically positioned to invest and contribute to the required growth in the agricultural sector. However, the risks associated with agricultural investment in Africa are perceived to be high. These risks have to be managed carefully by both the producer and agricultural financiers keen on expanding their interests into Africa. Credit risk assessment criteria are employed by agricultural financiers to reduce their credit risk exposure. It is, however, imperative that these criteria are identified and presented to South African producers who have already invested in Mozambique or are aiming to invest in Mozambique. The objective of this study was to identify and evaluate these assessment criteria and it was found that these criteria are categorized into four pillars, namely financial history, cashflow repay-

ment ability, collateral and management profile of the producer. A framework was created that South African producers can use in preparing their credit application for agricultural financing in Mozambique. The evaluation of the assessment criteria highlighted that specific focus should be placed on the cashflow repayment ability of a producer and, furthermore, that a credit application requires detailed knowledge of all aspects of the value chain by the producer. It is recommended that producers utilize this framework in strategising, planning and presenting their credit applications.

The limitations of the research include that limited respondents were included in the research, although they represent major players in the market. Another limitation is that this study focused on one country, Mozambique, and therefore, the findings cannot be generalized for all African countries. This, however, provides an area for future research, namely to expand the research to include other African countries.

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