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# Market Access, Trade and Enabling Policies Project (MATEP)

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## Medium-Term Investment Fund Concept Paper

November 2005

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## Medium-Term Investment Fund Concept Paper

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November 2005

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# **Market Access, Trade and Enabling Policies Project (MATEP)**

## **Medium-Term Investment Fund Concept Paper**

### **1. Introduction**

The analysis of the Zambian financial sector in DAI's proposal for MATEP and subsequent preliminary investigations during the implementation of MATEP, indicated there is a gap in the market for medium-term finance available to Zambian businesses wishing to expand export activities. In the preliminary investigations, the lack of medium-term finance is regarded as primarily related to the structure of the Zambian financial system and the risk assessment by commercial financial institutions of exposure to medium- and long-term debt in Zambia.

The creation of a medium-term quasi-equity instrument was proposed as an initiative for MATEP to support the entry of financial institutions and investors in medium-term financing. In addition, several other models were considered during the study.

The purpose of this study was first to understand and confirm the problem of access to medium-term financing, secondly to study the applicability of different instruments, and thirdly to assist in the choice of an appropriate instrument and assist with the strategy and planning regarding the implementation of the instrument.

The challenge in the design of an intervention for MATEP to support access to medium-term finance by businesses and to leverage contributions from other donors, financial institutions and investors, is to have the final product accepted as a sought-after product by the potential clients over time, thus to create a market for the product.

This report is divided into the following sections: section 2 expands on the research methodology, while section 3 describes the context within which the investigation took place, and within which the proposed instrument will be implemented. Section 4 looks at the results of data gathering, structured in a supply-and-demand side response summary. In section 5 the findings are summarised while the possible models are listed in section 6. Section 7 provides detail on the preferred model and implementation steps.

### **2. Methodology**

The investigation was conducted through the study of relevant documentation and obtaining further information through structured interviews with a selection of financial institutions and potential clients.

The selection of clients were made to cover as broad a spectrum of stakeholders as was possible within the time allocated for the gathering of data. Interviews were conducted with the following organisations during August 2005.

<b>Supply side interviews</b>	<b>Demand side interviews</b>
Lusaka Stock Exchange	ZEGA (Zambian Export Growers Association)
Equity Capital resources	Kembe Cold Storage (abattoir and tannery)
Securities & Exchange Commission	Forest Fruits (honey exporter)
Barclays Bank	York Farms (fresh produce exporter)
Finance Bank	Zambia National Farmers Union
Stanbic	Lusaka Hotel (hospitality and tourism industry)
Bank of Zambia (BoZ)	ZACCI (Zambian Associated Chamber of Commerce and Industry)
Development Bank of Zambia	
African Banking Corporation	
Standard Chartered bank	
Pangaea Partners	
Intermarket Securities	
ZATAC	

The supply-side interviews were selected to cover public-sector regulatory authorities, financial institutions and private-sector financial institutions (both multinational and locally owned). The demand-side interviews were selected to obtain a representative sample of businesses exporting a range of products, as well as business associations representative of Zambian commerce and industry.

### 3. Context

Without exception, the Zambian demand side businesses and business associations interviewed during the data gathering phase of this investigation stated that access to finance other than production credit was a constraint to expansion. The supply side interviews mirrored this perception by stating that their portfolios were heavily biased towards short term credit.

The lack of access by Zambian businesses to medium-term financing must be placed into context of the level of development and the structure and the depth of the financial sector in Zambia. Key players influencing the availability of medium-term finance are:

- The public-sector regulatory authority;
- The Zambian central bank (Bank of Zambia);
- Other public-sector financial institutions, for example, Development Bank of Zambia (DBZ);
- The Lusaka Stock Exchange (LuSe);
- Private commercial banks; and
- Private investors.

A mixture of regulatory interventions and the pursuit of profitable business by private-sector financial institutions determine the nature of the financial markets in Zambia. The investigation attempted to identify the key determinants in the supply of appropriate medium- to long-term financial instruments in support of the expansion of businesses involved in the export of locally produced and beneficiated products.

On the demand side, the profitability of the small- and medium-sized export businesses (the target clientele) will determine the demand for medium-term financing from sources outside the business. In this regard, both the growth prospects of the business and the current return on assets is of significance.

This investigation was done in response to the perception that Zambian enterprises have difficulty in obtaining medium term loans for expanding their businesses. It must furthermore be noted that most international development support agencies recognise this constraint and that many of the agencies have initiated interventions to address this constraint.

This investigation was undertaken for the MATEP project, with specific awareness of the time horizon of the project and that any proposed intervention must be implemented within the time frame until the end of the MATEP project,

## 4. Results

### 4.1 Supply side

From the interviews with supply-side role-players, it is evident that the Zambian financial system is in transition. Most institutions recognized the lack of medium-term finance and some institutions are actively involved in creating access to longer-term financial instruments, both debt and equity.

A key driver in the financial system is the Treasury Bill (T-bills) issued by the Bank of Zambia. Currently the yield on T-bills are approximating the inflation rate (about 17 per cent). This changed considerably over the past five years from an earlier situation of a high capital demand from the Zambian Government which resulted in yields on T-bills in excess of 30 per cent. Changes in government policy with a slow move towards liberalization of markets, the finalization of the debt relief programme and the strengthening of the Kwacha (related to the strength in commodity markets as is evident in the revival of the Zambian copper industry) all contributed to normalisation of T-bill pricing.

On the 19<sup>th</sup> of August 2005, the Bank of Zambia entered the longer-term bond market with an offer of two-year, three-year and five-year bonds. This represents the first steps by the Zambian public sector financial authorities to create longer-term investment vehicles that could, over time, provide a term structure that will serve as an indicator when analyzing the Zambian financial markets. The first auction indicated that investors have a decreasing appetite with bond term. This is illustrated by the bond issues being undersubscribed through subscription of 87 per cent, 72 per cent and 20 per cent for two-year, three-year and five-year bonds, respectively. A significant part of subscriptions were deeply discounted offers, indicating a wide variation in perceptions of the market. The apparent lack of interest and wide-ranging perceptions must, besides fundamental considerations, also be seen against this being a first auction.

The results of the first bond auction and the money market offering of 1 September 2005 yielded the term structure depicted in figure 1.

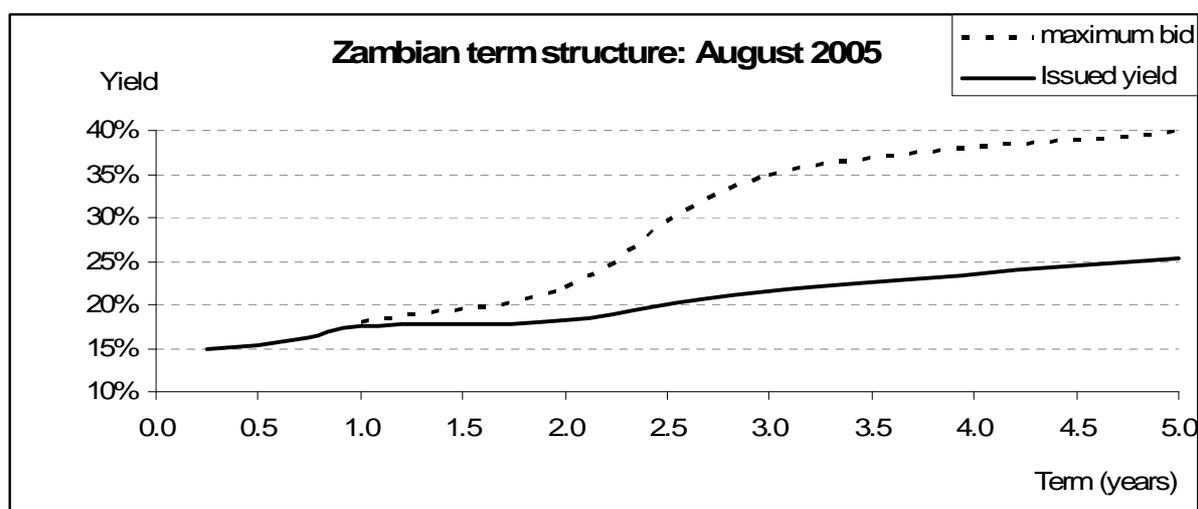


Figure 1. Zambian term structure

The term structure obtained from allocated paper shows a steep gradient from the 91-day T-bill rate of  $\pm 15\%$  to the five-year bond yield of 25%, indicative of the acceptance by the central bank of the risky nature of medium term investments under current Zambian capital market conditions. Successful three-year bond yields ranged between 22% and 26%.

Yields of the unsuccessful bids (i.e., above the BoZ cut-off rate) for the five-year bonds ranged between 35% and 40%. The wide gap between the yields on unsuccessful bids for the five-year bonds and the yields of allocated paper as well as the subscription for only 20% of the amount offered as five-year bonds points to uncertainty and a greater risk perception by the commercial sector on the longer term capital market.

However, the BoZ entry to the capital market will assist in creating stability over the longer term and will serve the immediate purpose of strengthening the balance sheets of specifically locally owned banks to enable them to offer debt instruments on longer terms.

The Lusaka Stock Exchange (LuSe) created an alternative for raising capital on the open market. There are currently 26 listed stocks with an average historical dividend yield of 3,6 per cent and an average historical earnings yield of 8,4 per cent. The all share index has grown from the 100 base value in January 1997 to 1 095 on 12 August 2005, an annualized growth rate of 32 per cent. A spurt in growth of the index at 43 per cent was experienced since January 2005 when the index was 766. Though investors cannot expect a high dividend income comparable to nominal interest income, the maintenance (or better) of real capital value over the longer term is illustrated by the growth in the index. LuSe is now embarking on the establishment of a development capital board that might provide an opportunity for small and medium-size enterprises (SMEs) to raise capital in the market. Though the cost to SMEs of the capital raised through this avenue might be lower (when measured in terms of expected dividend payments to investors) than commercial debt, the transaction cost might be a disincentive due to smaller transactions and relatively higher costs.

The commercial banking sector is mostly exposed to short-term activities, with deposits mostly on demand and debt to businesses predominantly focusing on short-term working capital (for example, as overdrafts and on warehouse receipts). The matching of the term of assets and liabilities is one of the key constraints to building a debt book with a longer average maturity. The placing of longer-term bonds in the market by the BoZ might stimulate the granting of longer-term debt by commercial banks, provided that these bonds are recognized as prescribed assets (i.e., counted as qualifying assets towards statutory reserve requirements). and that the yields that can be obtained on the longer-term bonds are attractive as investment by the financial sector. This is however a long-term effect and banks will only respond to investment in the capital market based on their perception of the market conditions and not react to the capital market offerings for the purpose of creating a capacity to enter the medium term loan market.

A further factor is the cost of loans. This is in part dictated by the 14 per cent interest-free statutory reserve requirement and the 35 per cent liquid-asset requirement for Kwacha deposits, the latter yielding at the T-bill rate. The net effect is that 49 per cent of Kwacha deposits are yielding an effective income of less than 6 per cent. The balance of the Kwacha deposits must thus yield an income sufficient to realize a real return on total Kwacha deposits. This results in a prime rate of more than 25 per cent.

A distinction can be drawn between the operations of locally owned banks and multinational banks. The latter have ready access to off-shore sources and can thus offer foreign currency loans. These loans are at a significant lower rate than Kwacha-denominated loans and are usually made at Libor (London inter bank overnight rate, currently 3,5 per cent) plus a

margin, resulting in foreign currency loans at 8,5 per cent to 10 per cent. The supply of foreign currency loans is a function of available foreign currency, and the ability of clients to meet security requirements. The local banks stated that they have difficulty in obtaining sufficient foreign currency to allow them to make foreign currency loans with ease.

During the period when T-bills yielded in excess of 30 per cent, the most viable business option for commercial banks was to invest all Kwacha deposits in T-bills, paying 8 per cent on deposits and earning 30 per cent on the T-bills. This limited their appetite for commercial lending. The current T-bill rates are negative (or only marginally positive) in real terms and it is thus not lucrative to invest in T-bills beyond the statutory requirements, resulting in banks seeking alternative investments for their Kwacha deposits..

Commercial banks are interested in expanding lending portfolios due to their liquid positions and lack of investment options in the Zambian market. One new development is the interest in unsecured personal payroll-linked loans that have shown vast growth and are currently one of the less risky business options for commercial banks.

As far as loans to businesses are concerned, the portfolios of all the banks are biased towards the short term (up to one year). Banks are not comfortable with the risk profile of longer-term exposure. All the banks have, however, indicated a desire to enter the longer-term market provided they can find clients with an acceptable risk rating. Banks are also investigating the use of public-sector and donor-support mechanisms to mitigate the risks in longer-term exposure.

Several support mechanisms are available, of which the three most prominent are:

- ZAMPIP (Zambia Agriculture, Marketing, Processing and Infrastructure Project). This is a facility through which the Bank of Zambia makes loans to private commercial banks to on-lend to borrowers. The capital available under ZAMPIP are held in two revolving funds of K16,6-billion and USD2-million. The loans are available at a (somewhat) lower than local market rate. ZAMPIP is not prescriptive as regards the on-lending rate. It thus supports the granting of medium-term loans through lowering the cost of capital. There are, however, constraints on the loan size and maximum term and also prescribed qualifying criteria for eligible enterprises. The credit risk is carried in totality by the intermediary bank. This facility is only appropriate for locally owned banks as multinationals can obtain off-shore capital at a lower cost.
- EDP (Enterprise Development Project / Multipurpose Credit Facility). This project is a World Bank facility administered by the Bank of Zambia with two different credit lines, the Investment Credit Facility (with a capital value of USD30-million and a three-to-seven - year loan term) and an Export Pre-shipment Facility (with a capital value of USD10-million for three-to-nine month loans). As for ZAMPIP, participating financial institutions (PFIs) act as intermediaries. The PFIs obtain loans at below market rates, grace periods are allowed, wholesale loans are US dollar- or euro-denominated, and repayment can be done in the hard currency or in Kwacha. The USD40-million facility was fully taken up by PFIs and roll-over increased the total disbursements to 150 per cent (USD60-million) of the facility capital over a three-and-a-half-year period. It can be assumed that the roll-over was achieved mostly through short-term loans as few loans under the Investment Credit Facility would have matured during the reporting period. The impact of the option by participating financial institutions to repay loans in the hard currency or in Kwacha as a draw card for financial institutions to participate is not known. In a market with a Kwacha strengthening against the hard currencies, this provision is lucrative as it amounts to a free forward contract on the Kwacha exchange rate with no downside risk. (e.g., if a banks takes out a US dollar loan, it will repay the loan in Kwacha if the Kwacha strengthened against the US dollar over the term of the loan, thus repaying less US

dollars than the nominal loan principal. If the Kwacha weakened against the US dollar over the term of the loan, the loan will be repaid in US dollar, thus repaying the exact loan principal).

- EIB (European Investment Bank). This is a wholesale facility to retail banks for loans with terms between four and 12 years. The facility has a total capital value of €50m, divided into two separate funds, €15m for non-traditional mining where the EIB assumes 75 per cent risk and €35m for other sectors where the EIB will assume 50 per cent risk. The EIB appraises the intermediary bank as a client to determine the risk for the EIB. Locally owned banks indicated that the appraisal process favours the multinational banks and the facility is thus more appropriate for use by the multinational banks.

ZAMPIP and EDP both offer a slightly discounted cost of capital and a term matching capability to participating financial institutions. There is, however, no risk mitigation other than what can be ascribed to the slightly higher margin that participating financial institutions can obtain through the use of these facilities and in the case of EDP, possible windfall gains through repayment in local currency if the local currency strengthened during the loan term. The EIB facility provides strong risk sharing but in practice seems to be limited to multinational banks. These facilities target the market constraints faced by financial institutions but fall short on creating institutional capacity to appraise loan applications. With risk sharing facilities the gradual transfer of risk should be considered.

Other than commercial banks, the following two institutions interviewed are pursuing initiatives to support access to development capital:

- DBZ. This public-owned bank is going through a restructuring process that includes shareholding by the Exim Bank of India and the DBSA (South Africa). DBZ is currently negotiating a USD10-million, 10-year loan from the DBSA. The future focus will be on long-term finance and the preference is to be a wholesaler rather than a retailer. More than 50 per cent of the current loan book is loans with a maximum of one-year term (in other words, working capital). In the balance of the portfolio, the maximum term is 48 months. Before restructuring, DBZ was overexposed to the textile industry. In the new approach, agro-processing will be a priority.
- Equity (Venture) Capital Resources. This is a private initiative to establish a capital fund through which qualifying enterprises will access bonds and/or equity capital. The promoter intends to raise K1-billion for targeted investment and will not be open to applications. The sectors targeted for investment are agro-processing, manufacturing, IT and property development.

## **4.2 Demand side**

All the interviews with demand-side stakeholders highlighted the cost of borrowing and high collateral requirements as the main hurdles to access finance, short or medium term. The interviewees stated a concern over the relevance of debt as source of funding given the cost of debt relative to the return on total capital of their businesses. In primary agriculture, the return on total capital is less than the cost of borrowed funds, e.g. a dairy enterprise stated that their return on total assets was 8% per year. This results in a negative financial lever and enterprises will only borrow under conditions where the owners are prepared to forfeit income on their equity capital for the sake of gaining access to finance. A negative financial lever also limits the debt:equity ratio required by a financier. The exception to this scenario is where an exporter can access foreign currency loans at a competitive rate, with the loan being serviced by export earnings, thus possibly working with a positive financial lever.

In the tourism industry the payback period on an investment can be 3 to 4 years, implying a return on assets of 25% to 33% when calculated on no cost of capital. ZACCI (Zambian Associated Chamber of Commerce and Industry) stated that their members generally complains of returns on assets below the local currency cost of loans and marginally above the cost of foreign currency loans.

The preferred method of financing was stated by flower and vegetable exporters to be from retained income. They will only consider debt financing in foreign currency for large capital developments if they can meet the collateral requirements. The latter is often limited to off-shore assets, thus excluding many potential clients.

## **5. Summary of findings**

In Zambia there is a current lack of term instruments, due to:

- The constraints faced by the financial sector in providing term credit through difficulty in asset/liability term matching;
- the risk profile of medium-term loans as perceived by the financial sector; and
- The unwillingness (or inability) by the demand side to take up credit at the current market price and/or collateral requirements.

To stimulate expansion of export businesses through creating access to medium-term capital, the main challenges are in the cost-of-capital and the client-risk/security requirements. A distinction must be made between loans in Kwacha and loans in foreign currency:

- Kwacha loans (if accessible through the ability and willingness to comply with the high collateral requirements) are costly due to the central bank requirements for Kwacha deposits;
- Foreign currency loans are less costly but the availability of foreign currency is a problem for local banks. Multinational banks can more readily access foreign currency but the collateral requirements can often not be met by loan applicants (for example, off-shore assets).

The cost issue can best be addressed through targeting support at export businesses that will benefit from access to foreign currency loans or to provide equity capital. Interventions aimed at lowering the cost of capital through subsidies are not supported. A general improvement in the cost of capital is related to the dynamics of the Zambian financial markets and will respond to successes of BoZ initiatives to stabilise the markets and will only be realised over the medium to longer term. Interventions by donor agencies in the latter will be limited to the support of the BoZ initiatives at a policy level.

The risk aspect can be solved through interventions that will assume more risk than what the commercial financial sector is prepared to accept. The options available to assume risk are limited by the apparent disequilibrium between risk-return relationships of debt relative to equity.

MATEP funds can be applied through either creating a financial instrument with an equity character or through assuming a portion of risk on term loans. Our proposed models consider this in the next section.

## **6. Models to consider**

Various models can be proposed to attempt creating a product for which there will be a demand in the market. The interviews indicate that any financial instrument will need to be

placed at terms and conditions that will be lucrative to potential clients. This rules out any straight debt instrument in local currency. The proposed models must also be measured against achieving MATEP objectives.

The MATEP objectives for utilizing the allocated USD1-million are:

- To support the expansion of export business;
- To mostly target the agricultural sector;
- To apply the MATEP funds to leverage a greater impact than the nominal USD1-million (a stated target is USD20-million over five years);
- To see results prior to the end of MATEP; and
- To have continuity of the intervention after the expiration of MATEP.

The following alternatives can be considered:

- **Model 1: Equity investment**

Provide loan funding to an equity investor for targeted (defined sectors and clients) investment. An entity such as Equity Capital Resources (ECR) can be considered. As the funds available through MATEP can not be invested as equity, a loan to the investment company will have to be made. Though an investment by MATEP will comply superficially to USAID requirements, it will in essence be a venture capital investment through being exposed to the risk of the underlying assets; in other words, equity investment in target companies. This type of investment normally requires active participation in directing the operations of the venture, an activity for which MATEP is neither staffed nor funded to embark on. The return on total assets (particularly in agriculture and agro-processing) is also only marginally above the cost of foreign currency loans, thus providing little leeway for deviation from projections to service the loan. The loan will most likely have capital and interest grace periods with repayment made as a bullet payment at the end of the loan period and the exit mechanism might be difficult to apply in practice. Any exit mechanism will require an up-front agreement with an investor(s) as the ability of ECR to find equity investors has not yet been proved. Investment in venture capital funds is generally recognised as one of the key areas for intervention in support of developing economies. An intervention through supporting the equity base of an enterprise requires active participation in the management of the recipient enterprise. The MATEP project currently do not have sufficient capacity or resources to create a capability in support of venture capital investments. Thus, the mechanisms available to MATEP, the risk exposure and the hands-on management support required, rules out this alternative.

- **Model 2: Support to proposed parastatal initiatives**

Contribute to the DBZ initiative based on DBSA loan funding. This alternative is attractive as it is targeting long-term financing for the expansion of agriculture and agro-processing. The stated objectives of DBZ dovetail with MATEP views on constraints to the expansion of non-mining export ventures. Support to DBZ to realize its post restructuring objectives will result in a meaningful intervention. However, a constraint is that the maximum term of the MATEP support runs short of the period required to implement the DBZ initiative. The track record of DBZ is also of concern, with a weak institutional history. The latter points to active participation by MATEP at a level that can not be accommodated under the current MATEP agreement.

- **Model 3: Creation of a quasi-equity instrument**

Create a financial instrument with an equity character through an organization such as ZATAC. A loan facility, with or without an equity character, will need to be at rates that can be serviced by the targeted projects. With negative financial leverage being a common

occurrence, it must be accepted that nominal returns on quasi-equity will yield below the current cost of Kwacha denominated loans. This implies targeting only those clients that will qualify for foreign currency financing. The equity nature of the instrument will effectively cap the income at the return to assets which is marginally above the cost of foreign-currency denominated loans and below the cost of Kwacha loans. Under such income regimes, equity investors are not rewarded as per the theoretical risk-return continuum.

An equity character implies subordination of payments, both income and capital, with the likelihood of income capitalisation and a bullet repayment at the end of the term. With income marginally above the cost of borrowed funds, the accumulation of sufficient reserves to repay through a bullet payment might be problematic and increases the default risk to the investor. This is particularly true for the limited time period available to MATEP for intervention in this market. Even a 33% return on assets will require a minimum payback period of 3 years.

Subordination of debt implies the assumption of primary risk relative to financial institutions exposed through straight debt instruments. The impact will be to assist the entrepreneur but it will have little or no influence on the financial sector to assist in improving their capacity to operate in the medium-term debt market.

Given the limited capital available to MATEP for the proposed intervention, an enduring impact can better be achieved through assisting financial institutions to enter the medium term market than to impact on a select few enterprises.

▪ **Model 4: Creation of a disaggregated loan term debt instrument – “Incubator” Model**

Create a foreign-currency loan instrument in collaboration with commercial banks through which the MATEP fund assumes initial credit risk, phasing out the MATEP risk exposure as the borrower establishes credibility with the commercial bank. The main advantage of this model is that it provides support to the financial sector to gradually enter the medium-term market in a manner that could lead to a sustained presence. It thus serves as an incubator through which the current constraints faced by the commercial banks in providing medium term credit, is phased out rather than being statically supported without a planned withdrawal. The proposed intervention will not distort the financial market through subsidization of the cost of financial products but will intervene through the assumption of that portion of credit risk currently not acceptable to the financial institutions. Measured against the MATEP objectives and the likelihood of sustained impact of the intervention, the preferred model is Model 4, discussed in more detail under paragraph 7.

For each of the proposed models, technical support is required as it is generally accepted that project appraisal capability (specifically for the agricultural sector) is lacking in the financial sector in Zambia, and also project proposal capability is largely lacking on the demand side. The provision of technical assistance is proposed as an integral part of an intervention. Due to the current portfolio mix of the commercial banks, there is little need for skilled staff to appraise credit applications aimed at business expansion. The provision of technical assistance to create this capability is deemed to be a key element in the successful launch and implementation of any intervention to support a financial product.

In addition it is also important to consider the DCA function within USAID in alleviating the collateral requirements for different loan types. Most notably hard-currency loans where the collateral required focuses on overseas assets.

## 7. The “Incubator” model

This “Incubator” model (model 4) addresses the risk perception (and real-risk hurdles), the collateral hurdles and is proposed in such a way that it can easily become part of the commercial banks’ day-to-day business. The crude model constructed to look at initial return expectations indicates returns at levels where it can justify commercial bank involvement.

This model proposes a support mechanism to commercial banks through which MATEP funding is applied to assume most of the initial credit risk, phasing out as risk bearer during the term of the loan. This allows the commercial bank to participate in the period during which the borrower builds a track record to the point of becoming bankable. The net effect of this model is that the risk profile (as appraised by the commercial bank) of a medium-term loan is changed through the MATEP intervention to the risk profile of a shorter-term loan. In effect, MATEP assists in changing the term structure of the loan and solving the collateral problem.

The following methodology is proposed:

- MATEP to consider bringing a technical expert (agricultural economist/financial analyst) on board to assist with the project;
- MATEP to enter into a memorandum of understanding with each participating bank (this could be on the basis of setting criteria for participation and inviting banks to participate based on the set criteria);
- MATEP to interact with possible applicants for finance to ensure the instrument is understood by everybody;
- Applications for loans to be submitted to a participating bank within their normal procedures;
- Technical assistance in support of the appraisal of the loan application being made available to the participating bank by MATEP;
- Upon approval of the loan, a term investment is made by MATEP with the participating bank as per the terms and conditions set out in the MoU. The terms and conditions for MATEP support of a loan approved by a participating bank is targeted at creating bankability for the bank client and to provide a phasing in period for the bank to adjust to the exposure of a term portfolio.
- MATEP should consider outsourcing the management of the process and the funds to an organisation like ZATAC

### Asset/liability term matching

The proposed MATEP intervention addresses this issue through making a deposit(s) with the commercial bank to satisfy the term matching requirement. In the ideal case, the capital value of the deposit should decline back-to-back with the outstanding capital value of the term loan. Banks might shy away from a deposit of this nature as they do not usually have such an investment product available. The implementation of such an investment product will not be difficult in practice as it is a mirror image of a loan product, The back-to-back matching can be achieved through disaggregating the total amount to be deposited into deposits for each year of the loan term. Thus, on a three year loan three deposits will be made per approved loan, i.e., a one-year, a two-year and a three-year deposit (leading to the product title “disaggregated loan term model”). Two options for the amount to be deposited are proposed:

- Option 1. The total amount to be deposited equal to the loan principal less the capital redemption in year one. This is proposed to obtain a higher level of MATEP support for riskier loans as measured by loan term. A two year loan with even capital redemption will thus draw 50% of the loan principal as MATEP support whereas a similar three year loan will draw 67% MATEP support. In theory the MATEP

exposure pro rata to loan term will lead to excessive support over long term loans. In practice, however, the MATEP support is targeting medium term loans where the MATEP exposure through a linear relationship with loan term will serve the purpose of providing adequate support relative to the risk profile of term loans. (Should longer term loans be contemplated, a linear relationship other than linear should be applied).

- Option 2. The total amount to be deposited equal to the loan principal. This is the less preferred option but might be required for local banks to alleviate difficulty in obtaining foreign currency.

#### Risk and collateral security

In theory, the risk of an investment decreases as the projected cash inflows are realized. Thus the invested capital has the greatest risk of default during the early period of the investment. This default risk decreases with the term of investment exposure. The proposed MATEP intervention addresses this issue through pledging a diminishing portion of the deposit as collateral security for the loan. The net effect is that the bank has a low exposure to the early risk of the loan while phasing into normal credit risk as the loan matures, thus as the client establishes a track record. It is proposed that, under option 1, the full amount deposited by MATEP is pledged as collateral security during year one of the loan term, declining evenly through the loan term to no cover in the final year of the loan. For a three year loan this translates to a 50% security cover in year two and no cover in year three. The net effect under option 1 for a three year loan is that MATEP provides 67% risk cover in year one and 33% risk cover in year two. Under option 2, the risk cover in year one is proposed as that portion of the loan equal to the loan term minus one as fraction of the loan term ( $(n-1/n)$ ). The net effect is similar levels of collateral cover than under option 1.

#### Interest cost and income

The model proposes allocation of risk premium interest to the risk taker. In the model this will result in MATEP receiving a portion of the risk premium above prime rate, pro rata to the level of collateral security pledged. Thus, If a risk premium of 7% is used in year one (i.e. an interest rate of prime +7%) for a three year loan on which MATEP provides 67% ( $\frac{2}{3}$ ) collateral cover, MATEP will receive  $\frac{2}{3}$  of 7% as risk premium income. The model furthermore proposes a gradual reduction of the risk premium interest over the term of the loan, for loans not in default. This principle is compatible with the improvement in the risk profile of the client over the term of the loan.

#### Leveraging of MATEP funds

Annexure 1 clearly indicates the ability of MATEP to increase outreach through rolling over the funds with a ratio of 1:4 in the case of option 1 as illustrated in the annexure.

The strategy suggested also should include the contribution of participating banks over the MATEP project period that will also increase the leverage as required. In addition it should include an attempt to use the DCA by using it as portfolio guarantees for the participating banks. This would assist in going for lower MATEP deposits per loan, and after a while where a bank and a client has build up adequate information on mutual performance, it should lead to a situation where MATEP can withdraw from the relationship.

The choice between Option 1 and Option 2 will be determined by negotiation with participating banks.

#### Technical assistance

Technical assistance support is proposed as an integral service forming part of the model. The thrust of the technical assistance is to provide support to the participating banks in honing their skills on appraisal of medium term loan applications for expansion of the applicants' business. It is proposed that the technical assistance be provided via an organization such as ZATAC.

In a model through which the technical assistance is provided through an intermediary (e.g. ZATAC), the administration of the model can also be contracted to the intermediary. This will create capacity with the intermediary to maintain and expand the program once the MATEP project is completed, the funds then being transferred to the intermediary organization.

ZATAC has already gained experience in the administration of ZIF (the short term financial assistance fund launched by MATEP). This experience will contribute to the ease of implementation of the medium term loan support as proposed in this study.

## Annex: Proposed “Incubator” Model for Creating Access to Medium-term Loans

For commercial banks, two key issues in advancing term loans are:

- **maturity matching of assets / liabilities**

The proposed MATEP intervention addresses this issue through making a deposit(s) with the commercial bank to satisfy the term matching requirement. In the ideal case, the capital value of the deposit should decline back-to-back with the outstanding capital value of the term loan. Even if banks do not have such an investment product available, implementation will not be difficult in practice as it is a mirror image of a loan product.

- **risk profile of term loans / collateral requirements**

The risk of an investment decreases as the projected cash inflows are realized. Thus the invested capital has the greatest risk of default during the early period of the investment and default risk decreases with the term of investment exposure. The proposed MATEP intervention addresses this issue through pledging a diminishing portion of the deposit as collateral security for the loan. The net effect is that bank has a low exposure to the early risk of the loan whilst phasing into normal credit risk as the loan matures and the client establishes a track record.

The following example illustrates the cash flows and risks of the various parties.

Principal: 100 Capital redeemed in equal installments  
Term: 3 years

Prime rate (Foreign currency):	8.0%	
Risk premium at origination:	4%	(above prime rate)
Risk premium at maturity:	2%	(above prime rate)
Risk premium reduction:	1%	(per year)
Deposit rate:	4%	

- The example uses equal installments in repayment of capital. The model can also be used with amortised repayments.
- The model allows for risk premium interest payments to the party carrying the risk
- In the example, capital repayments are made annually at the end of the year. In practice, a higher frequency of capital repayments is proposed, e.g. such as with amortisation.
- The rate of capital repayment on the loan is applied to the MATEP deposit. This yields a situation where the Bank asset / liability terms for the product is exactly matched.
- Two options are illustrated, in Option 1 the MATEP deposit matches the loan balance less the Year 1 redemption. In Option 2 the deposit matches 100% of the loan balance.

	Year	Loan origination	End of year	End of year	End of year
		0	1	2	3
<b>CLIENT:</b>	Loan principal balance	100	66.7	33.3	0.0
	Capital repaid		33.3	33.3	33.3
	Interest on outstanding principal		12.0	7.3	3.3
	Prime		8.0	5.3	2.7
	Risk premium		4.0	2.0	0.7
	Effective rate		12.00%	11.00%	10.00%

OPTION 1: MATEP deposit matches loan capital less year one redemption.

	Year	Loan origination 0	End of year 1	End of year 2	End of year 3
<b>MATEP:</b>	Deposit balance	66.7	44.4	22.2	0.0
	Capital repaid (to be recycled)		22.2	22.2	22.2
	Collateral pledge as % of deposit balance		100%	50%	0%
	Amount pledged as collateral		67	22	0
	% collateral on loan balance		67%	33%	0%
	Interest income		5.3	2.4	0.9
	from deposit		2.7	1.8	0.9
	from risk premium on pledged collateral		2.67	0.67	0
	Net interest rate earned		8.0%	5.5%	4.0%
<b>BANK:</b>	Capital other than MATEP sourced	33.3	22.2	11.1	0.0
	Capital amount at risk		33	44	33
	Capital at risk as % of loan balance		33%	67%	100%
	Net interest income		6.7	4.9	2.4
	Paid		5.3	2.4	0.9
	Received		12.0	7.3	3.3

OPTION 2: MATEP deposit matches the loan capital balance

<b>MATEP:</b>	Deposit balance	100	66.7	33.3	0.0
	Capital repaid (to be recycled)		33.3	33.3	33.3
	Collateral pledge as % of deposit balance		67%	33%	0%
	Amount pledged as collateral		67	22	0
	Interest income		6.7	3.3	1.3
	from deposit		4.0	2.7	1.3
	from risk margin		2.67	0.67	0.00
	Net interest rate earned		6.7%	5.0%	4.0%
<b>BANK:</b>	Capital other than MATEP sourced	0	0	0	0
	Capital amount at risk		33.3	44.4	33.3
	Capital at risk as % of loan balance		33%	67%	100%
	Net interest income		5.3	4.0	2.0
	Paid		6.7	3.3	1.3
	Received		12.0	7.3	3.3

**MATEP PORTFOLIO LEVERAGING:**

Start-up capital \$:	1,000,000	Average loan size \$:	100,000
		Deposit requirement option 1:	66,667
		Deposit requirement option 2:	100,000

	Period:	0	1	2	3
<b>OPTION 1</b>					
MATEP \$ value applied		1,000,000	413,333	540,844	723,149
Capital repaid: loans cycle 1			333,333	333,333	333,333
Capital repaid: loans cycle 2				137,778	137,778
Capital repaid: loans cycle 3					180,281
Interest earned: loans cycle 1			80,000	36,667	13,333
Interest earned: loans cycle 2				33,067	15,156
Interest earned: loans cycle 3					43,268
Number of loans issued		15.0	6.2	8.1	10.8
Cumulative number of loans issued		15.0	21.2	29.3	40.2
Cumulative \$ value of loans issued		1,500,000	2,120,000	2,931,267	4,015,990
<b>OPTION 2</b>					
MATEP \$ value applied		1,000,000	400,000	526,667	704,000
Capital repaid: loans cycle 1			333,333	333,333	333,333
Capital repaid: loans cycle 2				133,333	133,333
Capital repaid: loans cycle 3					175,556
Interest earned: loans cycle 1			66,667	33,333	13,333
Interest earned: loans cycle 2				26,667	13,333
Interest earned: loans cycle 3					35,111
Number of loans issued		10.0	4.0	5.3	7.0
Cumulative number of loans issued		10.0	14.0	19.3	26.3
Cumulative \$ value of loans issued		1,000,000	1,400,000	1,926,667	2,630,667

The two tables show the impact of the two options on the MATEP portfolio, assuming that the \$1million is applied in full. The results can be scaled down pro rata to the actual amount applied as capital.

The partial contribution made by participating banks to the loan capital amount under option 1 results in a greater direct leverage of MATEP funds in a ratio of 1:4 whereas option 2 provides a 1:2.6 direct leverage. Although this is still low, the value of the 'incubator' nature of the model is that it will assist participating banks to grow their medium term portfolios through exposure to the sector by the MATEP intervention.