UPSCALING INCLUSIVE URBAN TRANSFORMATION IN RWANDA

TESTING THE FINANCIAL FEASIBILITY OF PARTICIPATORY REHOUSING IN KIGALI

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PROECCO
PROmoting Employment through Climate Responsive COnstruction

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INTRODUCTION

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Background

Through the PROECCO program, the Swiss Agency for Development and Cooperation (SDC) supports the City of Kigali in the planning and implementation of 'Community Rehousing and Neighbourhood Upgrading Project in Unplanned Settlements' in the District of Nyarugenge.

The project, technically coordinated by Skat Consulting Ltd (Swiss Resource Centre and Consultancies for Development), the implementing agency selected by SDC to implement the PROECCO Program, aims to pilot the in situ rehousing of residents, promoting a participatory land readjustment process where residents are provided with improved multi-storey housing solutions in an optic of neighbourhood upgrading, densification and, potentially, the attraction of private sector investment.

The so-called "Mpazi" project started in 2020 and has since then completed four residential and mixed-use blocks, rehousing approximately 95 households (both owners and tenants) in dwelling units of different sizes.

The rationale for PROECCO's support to the City of Kigali lies in the intention to provide scalable mechanisms to address the sustainable transformation (socially, environmentally, and financially) of the unplanned settlements in the city and other parts of the country.

Access to Finance Rwanda (AfR) champions financial inclusion and financial sector development for Rwanda's low-income communities, particularly the rural poor, women, youth and MSMEs. In 2021, AfR expanded its portfolio to include affordable housing, joining forces with partners like SDC to design and pilot financial products to support low-income urban households to access quality, affordable housing.

RESEARCH OBJECTIVE

This document has been developed to contribute to the ongoing conversation around the financial feasibility of an urban transformation focused on re-housing, limited need for relocation of residents and with the objective of unlocking land value potential in a logic of densification and urban upgrading

Purpose

This document presents the conclusions of a rapid study undertaken between November 2022 and February 2023, to provide a preliminary review of the Mpazi Rehousing project and to evaluate the financial feasibility and the implementation modalities of an inclusive urban transformation at a larger scale.

This rapid study builds on previous studies on the Mpazi Rehousing Project, notably on the Business Plan and Financial Model prepared by PROECCO. The rapid study has further detailed that Financial Model and has reviewed its base assumptions, such as land-use, household payment capacity and costs. To support the model´s assumptions, the study presents more detailed considerations on the following aspects: implementation, financing and investment, and market aspects. Details on assumptions could be consulted in this document. At the end of the study, a set of conclusions and recommendations is presented. An integral part of this report are the annexes. The most relevant annex is an excel file that contains the financial model, which is submitted together with this document. Other annexes present details on the financial and market annexes. This study is aware of challenges in the project´s context, such as ones mentioned below:

- City and government officials have not developed a way to capitalize from land value capture. It is not yet understood as a municipal financing tool.

- In Rwanda, landowners in unplanned settlements are the largest providers of rental housing in the country. One of the principal objectives of the rehousing project shall be to grow/improve the quality and quantity of this housing stock. The problem is how to ensure that landowners don't speculate as that is one of the primary reasons why they likely agree to this transformation.

- Most landowners in unplanned settlements are not concerned with building equity or appreciating the value of their plot, rather they are concerned with meeting their current financial obligations. For 17% of landowners in the project area (household survey from 11.2020), the money from rental units (commercial or residential) on their plots is their main source of income.

- A main cost input into the rehousing model is the infrastructure. Deep research needs to be done on whether there are less costly alternatives (e.g., off-grid systems) that can meet the needs of these projects.

- Policies surrounding urban development, upgrading, densification, construction norms, etc. already exist but they are often too onerous for these delicate situations.

Executive Summary

The Mpazi Rehousing Project is a pilot experience which could be replicated elsewhere in the City of Kigali and other growing cities across the country. With around 70% of unplanned settlements, Kigali requires a mechanism to upgrade unplanned settlements, which is sustainable in the long term, and that allows for community participation while attracting financing both from the private sector and from the international cooperation.

Implementation through a fully public mechanism is not sustainable, given the scale and breath of the enterprise. As illustrated in the estimation presented below, a significant investment is required to upgrade unplanned settlements in Kigali. A fully private approach is also not sustainable given the level of risk of the venture. Therefore, the upgrading of unplanned settlements should be implemented through a collaboration of the public and the private sector, a PPP, which could assume the form of a specialised SPV.

The main objective of the Mpazi rehousing project is to develop a model that could be replicated elsewhere in Kigali. A brief calculation assuming a complete upgrade of unplanned settlements in 2022 indicates that about $.28 billion are needed. This figure assumes only building costs of dwelling units. The cost of land and infrastructure is not included.

Housing is the result of an equation that includes economic, financial, regulatory, institutional, and technological factors. In other words, to upgrade unplanned settlements, parallel measures must be taken to improve income of households, adequate policies and institutions must be in place and technologies to produce the lowest possible cost (while maintaining quality of construction), must be in place. Now, the question is: why upgrade unplanned settlements? There are several reasons. One of them, is the demographic growth and the need to densify the city given the relative scarcity of land in Rwanda. Another important reason is the environmental benefits of a denser, more resilient city (thanks to higher quality of construction and more efficient land use). Then, of course, there is the improved quality of life of people and finally, but importantly, the upgrading unplanned settlements could contribute to

economic activity in Kigali. Upgrading the neighbourhood at and at the unit house level creates a positive economic development for the area. In addition, upgrading one dwelling unit generates at least 3 full-time jobs. Therefore, thousands of jobs could be generated in Kigali through the upgrading of unplanned settlements, which eventually could lead to the creation of a self-sustaining virtual circle of growth and improvement in the city. In addition, the process of housing and construction sectors. upgrading generates quality assets and improved equity positions of households. To accomplish all this, a permanent and credible institutional setup must be in place.

A city SPV could be developed to include relevant public and private actors, including as well international donors and civil society, whose sole purpose would be to promote the upgrading of settlements. Smaller SPV could be developed to implement the upgrading of specific sectors of the city, like Mpazi.

The initiative of the Mpazi Rehousing project could adopt the form of an SPV, with participation of public partners, such as the City of Kigali and Mininfra, international cooperation actors (such the SDC and others), and private partners, such as private investors (domestic and/or international).

An SPV could facilitate the creation of a self-sustaining financing mechanism. Contributions from the public and private partners would be deposited into the SPV, which would utilise them to develop the Mpazi rehousing project. Once residential and tertiary property have been developed, those assets could be sold to off-takers, such as long-term domestic or international investors (i.e., pension funds or impact investors), more details on this point are given in the next chapter of this report.

FEASIBILITY

- *Based on the results obtained, a 100% cross-subsidy of the Rehousing Sector is feasible through markup to the cost of the Investment Sector.*
- *This markup can necessarily generate dwelling units that are significantly more expensive in the Investment Sector, which may lead to a process of gentrification of the area.*
- *It is also possible to affirm that the objectives of 100% rehousing of the owner households and 50% of the tenant households, could be achieved by largely using a rental modality of co-housing apartments and private apartments.*
- *The study also indicates that the greatest GFA and cost efficiency is achieved when using G+2 in the Rehousing Sector and G+5 in the Investment Sector. This scenario could generate up to 2,043 DU, representing an additional 1,472 DU for Mpazi project in Kigali (4ha), almost a fourfold increase in the housing capacity of the area.*
- *The IRR yielded by the Investment Sector (under the chosen scenario) reaches 25%, which is in line with the expectations of private investors in Kigali.*

01

LOCAL HOUSING MARKET CONSIDERATIONS

- Affordability
- Ability to Pay
- Real Estate Market

Affordability

In 2015, the Government of Rwanda released the Prime Minister's Instructions (PMI) No. 48 30/11/2015 Determining the Conditions and Procedures for Obtaining Government Support for Affordable and High-Density Housing Project. Not only did the PMI determine the eligibility criteria for accessing subsidies for the construction of affordable housing, but they also capped the construction costs of a so-called affordable home.

Since the last revision in April 2022, this number is set at 40 million FRW (equivalent to approximately $37,000) or FRW 500,000/m2 (equivalent to approximately $462/m2) a figure that contractors and developers struggle to respect.

While the Rehousing Project has embraced SDC/Skat PROECCO's housing typologies that allow for construction costs below FRW 300,000/m2, they remain out of reach for most of the population in the upgraded area. Not only does this underscore the strong demand for quality, affordable, rental housing options, it highlights the need for income generating programs to help defray construction and development costs. For this reason, in addition to reviewing potential subsidies (like those offered through the PMI) and financing options, a model for self-financed neighborhood upgrading requires a more detailed review of the earning and spending capacities of the target population.

***TASK 1**: HOW TO DETERMINE AFFORDABILITY*

- *Policy review: consult national and local policies on affordable housing and identify sources of government support and funding, identify eligibility criteria determining access to those resources.* ***Q**: Is the target population eligible? How can they benefit?*
- *Exchange with builders and developers: assess typical construction and development costs to extract an average of total residential project costs for the local market*

Ability to Pay

One of the primary goals of the Rehousing Project is to allow low-income property owners

to access safe and decent housing and services through the upgradation of informal areas. However, given the low-purchasing power of most households in neighborhoods like Mpazi, the project has been structured using public funds (MINALOC via CoK) and contributions from development partners (World Bank and SDC). When evaluating other development models, however, all sources of income, including those from project beneficiaries, must be considered.

From an affordability perspective (e.g., what households can afford to pay for their housing), net incomes, rather than gross incomes, are of primary interest. However, given the large number of residents employed informally, there is limited information on whether the residents of the project area pay taxes (particularly on income gained from rent), so it is assumed that reported income is net.

A survey conducted in November 2020 revealed the following about residents' average monthly income is FRW 137,000 and FRW 84,000 per month for landowners and tenants respectively. Although expenditure data was not collected in the initial survey, data from the EICV5 survey indicates that of the approximately 0.38 million households (14% of all Rwandan HHs) living in unplanned neighborhoods, the median monthly income is FRW 133,000, with median expenses of 21% on transport and housing.

With food representing the largest portion of monthly spending for both landowners and tenants, and food prices rising steadily nationwide, it is increasingly challenging to envisage that households will have more money to dedicate to housing in the future. So not only is it critical to secure their present income streams, particularly those from rental income, the rehousing project should endeavor to decrease the utility and transport expenses through strategic mixed-use (residential, commercial, and tertiary) programming on the site.

***TASK 2**: HOW TO ESTIMATE THE LOCAL COMMUNITY'S ABILITY TO PAY FOR NEW ACCOMMODATION*

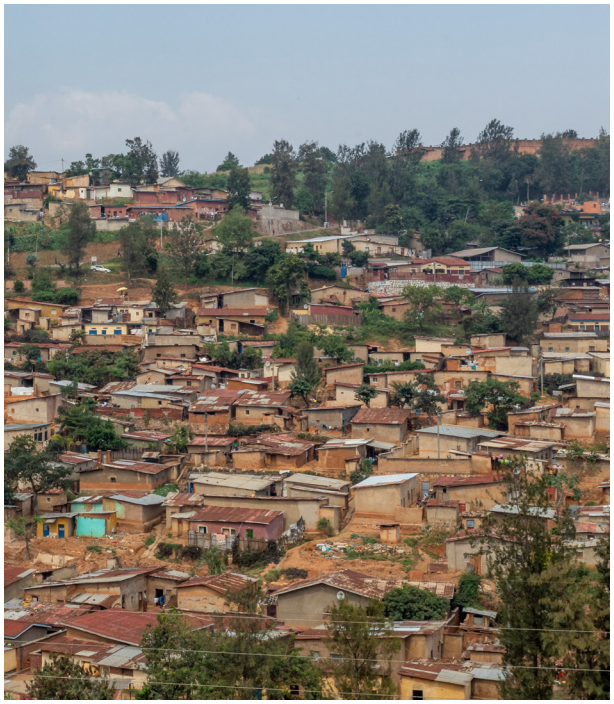
- *Household survey: collect data from neighborhood residents regarding their monthly incomes and expenditures / Highlight earnings coming from properties, if any*
- *Data analysis: Review income and expenditure data as reported in the National Census and/or Integrated Household Survey to prepare high level overview identifying household trends*

Real Estate Market

Rental accommodation, already significant in urban areas in Rwanda, is likely to grow as the population urbanizes, creating development opportunities for those who own land in well-located urban areas. Consequently, despite small parcel sizes and an informal housing stock, existing landowners in the upgrading zone have the possibility to become active suppliers of low-cost rental property, be it for residential or commercial purposes.

The most recent survey of landowners from the Gitega project sub-area (Block A and B) reveals that 59% of the residents in the areas are tenants. Of the 17 property owners, 88% are landlords, earning anywhere from FRW 20,000 to FRW 340,000 per month for residential accommodation.

Therefore, while the most commonly stated goal of the CoK/SDC/Skat Rehousing Project is to improve the quality and safety of low-income housing through code compliance and improved access to services, scaling up the rehousing concept requires an understanding of the size and performance of the real estate market, particularly as it relates to informal rental properties. The hypothesis being that if the upgradation of unplanned settlements can generate sufficient rental income, a portion of construction and development costs could be



offset, making the investment into neighborhood improvement a lucrative one for both property owners and the municipal authorities. To better evaluate the potential of this cross-financing scenario, a survey of rental properties on the site (residential) and across the city (tertiary) is summarized on the following page.

Results from an informal survey of current residents reveals that no rental tenants have returned after the rehousing exercise was completed, due in part to displacement during the construction period, but mostly due to the rise in rents. A survey of the 7 owners of Block A, reveal that all but 2 of them have more than doubled their monthly rental income as a result of the rehousing process. This is consistent with the experience recorded for the Demonstration House in Kimisagara sector (Phase 0). In seeking to raise additional rental capital through rehousing, it is important to note that more rental space shall need to be provided for those at the bottom of the income pyramid.

With respect to the new property that shall come on site, focus group discussions with young unmarried professionals earning between FRW 250,000 and 400,000 per month, would find the Rehousing Project area very interesting for accommodation. With rising transport costs, many young professionals are looking for decent, affordable housing in the center of the city with easy access to their jobs and social hangout spots. It is estimated that they would be willing to pay between FRW 100,000 and 150,000 for such an accommodation.

***TASK 3**: HOW TO FIX PRICES FOR NEW RESIDENTIAL AND TERTIARY RENTAL PROPERTIES?*

- *Benchmarking: Calculate average price per square meter of existing rental stock (residential and tertiary properties) to determine average existing profit margins per square meter in project area. Repeat the exercise with larger radius.*
- *Estimation: Using average construction costs measured in TASK 1, determine maximum development costs required for landowners in the project area to maintain the same margin from rental properties*
- *Focus Groups: Organize discussion sessions with urban renters (young*

professionals, small families, small business owners, etc.) to determine their willingness to pay for rental property in the project area. Compare these amounts to existing rental offerings across the project area and the city.

02

IDENTIFYING SOURCES OF FINANCING

- SPVs
- Rehousing finance
- Local finance
- Intl' Finance

Special Purpose Vehicles (SPVs)

The ownership and incorporation structure of the Mpazi project informs the potential financing opportunities. If we assume that all rehousing of unplanned developments in Kigali or Rwanda overall is structured as a Special Purpose Vehicle (SPV), like Kigali Innovation City (KIC) or Kigali International Financial Centre (KIFC), the Mpazi project can be structured as either a single project part of an overall rehousing SPV or a sub-SPV with contributions from the overall housing SPV. Both options are illustrated on the following page.

***TASK 1**: HOW TO SELECT THE OWNERSHIP AND INCORPORATION STRUCTURE OF THE REHOUSING COMPANY*

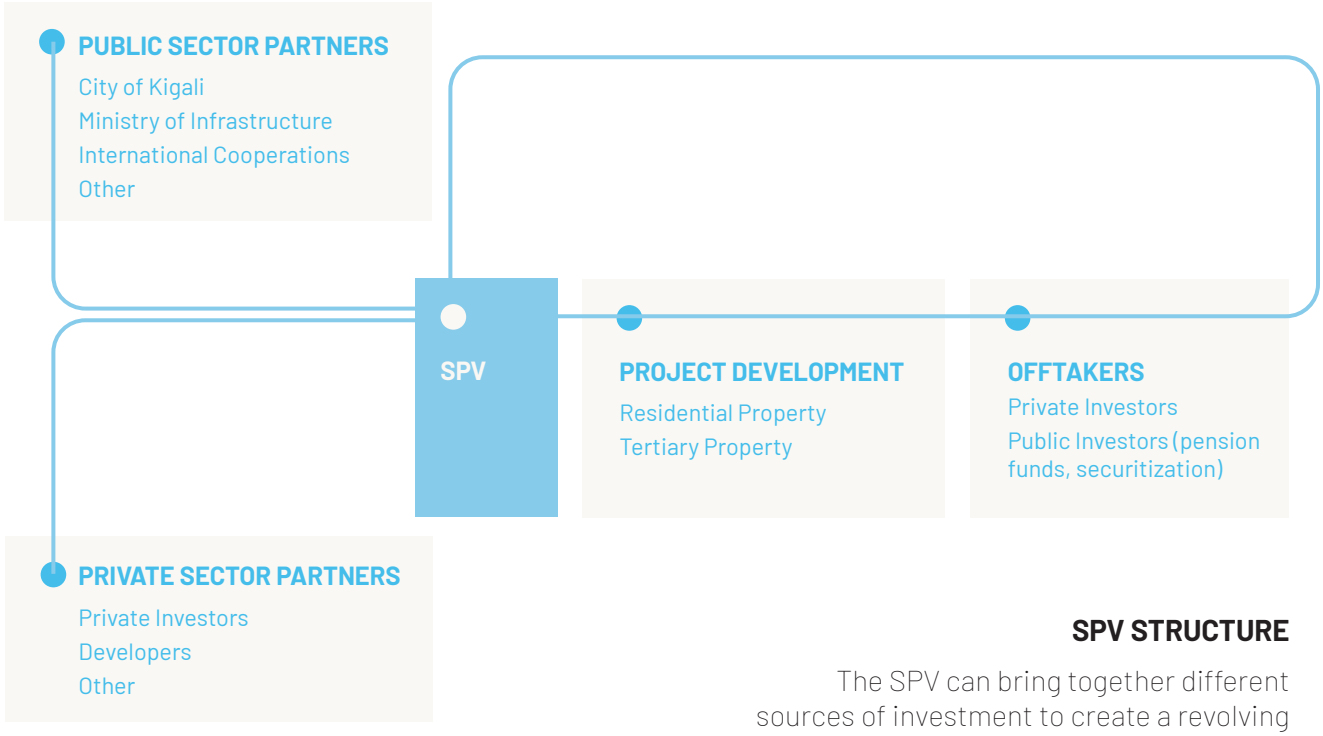
- *Desk review: review local examples of other PPP and partnership structure / review legislative framework governing in-country partnership arrangements*
- *Interviews: Review the Rehousing Concept with government officials to determine yearly budget and planning commitments for the upgrading of unplanned settlements and/or infrastructure provision*

Rehousing Finance

We can assume that financing for a rehousing SPV and/or a Mpazi-focused SPV can blend debt, equity, and grant funding from both public and private sector sources.

The **debt** financing opportunities for a SPV relate to the terms and conditions of repayment obligations taken on by the borrowing entity. Debt for a SPV can include both debts listed on the Rwandan Stock Exchange (RSE) or an international stock market and unlisted debt from local, regional, and global banks for both public and private sector borrowers. Debt components for a SPV can be issued in Rwandan Francs or other currencies such as the US Dollar or Euro. A SPV can incorporate environmental and social considerations and be considered for unlisted debt from development finance institutions (DFIs) or pursue certification and issuance of publicly listed green bonds or development bonds to attract better terms and conditions to improve project economic viability.

The **equity** financing opportunities relate to the control of decisions made by and benefits of ownership in a SPV. Equity for a SPV can be listed on the RSE of international stock market



SPV STRUCTURE

The SPV can bring together different sources of investment to create a revolving fund for financing urban development

or can be unlisted equity from both public and private sector investors based upon the cash and other contributions to the economic viability of the SPV.

A SPV can track and report on social and environmental benefits which can attract impact investors who seek non-economic returns in addition to economic returns. The **grant** funding opportunities relate to the non-repayment requirements of benefactors who do not have ownership in a SPV. These grant funders can include multilateral or bilateral development institutions, foundations, charities, or NGOs. In lieu of ownership, grant providers typically require design, monitoring, and evaluation of a series of developmental, social, and/or environmental impacts to the project or projects which may impact the economic viability of the SPV.

A summary of the debt opportunities, considerations, and range of return expectations are summarized on the following pages. Local financing opportunities for a SPV can include components of both listed and unlisted debt and equity financing as well as alternatives.

***TASK 2:** HOW TO IDENTIFY SOURCES OF FINANCING*

- *Research funding streams according to 3 main types: debt, equity and grant/ alternative funding*
- *Determine whether the project's economic viability is impacted by listed or unlisted debt and/or equity*
- *Identify social and environmental benefits of the Rehousing project to determine if impact investors would be attracted to the projects*

The **debt** financing opportunities for a SPV relate to the terms and conditions of repayment obligations taken on by the borrowing entity. Debt for a SPV can include both debts listed on the Rwandan Stock Exchange (RSE) or an international stock market and unlisted debt from local, regional, and global banks for both public and private sector borrowers. Debt components for a SPV can be issued in Rwandan Francs or other currencies such as the US Dollar or Euro. A SPV can incorporate environmental and social considerations and be considered for unlisted debt from development finance institutions (DFIs) or pursue certification and issuance of publicly listed green bonds or development bonds to attract better terms and conditions to improve project economic viability.

LOCAL FUNDING SOURCES

BANKS

The most straightforward and fastest form of local financing would be for the SPV to borrow from local banks. Local banks will require collateral in terms of land and/or buildings owned by the SPV in the event of a default, could likely provide greater than 70% of the collateral value in the form of debt. Local bank debt could be issued in RWF or other currencies and complete a transaction in a few weeks.

BONDS

As an alternative to local bank funding, a SPV can issue and list debt locally on the RSE for sale of bonds to the public. A bond issuance could be backed by a municipality or by the SPV itself and would require following a series of procedures, regulatory approvals, capacity building, marketing, and fees payable to the relevant agencies before receiving funds at market negotiated rates.

ALTERNATIVES

The structure of the Mpazi project may also consider "rent to own" components which enable occupancy and may offer longer term cash flow payments to cover debt obligations.

INTERNATIONAL FUNDING SOURCES

BANKS

As Rwanda is considered a Low-Income Country (LIC) by international developmental institutions, it has the ability to attract developmental funding from multilateral and bilateral institutions such as the World Bank, African Development Bank, and others.

These institutions can offer long-term low interest rate concessional debt for elements that provide positive benefits for the public good. In the context of rehousing, this could include infrastructure costs and other costs of rehousing.

The debt of these institutions is typically held at the sovereign level which will require consideration and prioritization in line with national budgets. The funding from developmental sources at the sovereign level to pay for infrastructure and other project costs could be negotiated to comprise the equity components of a SPV and increase the potential amount of economic return for the Government of Rwanda. Each development institution has limitations on the types and amounts of funding available for rehousing which may limit the ability of a rehousing project to reach scale.

LOCAL FUNDING SOURCES

COMPANIES

Businesses involved in construction, real estate, property development, and/or insurance could be interested in contributing to a SPV in cash or in kind for ownership in a SPV.

GOVERNMENT AGENCIES

Institutions like the Rwanda Social Security Board, Agaciro, City of Kigali, Ministry of Infrastructure, or others could also contribute in cash or in-kind equity for ownership in a SPV.

INDIVIDUALS

Private investors could contribute funds either directly or in concert with a structured savings plan and be offered ownership shares in a SPV.

ALTERNATIVES

A SPV can issue and list equity locally on the RSE for sale of shares to the public. After following extensive procedures for listing equity and an initial public offering (IPO), the SPV can receive the money commensurate with the shares it has offered and be responsible for reporting and governance requirements in line with local regulations. The structure of the Mpazi project anticipates a degree of cross subsidization which projects individuals purchasing market priced retail, offices, and homes that can contribute to cash requirements to fund development and construction. A portion of these individual sales can be offered "off plan" to receive cash on a progress basis in lieu of equity issuances.

The **equity financing opportunities** relate to the control of decisions made by and benefits of ownership in a SPV. Equity for a SPV can be listed on the RSE of international stock market or can be unlisted equity from both public and private sector investors based upon the cash and other contributions to the economic viability of the SPV. A SPV can track and report on social and environmental benefits which can attract impact investors who seek non-economic returns in addition to economic returns.

INTERNATIONAL FUNDING SOURCES

ALTERNATIVES

The most impactful and largest potential to scale funding of a SPV using international sources includes issuance of bonds on international markets. To date, no city or municipality in Sub-Saharan Africa has ever listed bonds to tap into this near unlimited potential source of capital. In addition to capacity and coordination issues, currency concerns have provided the main barrier to issuances. The LSE has developed a local currency bond market and housing projects recently received funding (e.g., student housing in Kenya in KSch).

International issuance of bonds enables more prospective investors to participate in an issuance which in turn lowers the cost of financing and enables for improved negotiated terms for issuers than they could get in their local markets. As rehousing can be considered developmental and potentially environmentally friendly, there is the potential to qualify for development impact and/or green status thus lowering the interest rates and improving the economic return to equity holders. Bonds issued to global capital markets can qualify for credit guarantees from multilateral or bilateral institutions. These credit guarantees can help crowd in investors and have the effect of lowering interest rates and improving the economic viability of a SPV.

DEBT OPPORTUNITIES

Type	Name	Consideration	Return Expectations
Listed	Municipal Bond	Ownership and responsibility for repayment from CoK with approval from MINECOFIN; Listing domestically (RSE) and/or internationally (LSE); currency issues listing in RWF and/or in USD/EUR; Size would need to be larger	Sovereign bond rate of ~12% in RWF plus risk premium so total ~15% - repayment up to 15 years
Listed	Green Bond	Issuer could be corporate, government, or SPV (Kenya student housing green bond listed in KSH on LSE); listing could be domestic or better rates through international listing; could gain support for	Can be lower than sovereign possibly 9-10% in RWF or lower in USD/EUR – repayment up to 10 years
Private	Development Impact Bond	Meeting impact metrics for return on investment (UBS, USAID); long diligence process; good alignment with social mission;	Lower than local bank debt but variable depending on achievement of impact metrics – 10-12% in USD – repayment up to 10 years
Private	Bank Debt	Can be for CoK, company, or less likely for SPV; fastest option for raising debt; amount is well aligned with capabilities of local banks (BK, BPR, etc)	13-15% in RWF depending on structure, collateral, and project details – repayment up to 5 years
Private	Multilateral or Bilateral Debt	Funding to government or quasi-government or SPV only (AfDB, World Bank, SDC, FCDO, Sida, etc) require alignment with their national strategy for development; long duration to gain support and disbursement; clear clean procurement, global standard EIA, and impact metrics required; Disbursement and repayment usually in USD/EUR	0.75% in USD for World Bank up to 5% in USD – long term beyond 5 years repayment
Private	Development Finance Institution	Funding to private sector or SPV only (SIFEM, DFC, Swedfund, FMO, etc); long duration to gain support and disbursement; clear clean procurement, global standard EIA, and impact metrics required; Disbursement and repayment usually in USD/EUR	5-8% in USD/EUR – long term beyond 5 years repayment

DEBT OPPORTUNITIES (CONT'D)

Type	Name	Consideration	Return Expectations
Private	Impact debt funds	Alignment with mission, sector, sub-sector, and project. Funding to private sector or SPV only (Shelter Afrique, Responsibility); long duration to gain support and disbursement; clear clean procurement, global standard EIA, and impact metrics required; Disbursement and repayment usually in USD/EUR	8-12% in USD/EUR – long term beyond 5 years repayment
Private	Credit enhancement	Guarantees to lower the cost of, increase collateralization of, or improve lending terms in local currency for private or public debt issuances (DFC, Sida, Gurantco, AGF)	1-3% of total debt amount added to crowd in investors or debt providers - can be capitalized – duration aligned with repayment
Private	Securitization of cash flows	Rent-to-own or other long term cash flows could be securitized to help free up cash for future development (Lendable); may require eviction for non-payment	17-20% in USD or less if securitized internationally

EQUITY AND QUASI-EQUITY CONSIDERATIONS

Type	Name	Consideration	Return Expectations
Listed	Real Estate Investment Trust	Exchange listing standards and timeline; process of marketing to institutions and individual investors; ongoing public disclosures; regulatory approval for first ever REIT in Rwanda (RSE)	Projections of dividends and appreciation in local currency greater than sovereign bonds - >12% IRR in local currency likely 15-20+%
Listed	Real Estate Development Company	New or existing company; Exchange listing standards and timeline (RSE); process of marketing to local institutions (Banks, RSSB, Insurance companies) and individual investors; ongoing public disclosures;	Share price increases at or better than average in domestic stock market presently -4% to 35% YTD
Private	Donation	Multilateral or bilateral organization (World Bank, SDC, or other charitable agency) or Corporate Social Responsibility (MTN, BK, etc.) needs alignment with program mission; Limited sustainability for project expansion	Only social returns and impact tracking required without financial returns in most cases
Private	Corporate – construction, real estate company,	Company invests to secure contract for construction (similar to road construction contract with AfDB); balance between equity contribution, quality standards, and profitability	Equal to average profit per construction project plus cost of capital and margin for risk - ~20-25% IRR expected
Private	Financial – SWF, pension fund, insurance companies	SWF (Agaciro) and pension fund (RSSB), insurance companies (Sanlam) have capital and interest in domestic development with modest return expectations; including local equity investors in the capital structure will indicate strong local support and help crowd in other investors; political support will be necessary to execute	Seeking long-term reliable yield or dividend payments with capital appreciation, equal or greater than average return expectations or local hurdle rate – 5% (Need to validate) Likely higher for insurance companies >12% IRR in local currency likely 20-25+%
Private	Financial – for profit investors in private offerings	Requires comfort in country, sector, sub-sector, and currency; significant marketing and sales to diaspora (Movemeback), individual investors and/or institutions abroad (Cyton)t	Likely above 25% IRR expectations in RWF or 15-20% in USD/EUR

EQUITY AND QUASI-EQUITY CONSIDERATIONS (CONT'D)

Type	Name	Consideration	Return Expectations
Private	Financial – impact investors in private offerings	Requires impact metrics aligned with fund mandates; Few impact investors presently focused on housing projects (REALL, Shelter Afrique, private fund managers) more interested in impact companies (Acumen, Responsability, etc); Requires comfort in country, sector, sub-sector, and currency; significant marketing and sales to impact funds abroad; long duration from pitch to close	Likely above 25% IRR expectations in RWF or 15-20% in USD/EUR
Private	Savings plan	Establishment of affordable housing savings plan (Boma Yangu, etc) from employers, employees, or other programs; could be in collaboration with RSSB savings program	To be determined
Private	Individuals – buy-to-rent cross subsidization	Commercial units pricing for higher end consumers or buy-to-rent that have higher margin that provide equity funding for social housing; marketing to diaspora or individual investors (Vision City)	Buy-to-rent return expectations ~10-15% yield in USD /EUR or equivalent
Private	Individuals – rent to own	Buyers pay for their units over time; Further modeling required to estimate details	Likely above 15% in RWF or 10-15% in USD/EUR
Private	Taxation	Government taxation (Kenya/Nigeria National Housing Funds) from employers or existing home owners to contribute to infrastructure to pay for social housing	To be determined

The most impactful and largest potential to scale funding of a SPV using international sources includes issuance of bonds on international markets. On a global basis municipal bonds comprise $4.0 trillion USD and corporate bonds comprise $14.9 trillion USD . Despite municipal bonds being issued by cities since the 1400s, due to capacity and coordination issues, no city or municipality in Sub-Saharan Africa has ever listed bonds to tap into this near unlimited potential source of capital. In addition to capacity and coordination issues, currency concerns have provided the main barrier to issuances of bonds on international markets. The London Stock Exchange has developed a local currency bond market and housing projects have recently received funding including a student housing project in Kenya in Kenyan Shillings. International issuance of bonds enables more prospective investors to participate in an issuance which in turn lowers the cost of financing and enables for improved negotiated terms for issuers than they could get in their local markets. As rehousing can be considered developmental and potentially environmentally friendly, there is the potential to qualify for development impact and/or green status thus lowering the interest rates and improving the economic return to equity holders. Bonds issued to global capital markets can qualify for credit guarantees from multilateral or bilateral institutions. These credit guarantees can help crowd in investors and have the effect of lowering interest rates and improving the economic viability of a SPV.

Acquiring the market sector homes in the Mpazi project can also use international sources of financing. To improve the accessibility of affordable homes, the World Bank has established a $150 million USD mortgage refinancing fund in Rwanda with a waiting list of over 1000 qualifying households seeking homes. In addition to this, additional mortgages can be originated, structured into an asset backed security (ABS), and issued to investors on global capital markets to free up additional funds for continued development. Based on appropriate assessments and certifications, the Mpazi project can potentially access carbon credits from international carbon credit markets to offset the costs of development and construction.

Assessment of Financial and Investment Parameters

Based on the return expectations detailed in Annex 2 and unifying the considerations for Interest Rates and Maturities into USD we can project the following given several caveats listed previously.

We assume that that the ROI and IRR expectations on these rates would be equal if the investment duration is 1 year or that the figures represent annualized IRR expectations if the project exceeds 1 year. In reviewing interest rates and return considerations we assume a public annual debt rate of 6.625% based upon the most recently issued Gori bonds in USD repayable in May 2023. We assume a private annual debt rate of 10% in USD and private equity IRR expectations of 25% based upon market estimates from discussions from local sources. Based upon the expectations of equity returns for real estate in private markets and medium-term equity returns from the Rwanda Stock Exchange we estimate public entities would require an equity IRR of 18% in USD for commercial real estate projects. Given these assumptions and given the scenarios and given an equal share of debt and equity split we see that the Weighted Total for Option A is 13.9%; 14.9% in Option B; and 15.9% in Option C. These figures are subject to change upon further refinement, consultation, and negotiation with prospective investors.

> ***NOTE:*** *INVESTOR SENTIMENT*
>
> *If the Mpazi project is structured to provide a reliable return in line with investors' expectations, we can expect investor sentiment to express a reasonably strong appetite for investment from a number of different sources. We can anticipate that the largest appetite for quantity of capital from private or non-Government*

BLENDED FINANCE INTEREST RATES AND RETURN CONSIDERATIONS

	Option A	Option B	Option C
Public Ownership	70%	50%	30%
Private Ownership	30%	50%	70%
Public Debt Rate	6.63%	6.63%	6.63%
Public Equity Rate	18%	18%	18%
Private Debt Rate	10%	10%	10%
Private Equity Rate	25%	25%	25%
Weighted Average Public Rate	12.3%	12.3%	12.3%
Weighted Average Private Rate	17.5%	17.5%	17.5%
Total Weighted Rate	**13.9%**	**14.9%**	**15.9%**

of Rwanda funding in the form of debt would be in the form of internationally issued bonds followed by multilateral and bilateral development funding followed by local banks. In terms of equity, we can anticipate that the largest appetite for quantity of capital would be from local agencies and insurance companies followed by local companies involved with construction or real estate development followed by individuals.

Recommendations for the Mpazi Project

Recommendations for the Mpazi project depend on the priorities of the stakeholders. If the stakeholders seek to deliver the project in the fastest timeframe, then the best option is for the SPV to borrow the required funds from local banks secured by and cross subsidized by the land in the market sector components of the project. If stakeholders seek the most affordable means of financing they should solicit support from multilateral, bilateral, and charitable means to fund the Mpazi project. If stakeholders seek to use the Mpazi project to pilot for a significant scale up throughout the city, the SPV should pursue collaboration with existing local savings programs, local investors on the equity side, tax support, and issuance of green and developmental bonds in RWF on international exchanges. Setting priorities of stakeholders which can help determine the appropriate incorporation and corresponding financial structure can be informed through further consultation. We recommend stakeholders receive inputs and insights from prospective private sector investors including multilateral, bilateral, government agencies, construction and real estate companies, and impact investors to refine and update assumptions and identify appetite and investment structure types for the Mpazi and other similar rehousing projects.

04

MODELLING THE TRANSFORMATION PROCESS

- Methodology
- Assumptions
- Results

The objectives of the modelling exercise are to:

1. Test the viability of a full cross subsidy of the Rehousing Sector through the commercial development of the Investment Sector, yielding an IRR of at least 25%.
2. Identify the scenario through which the greatest number of the current inhabitants of Mpazi – both the landowners and the tenants – could be rehoused in the new project.
3. Establish an order of magnitude for the investment that is required to develop the project, and what could be the public/private equity structure.

The model (ref. Excel flow chart) draws from the following inputs:

1. Implementation costs collected during the construction of Rehousing Blocks A and B (54 dwelling units);
2. Land-use concept of the Mpazi project resulting from a collaborative effort with the community of current inhabitants.

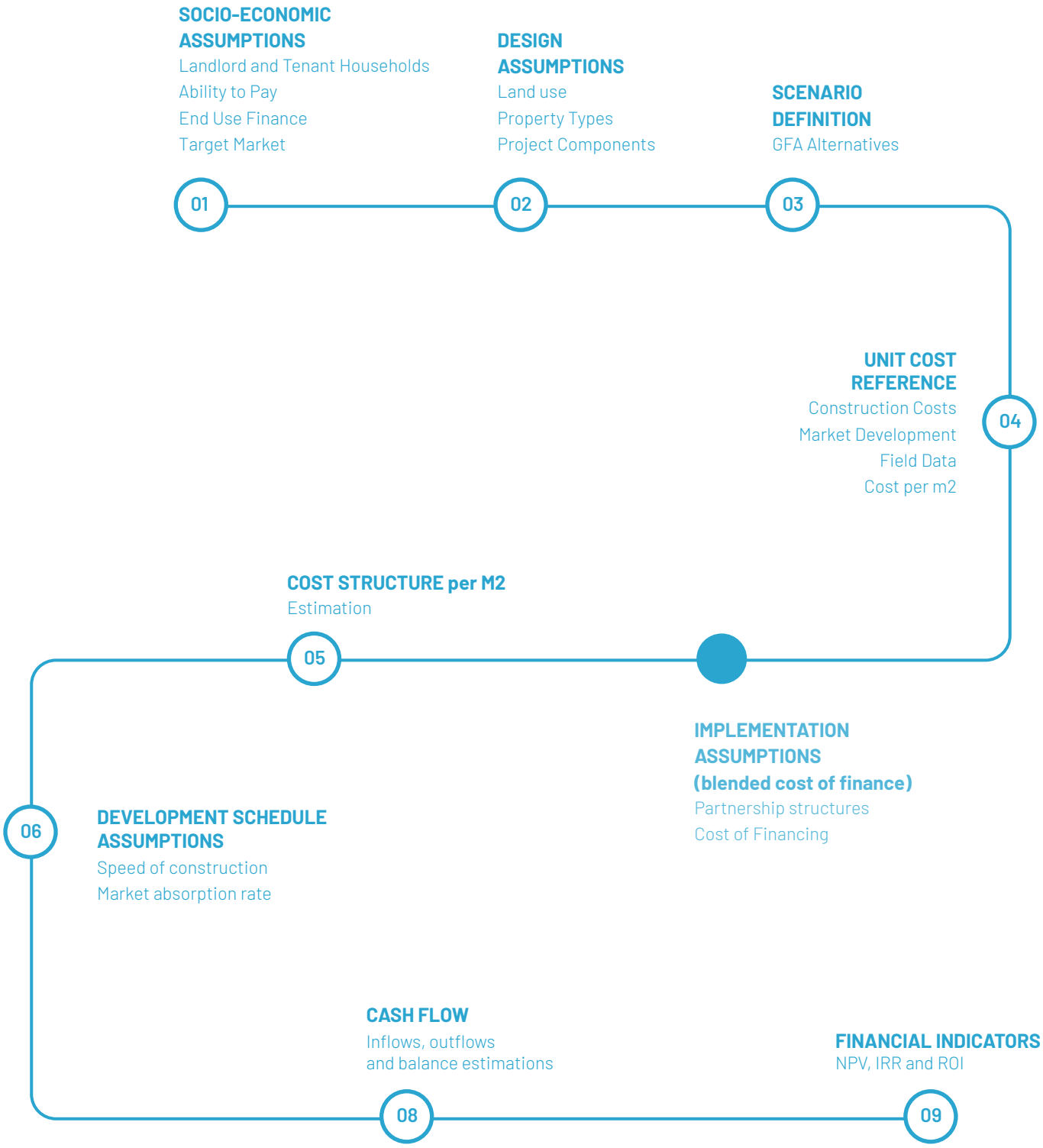
A description of the methodology, assumptions and key results are summarized on the following pages.

***TASK 1:** HOW TO SET UP A REHOUSING FINANCIAL MODEL*

- *Data Collection: Combine building design and site planning data with research gathered during STEP 01 and STEP 02 regarding the market profile of owners and tenants and the costs of finance*
- *Assumptions: Confirm partnership structures, implementation arrangements and timelines*

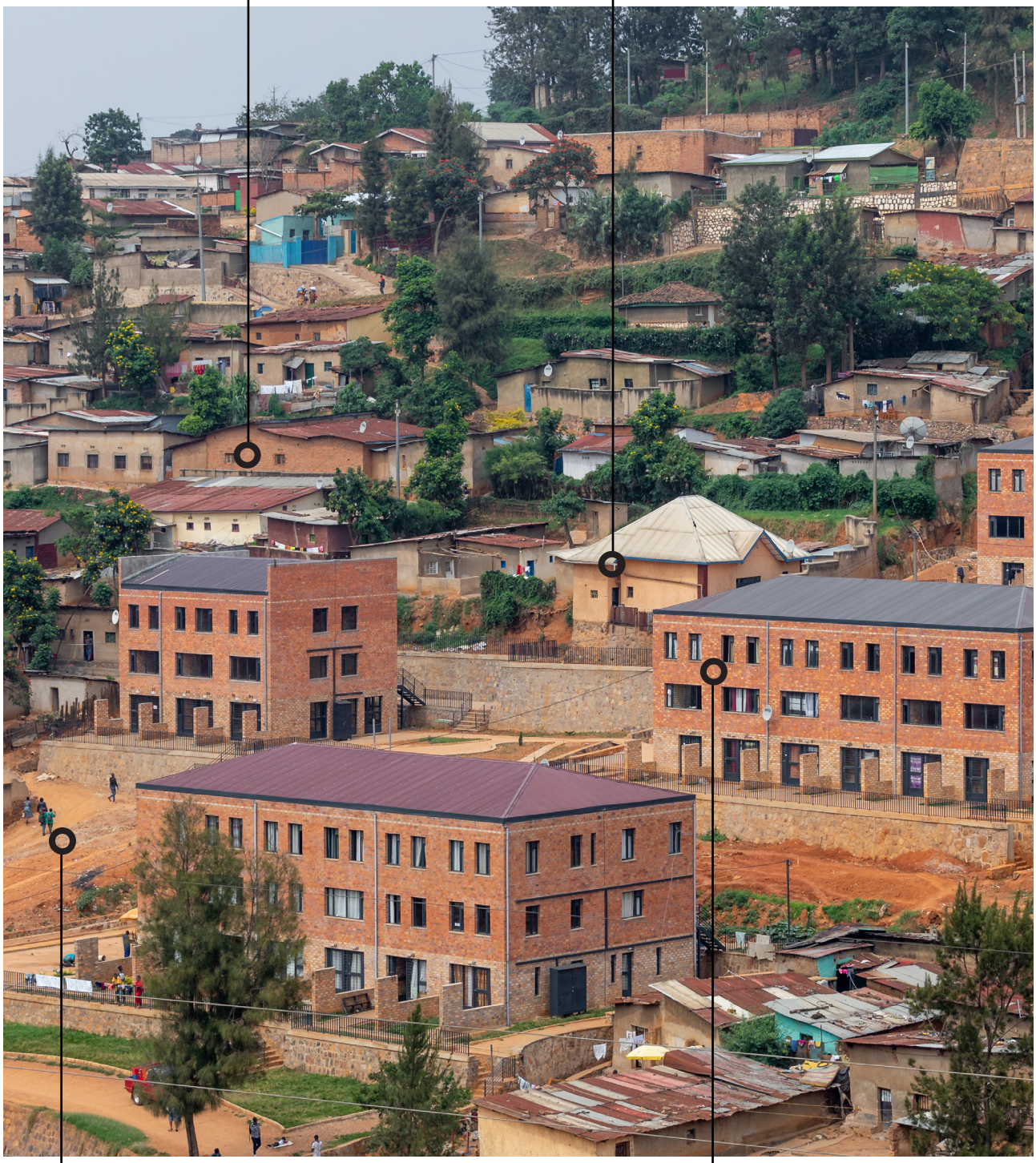
FINANCIAL MODEL EXCEL FLOW CHART

Methodology for calculating the financial feasibility of Rehousing Scheme Scenarios



PROFILE DEMOGRAPHICS
Interviews with existing landlowners and tenants to property values and rental tenure

UNIT COST REFERENCE
Collection of data on construction costs for formal housing in the area



INFRASTRUCTURE COSTS
Information available from the World Bank on Kigali infrastructure upgrades and from Phase 1 of rehousing shall inform amount of expected public sector contributions

UNIT COST REFERENCE
Real life data from Phase 1 of the Rehousing Project can be used to as a benchmark to inform the cost model

METHODOLOGY

IDENTIFY THE CHARACTERISTICS OF THE AFFECTED POPULATION

The first and most important step is to identify the characteristics of the population that will be affected and/or benefited by the project, including:

1. The number of existing landowner households, the household size (how many members living under the same roof), their income and the proportion of expenditure dedicated to pay for housing (see details in assumptions).
2. The number of existing tenant households, the household size and their income, and the proportion of expenditure dedicated to pay for housing (see details in assumptions).
3. The target proportion of the current population to be rehoused in the new project (see details in assumptions)

IDENTIFY MAIN DESIGN PARAMETERS

Drawing from a land use design for the project, the second step consists on identifying the main design parameters, including:

1. Project components or sectors and types of property: Rehousing sector, investment sector, residential and tertiary property.
2. Land use (surfaces in m2 for residential and tertiary property, and other uses)
3. Heights (G+2 up to G+5)

DEFINE THE IMPLEMENTATION STRUCTURE

A PPP structure is defined, and three options are set, depending on the contributions and on the equity proportion of each party. This third step is important to later define a set of blended interest rates and to assess the behaviour of each scenario according to each implementation option.

DEVELOP A COST UNIT REFERENCE

Cost data is assembled to be used in the project´s cost calculation.

PERFORM CASH FLOW ANALYSIS

Inflows and outflows of cash are calculated for the selected scenario, based on the scenario`s characteristics and unit cost.

CALCULATE FINANCIAL INDICATORS

Net present value (NPV), Internal Rate of Return (IRR) and Return on Investment (ROI) are calculated based on the results of the cash flow.

KEY ASSUMPTIONS

FIX SOCIO-ECONOMIC ASSUMPTIONS

1. Total Current Households: 571
2. Owner Occupant Households: 143 – target for rehousing = 100%
3. Current Tenant Household: 428 – target for rehousing = 50%
4. Average Monthly Income of Owner Occupant Households: RWF 137,000 ($123)
5. Average Monthly Income of Current Tenant Households: RWF 84,000 ($76)
6. Average Household Size: 4.45

DESIGN ASSUMPTIONS

1. The design includes a plot of 40,000 m2 (4Ha) and is divided into two sectors: the Rehousing Sector (8,082 m2), and the Investment Area (14,644 m2). The remaining 17,274 m2 are dedicated to roads, pedestrian walkways and other public infrastructure, and green areas.
2. Development is under way, with 3 blocks built and one in process. This model assumes that no development has taken place yet and includes the totality of the surfaces. Heights in the project will vary from G+2 to G+5, generating three possible scenarios:

		Property Mix Scenarios		
		1	2	3
Rehousing Area	%	GFA/m2	GFA/m2	GFA/m2
Residential	80%	12,931	12,931	12,931
Tertiary	20%	3,233	3,233	3,233
	100%	16,164	16,164	16,164

Investment Area	%	GFA/m2	GFA/m2	GFA/m2
Residential	80%	23,430	35,146	58,576
Tertiary	20%	5,858	8,786	14,644
	100%	29,288	43,932	73,220

Scenario 3 is selected due to the highest GFA and, therefore, the highest output of units.

COST ASSUMPTIONS

Cost used for calculating the model come from development of Blocks A, B and C. These are the same costs used in the model previously prepared by Skat. In addition, cost research was conducted with other sources, such as local developers. These data are used to produce a cost structure per m2, which is then used as an input for calculation of the cash flow.

IMPLEMENTATION AND BLENDED FINANCE ASSUMPTIONS

It is assumed that the Mpazi Rehousing Project (MRP) will be implemented through a Public/Private Partnership (PPP). A Special Purpose Vehicle Company (SPV) will embody the partnership. Each partner will hold shares according to its contribution. Following, three options assumed for this model:

	Option A	Option B	Option C
Estimated Public Sector Partner Contribution	70%	50%	30%
Estimated Private Sector Partner Contribution	30%	50%	70%
Total Contributions	**100%**	**100%**	**100%**

Private contribution includes contributions from private investors and from the other equity investors such as bilateral or multilateral donor organisations. At 13.9% annually, Option A yields the lowest blended interest rate (weighted average of public and private interest rates), followed by Option B at 14.9% annually and Option C at 15.9%. The rate of Option C (15.9%) is used for calculation of financial costs in this model, because it is the one that allows greater participation of the private sector.

FINANCING AND SUBSIDY ASSUMPTIONS

For the calculation of this model, it is assumed that financing of the project will be done through the contributions of the public and private partners in the project. These contributions will be recovered through the selling of 100% of the project´s Residential and Tertiary property to off-takers (i.e., other public and private investors). This will create a revolving cycle of financing.

For the calculation of this model, it is assumed that public subsidy for the following elements will be present:

1. Trunk Infrastructure of the entire project (contribution of international cooperation, i.e., World Bank)
2. Technical Assistance and Design Costs for the Rehousing Sector (contribution of international cooperation, i.e., SDC)
3. Cost of Municipal Permit for the entire project (contribution of public sector, i.e., City of Kigali)

DEVELOPMENT SCHEDULE ASSUMPTIONS

A development period of 5 years was used in the model, which is the same period used in the model previously developed by Skat. Normally, a development schedule should be based on the market absorption-rate for each type of property. However, that information was not available at the time of preparation of this report.

VIEW MPAZI NEIGHBORHOOD AFTER REHOUSING PHASE 1 (actual)

Between 2020 and 2023, the PROECCO project, in partnership with the City of Kigali and UN-Habitat successfully rehousesd 95 households in 4 cost-effective, environment friendly buildings. These buildings constitute Phase 1 of the Rehousing Exercise and serve as the cost, quality and effectiveness benchmarks for successive phases. This incremental piloting approach builds confidence with investors.

MPAZI NEIGHBORHOOD WITH REHOUSING AND INVESTMENT SECTOR COMPLETED (projected)

With proper planning and finance, the Mpazi Rehousing pilot project shall transform into a dense, code-compliant well-serviced neighborhood. The project's success shall be measured by its potential replicability, serving as an example of how blended finance mechanisms can be used to transform neighborhoods across Rwandan's burgeoning cities.

FINAL RESULTS OF PARTICIPATORY REHOUSING FINANCIAL MODELLING EXERCISE

Optimal Scenario	**Option C**
Design of Rehousing Area	G+2
Design of Investment Sector	G+5
GFA m2 - Total	**89,384**
GFA m2 of Rehousing Area	16,164
GFA m2 of Investment Area	73,220
Number of Dwelling Units (DU)	**2,043**
Rehousing Sector (DU)	369
Investment Sector (DU)	1,674
Average Price per DU - Investment Sector	$32,402
Density DU/hectare	511
Total Cash Inflows	**$85,950,246**
Total Cash Outflows	**$75,437,601**
Balancce	**$10,512,645**
Net Present Value (NPV)	**$8,920,642**
Internal Rate of Return (IRR)	**25%**
Return on Investment (ROI)	**14%**

05

WAY FORWARD

- Conclusions
- Recommendations

Conclusions

By modelling the transformation process, it is possible to arrive at a scenario that generates an IRR of **25%** for the Investment Sector, making rehousing and neighborhood transformation a solid business case for private investment. In addition, the following conclusions can be drawn from the modelling exercise:

1. Based on results obtained by the financial model, a 100% cross-subsidy of the Rehousing Sector is feasible through a markup to the cost of the Investment Sector. This markup will necessarily generate dwelling units that are significantly more expensive in the Investment Sector, which may lead to a process of gentrification of the area.
2. Further analysis is required regarding housing typologies. However, it is possible to affirm that the objectives of 100% rehousing of the owner households and 50% of the tenant households, could be achieved by largely using a rental modality of co-housing apartments and private apartments.
3. It is feasible to make a full swap of the value of landowners for new residential property, given that the equity held by current owners is sufficient.
4. According to the assumptions of the financial model, a sustainable financing mechanism for rehousing projects could be achieved through a PPP, where public and private investors would collaborate to produce residential and tertiary property which will then be sold to off-takers. This mechanism should be further studied and detailed.
5. The results obtained in the financial model indicate that the greatest GFA and cost efficiency is achieved when using G+2 in the Rehousing Sector and G+5 in the Investment Sector. This scenario could generate up to 2,043 DU, representing an additional 1,472 DU for Mpazi, almost a fourfold increase in the housing capacity of the area.

Recommendations

Finally, a series of recommendations can be drafted from the test case. They highlight the necessity for integrated urban development solutions, and attest to the urgent need for housing policies that go beyond standards and costs, to cater for the financial and social support structures required for Rwandan households and

communities to thrive.

1. As part of the development of the Mpazi project a cost benefit analysis must be performed to identify the social, economic, and environmental benefits of the pilot rehousing project and the implications in case of scaling up and replication.

2. Results of the financial model indicate that about 40% of total existing households will be displaced due to insufficient income. If this model is to be scaled up, there is the potential for large displacement of low-income households. Therefore, it is recommended that **a social housing program should accompany the process** in case of a city-wide replication of the rehousing model. As in other unplanned settlements in Kigali, the number of tenant households are many. In 2020, Akabahizi cell reported a tenant-owner ratio of 3 to 1, higher than both the city and national averages. Consequently, to avoid massive displacement, a successful neighborhood rehousing intervention must consider rental accommodation for low-income tenants. For this reason, recommendations for the rehousing project include the incorporation of mechanisms like rent control, low-income rent subsidies and revised zoning parameters to ensure that the rental housing stock is not depleted through the upgrading and rehousing process. The rental housing stock may be a new type of housing block with shared ablutions and Single Room Occupancy (SRO) units for example.

3. **Parallel action must be taken to improve the income situation of households**, as an enabler to the effort of upgrading neighborhoods and infrastructure (dwellings, streets, etc). This will ensure that rehousing projects are sustainable in the long term by decreasing the pressure and burden on the public sector to provide housing subsidies. Upgraded housing must reflect an upgraded socio-economic condition. Household income could be further strengthened by decreasing the cost of transport. Therefore, mixed-use (residential, commercial, and tertiary) programming on the site is recommended.

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