# Selected scenarios

## CResults of the analysis of the implementation of the different gardens without offices and boundary fences - without public subsidy

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Active Scenario | Zomba Botanic Garden | Lilongwe Botanic Garden | Mzuzu Botanic Garden | Whole project |
| Private partner |  |  |  |  |
| Uses of funds (000'MK) | 3 947 072 | 4 664 241 | 3 627 532 | 12 238 845 |
| Construction cost | 3 333 988 | 3 939 762 | 3 064 081 | 10 337 831 |
| % | 84.5% | 84.5% | 84.5% | 84.5% |
| Capitalised interests | 613 084 | 724 479 | 563 451 | 1 901 014 |
| % | 15.5% | 15.5% | 15.5% | 15.5% |
| Sources of funds (000'MK) | 3 947 072 | 4 664 241 | 3 627 532 | 12 238 845 |
| Equity | 1 000 196 | 1 181 928 | 919 224 | 3 101 349 |
| % | 25.3% | 25.3% | 25.3% | 25.3% |
| Debt | 2 946 875 | 3 482 312 | 2 708 308 | 9 137 496 |
| % | 74.7% | 74.7% | 74.7% | 74.7% |
| Investment subsidy | 0 | 0 | 0 | 0 |
| % | 0.0% | 0.0% | 0.0% | 0.0% |
| Target equity IRR | 30.7% | 30.7% | 30.7% | 30.7% |
| Equity IRR | 11.32% | 21.99% | 1.05% | 12.68% |
| Project IRR | 8.95% | 16.47% | -1.09% | 9.81% |
| Minimum ADSCR | 0.58 | 0.95 | 0.08 | 0.53 |
| Public sector |  |  |  |  |
| Uses of funds (000'MK) | 0 | 0 | 0 | 0 |
| Sources of funds (000'MK) | 0 | 0 | 0 | 0 |
| Public debt | 0 | 0 | 0 | 0 |
| Annual operating revenue to public | 0 | 0 | 0 | 0 |

The table presents a financial analysis of three botanic gardens (Zomba, Lilongwe, and Mzuzu) and the overall project without offices and boundary fences, excluding public subsidies. Construction costs account for approximately 84.5% of the total funds used in each garden, with private partners providing 100% of the funding. The project targets an equity IRR of 30.7%, but the actual equity IRR varies significantly across the gardens, ranging from 1.05% to 21.99%. The project IRR also shows variation, with Lilongwe Botanic Garden having the highest at 16.47% and Mzuzu Botanic Garden having a negative IRR of -1.09%.

## AResults of the analysis of the implementation of the different gardens (separately/ whole project) - without public subsidy

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Zomba Botanic Garden | Lilongwe Botanic Garden | Mzuzu Botanic Garden | Whole project |
| Private partner |  |  |  |  |
| Uses of funds (000'MK) | 9 243 272 | 10 002 921 | 14 997 101 | 34 243 293 |
| Construction cost | 7 807 549 | 8 449 204 | 12 667 657 | 28 924 410 |
| % | 84.5% | 84.5% | 84.5% | 84.5% |
| Capitalised interests | 1 435 723 | 1 553 716 | 2 329 444 | 5 318 883 |
| % | 15.5% | 15.5% | 15.5% | 15.5% |
| Sources of funds (000'MK) | 9 243 272 | 10 002 921 | 14 997 101 | 34 243 293 |
| Equity | 2 342 265 | 2 534 761 | 3 800 297 | 8 677 323 |
| % | 25.3% | 25.3% | 25.3% | 25.3% |
| Debt | 6 901 007 | 7 468 159 | 11 196 804 | 25 565 970 |
| % | 74.7% | 74.7% | 74.7% | 74.7% |
| Investment subsidy | 0 | 0 | 0 | 0 |
| % | 0.0% | 0.0% | 0.0% | 0.0% |
| Target equity IRR | 30.7% | 30.7% | 30.7% | 30.7% |
| Equity IRR | 5.17% | 11.18% | -5.37% | 4.25% |
| Project IRR | 3.68% | 8.68% | -5.86% | 2.60% |
| Minimum ADSCR | 0.35 | 0.53 | 0.02 | 0.26 |
| Public sector |  |  |  |  |
| Uses of funds (000'MK) | 0 | 0 | 0 | 0 |
| Sources of funds (000'MK) | 0 | 0 | 0 | 0 |
| Public debt | 0 | 0 | 0 | 0 |
| Annual operating revenue to public | 0 | 0 | 0 | 0 |

The table presents the results of a financial analysis of the implementation of three botanic gardens in Malawi, namely Zomba, Lilongwe, and Mzuzu, as well as the overall project. The analysis focuses on the use and sources of funds, with a particular emphasis on private sector involvement without public subsidy. The data reveals that construction costs accounted for 84.5% of the total uses of funds for each garden and the overall project, while equity and debt financing contributed 25.3% and 74.7% of the total sources of funds, respectively. The project IRR ranges from -5.86% to 8.68%, with the Zomba Botanic Garden having the highest IRR of 3.68% and the Mzuzu Botanic Garden having the lowest IRR of -5.86%.

## BResults of the analysis of the implementation of the different gardens without boundary fences - without public subsidy

|  |  |  |  |
| --- | --- | --- | --- |
| Active Scenario | Zomba Botanic Garden | Lilongwe Botanic Garden | Mzuzu Botanic Garden |
| Private partner |  |  |  |
| Uses of funds (000'MK) | 7 372 386 | 6 014 716 | 5 026 330 |
| Construction cost | 6 227 260 | 5 080 473 | 4 245 609 |
| % | 84.5% | 84.5% | 84.5% |
| Capitalised interests | 1 145 125 | 934 243 | 780 721 |
| % | 15.5% | 15.5% | 15.5% |
| Sources of funds (000'MK) | 7 372 386 | 6 014 716 | 5 026 330 |
| Equity | 1 868 178 | 1 524 142 | 1 273 683 |
| % | 25.3% | 25.3% | 25.3% |
| Debt | 5 504 207 | 4 490 574 | 3 752 647 |
| % | 74.7% | 74.7% | 74.7% |
| Investment subsidy | 0 | 0 | 0 |
| % | 0.0% | 0.0% | 0.0% |
| Target equity IRR | 30.7% | 30.7% | 30.7% |
| Equity IRR | 7.29% | 19.28% | 1.75% |
| Project IRR | 5.59% | 14.73% | -0.13% |
| Minimum ADSCR | 0.44 | 0.88 | 0.05 |
| Public sector |  |  |  |
| Uses of funds (000'MK) | 0 | 0 | 0 |
| Sources of funds (000'MK) | 0 | 0 | 0 |
| Public debt | 0 | 0 | 0 |
| Annual operating revenue to public | 0 | 0 | 0 |

This table presents the financial analysis of three botanical gardens implemented without boundary fences and without public subsidy. It highlights the sources and uses of funds, with construction costs accounting for 84.5% of total funds for all gardens. Equity financing constitutes 25.3% of funding, while debt financing covers the remaining 74.7%. The Equity IRR varies significantly, ranging from 1.75% to 19.28%, while the Project IRR shows a wider range, from -0.13% to 14.73%.

## DResults of the analysis of the implementation of the whole project (all facilities/ tourist facilities only) - with public subsidy (40%)

|  |  |  |
| --- | --- | --- |
| Active Scenario | Whole Project – All project facilities | Whole Project – Tourist components only |
| Private partner |  |  |
| Uses of funds (000'MK) | 32 115 740 | 11 478 439 |
| Construction cost | 28 924 410 | 10 337 831 |
| % | 90.1% | 90.1% |
| Capitalised interests | 3 191 330 | 1 140 608 |
| % | 9.9% | 9.9% |
| Sources of funds (000'MK) | 32 115 740 | 11 478 439 |
| Equity | 5 206 394 | 1 860 810 |
| % | 16.2% | 16.2% |
| Debt | 15 339 582 | 5 482 497 |
| % | 47.8% | 47.8% |
| Investment subsidy | 11 569 764 | 4 135 132 |
| % | 36.0% | 36.0% |
| Target equity IRR | 30.7% | 30.7% |
| Equity IRR | 8.91% | 21.57% |
| Project IRR | 2.60% | 9.81% |
| Minimum ADSCR | 0.43 | 0.88 |
| Public sector |  |  |
| Uses of funds (000'MK) | 14 565 517 | 5 205 840 |
| Construction cost | 0 | 0 |
| % | 0.0% | 0.0% |
| Investment subsidy to private | 11 569 764 | 4 135 132 |
| % | 79.4% | 79.4% |
| Capitalised interests | 2 995 753 | 1 070 708 |
| % | 20.6% | 20.6% |
| Sources of funds (000'MK) | 14 565 517 | 5 205 840 |
| Public debt | 14 565 517 | 5 205 840 |
| % | 100.0% | 100.0% |
| Public debt annuity (first year of operation) | -3 631 715 | -1 298 006 |
| NPV of public debt service | -8 236 334 | -2 943 736 |
| Annual operating revenue to public | 0 | 0 |
| NPV of operating revenue to NHBG | 0 | 0 |

The table presents a detailed analysis of the implementation of a project with public subsidy, considering both the entire project and its tourist components. The private partner's funding primarily goes towards construction costs (90.1%), with debt accounting for 47.8% and equity for 16.2%. The public sector's funding is entirely through debt, and the project's IRR is significantly higher for the tourist components (9.81%) compared to the entire project (2.60%).

## EResults of the analysis of the implementation of the whole project with tourist facilities only - without public subsidy – Duty-free CAPEX

|  |  |
| --- | --- |
| Active Scenario | Whole Project – Tourist components only - Duty-free CAPEX |
| Private partner |  |
| Uses of funds (000'MK) | 10 412 370 |
| Construction cost | 8 795 055 |
| % | 84.5% |
| Capitalised interests | 1 617 315 |
| % | 15.5% |
| Sources of funds (000'MK) | 10 412 370 |
| Equity | 2 638 517 |
| % | 25.3% |
| Debt | 7 773 853 |
| % | 74.7% |
| Investment subsidy | 0 |
| % | 0.0% |
| Target equity IRR | 30.7% |
| Equity IRR | 15.00% |
| Project IRR | 11.61% |
| Minimum ADSCR | 0.62 |
| Public sector |  |
| Uses of funds (000'MK) | 0 |
| Sources of funds (000'MK) | 0 |
| Public debt | 0 |
| Annual operating revenue to public | 0 |
| NPV of operating revenue to NHBG | 0 |

The table presents the financial analysis of a project involving the implementation of tourist facilities without public subsidy or duty-free capital expenditure. The project is primarily funded by private partners, with equity contributing 25.3% and debt 74.7%. The construction cost accounts for 84.5% of the total uses of funds, while capitalized interests comprise the remaining 15.5%. The project's equity IRR is 15.00%, while the project IRR is 11.61%.

## F6.3.2.6 Scenario 6 – Whole Project with tourist facilities only, with public subsidy not exceeding 40% and with optimistic occupancy rates for hospitality services

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Colonne1 | Occupancy rates - Accommodation | Colonne2 | Colonne3 | Colonne4 | Occupancy rates - Conferences | Colonne5 | Colonne6 | Colonne7 |
| Years | Year 1 | Year 2 | Year 3 | Year 4 onwards | Year 1 | Year 2 | Year 3 | Year 4 onwards |
| Optimistic scenario: |  |  |  |  |  |  |  |  |
| Zomba Botanic Garden | 0.75 | 0.83 | 0.9 | 0.9 | 0.58 | 0.65 | 0.73 | 0.8 |
| Lilongwe Botanic Garden | 0.55 | 0.6 | 0.65 | 0.65 | 0.72 | 0.78 | 0.9 | 0.9 |
| Mzuzu Botanic Garden | 0.67 | 0.76 | 0.84 | 0.92 | 0.64 | 0.72 | 0.8 | 0.8 |
| Whole project average | 0.66 | 0.73 | 0.8 | 0.82 | 0.65 | 0.72 | 0.81 | 0.83 |
| Current reserved scenario: |  |  |  |  |  |  |  |  |
| Zomba Botanic Garden | 0.5 | 0.55 | 0.6 | 0.6 | 0.4 | 0.45 | 0.5 | 0.55 |
| Lilongwe Botanic Garden | 0.55 | 0.6 | 0.65 | 0.65 | 0.6 | 0.65 | 0.75 | 0.85 |
| Mzuzu Botanic Garden | 0.4 | 0.45 | 0.5 | 0.55 | 0.4 | 0.45 | 0.5 | 0.5 |
| Whole project average | 0.48 | 0.53 | 0.58 | 0.6 | 0.47 | 0.52 | 0.58 | 0.63 |

This table compares the occupancy rates for accommodation and conferences under two scenarios: an optimistic scenario with tourist facilities and public subsidy, and a current reserved scenario without these factors. The optimistic scenario shows higher occupancy rates for both accommodation and conferences across all years and botanic gardens, with the whole project average reaching 82% for accommodation and 83% for conferences in year 4 onwards.

## HResults of the analysis of the implementation of the whole project (tourist facilities only) - with public subsidy at 42%

|  |  |
| --- | --- |
| Active Scenario | Whole Project – Tourist components only - with public subsidy (42%) - Optimistic occupancy rates |
| Private partner |  |
| Uses of funds (000'MK) | 11 440 419 |
| Construction cost | 10 337 831 |
| % | 90.4% |
| Capitalised interests | 1 102 588 |
| % | 9.6% |
| Sources of funds (000'MK) | 11 440 419 |
| Equity | 1 798 783 |
| % | 15.7% |
| Debt | 5 299 747 |
| % | 46.3% |
| Investment subsidy | 4 341 889 |
| % | 38.0% |
| Target equity IRR | 30.7% |
| Equity IRR | 30.87% |
| Project IRR | 13.07% |
| Minimum ADSCR | 1.29 |
| Public sector |  |
| Uses of funds (000'MK) | 5 466 132 |
| Construction cost | 0 |
| % | 0.0% |
| Investment subsidy to private | 4 341 889 |
| % | 79.4% |
| Capitalised interests | 1 124 243 |
| % | 20.6% |
| Sources of funds (000'MK) | 5 466 132 |
| Public debt | 5 466 132 |
| % | 100.0% |
| Public debt annuity (first year of operation) | -1 362 906 |
| NPV of public debt service | -3 090 923 |
| Annual operating revenue to public | 0 |
| NPV of operating revenue to NHBG | 0 |

This table presents the financial analysis of a project involving tourist facilities, funded with a 42% public subsidy. The project is expected to have a positive financial outcome for the private partner, with an equity IRR of 30.87% and a project IRR of 13.07%. However, the public sector's involvement is largely through debt financing, resulting in a negative NPV of public debt service.

## GResults of the analysis of the implementation of the whole project (tourist facilities only) – with 40% public subsidy

|  |  |
| --- | --- |
| Active Scenario | Whole Project – Tourist components only - with public subsidy (40%) - Optimistic occupancy rates |
| Private partner |  |
| Uses of funds (000'MK) | 11 478 439 |
| Construction cost | 10 337 831 |
| % | 90.1% |
| Capitalised interests | 1 140 608 |
| % | 9.9% |
| Sources of funds (000'MK) | 11 478 439 |
| Equity | 1 860 810 |
| % | 16.2% |
| Debt | 5 482 497 |
| % | 47.8% |
| Investment subsidy | 4 135 132 |
| % | 36.0% |
| Target equity IRR | 30.7% |
| Equity IRR | 29.70% |
| Project IRR | 13.07% |
| Minimum ADSCR | 1.24 |
| Public sector |  |
| Uses of funds (000'MK) | 5 205 840 |
| Construction cost | 0 |
| % | 0.0% |
| Investment subsidy to private | 4 135 132 |
| % | 79.4% |
| Capitalised interests | 1 070 708 |
| % | 20.6% |
| Sources of funds (000'MK) | 5 205 840 |
| Public debt | 5 205 840 |
| % | 100.0% |
| Public debt annuity (first year of operation) | -1 298 006 |
| NPV of public debt service | -2 943 736 |
| Annual operating revenue to public | 0 |
| NPV of operating revenue to NHBG | 0 |

The table presents the financial analysis of a project involving the construction of tourist facilities with a 40% public subsidy. The private partner's total investment is 11,478,439,000 MK, with 90.1% allocated to construction costs and 9.9% to capitalized interests. The project is funded through a combination of equity (16.2%), debt (47.8%), and an investment subsidy (36.0%). The public sector's contribution of 5,205,840,000 MK is entirely in the form of debt, with no direct construction costs. The project's financial viability is indicated by a target equity IRR of 30.7%, an equity IRR of 29.70%, and a project IRR of 13.07%.

## Conclusion

The financial analysis of various scenarios for implementing botanic gardens in Malawi reveals significant variations in project outcomes. Construction costs consistently account for approximately 84.5% of total funds used, with private partners playing a dominant role in funding. The equity IRR and project IRR vary widely across gardens and scenarios, ranging from negative to positive values. The inclusion of tourist facilities and public subsidy can improve financial viability, with the tourist components showing higher IRRs. However, the public sector's involvement often involves debt financing, which can impact the NPV of public debt service. The optimistic scenario with higher occupancy rates for hospitality services shows promising financial outcomes for a project involving tourist facilities with public subsidy, highlighting the potential for increased revenue generation.

# Value for Money Assessment

## Cost of the project for the Public Sector in the PSC (public procurement) model – Scenario 6: Whole project (tourist facilities only)/ optimistic occupancy rates

|  |  |
| --- | --- |
| NPV and VfM | Amount (‘000 MK) |
| NPV of public sector debt service | -6 261 062 |
| NPV of Taxes | 0 |
| NPV of O&M Costs | -81 537 792 |
| NPV of Operation revenues | 95 715 867 |
| Public Sector NPV - Risk Free | 7 917 013 |
| NPV of risks | -12 733 401 |
| NPV for the public sector - With risks | -4 816 388 |

The table presents the financial implications of a public sector project under a PSC (public procurement) model, considering optimistic occupancy rates for tourist facilities. The project is expected to generate a positive NPV of 7,917,013,000 MK without considering risks. However, after factoring in risks, the NPV decreases to -4,816,388,000 MK, indicating a potential financial loss for the public sector.

## Value for Money of the PPP model – Scenario 6: Whole project (tourist facilities only) with a 42% public subsidy/ optimistic occupancy rates

|  |  |
| --- | --- |
| NPV and VfM | Amount (‘000 MK) |
| NPV of public sector debt service | -3 090 923 |
| NPV of Taxes | 3 320 291 |
| NPV of O&M Costs | 0 |
| NPV of Operation revenues | 0 |
| Public Sector NPV - Risk Free | 229 368 |
| NPV of risks | -2 388 331 |
| NPV for the public sector - With risks | -2 158 963 |
| Value for Money | 2 657 425 |
| Value for Money (%) | 55.2% |

Scenario 6 of the PPP model, with a 42% public subsidy and optimistic occupancy rates, reveals a positive Value for Money (VfM) of 55.2%. The public sector NPV with risks is negative at -2,158,963,000 MK, but the VfM remains positive due to the high NPV of taxes (3,320,291,000 MK).

## Conclusion

The Value for Money Assessment indicates that the PSC model for the public sector may result in a financial loss, with a negative NPV after considering risks. In contrast, Scenario 6 of the PPP model, with a 42% public subsidy and optimistic occupancy rates, shows a positive Value for Money (VfM) of 55.2%. This positive VfM is driven by the high NPV of taxes, despite a negative public sector NPV with risks. The analysis suggests that the PPP model with a public subsidy may be a more financially viable option for this project.