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Financing reproductive health in Ebonyi State, Nigeria: An investment case for equity and economic growth

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Abstract

This article presents the findings from the Ebonyi State Reproductive Health Investment Case. Drawing on situation analysis, budget analysis, costing, cost-benefit analysis, and fiscal space analysis, the study estimates the resources required to achieve universal access to reproductive health services across the state. The results show that health sector allocations averaged less than 8% of the total state budget, with only 1.4% directed specifically to reproductive health. Achieving full-scale provision of services would require ₦20 billion (USD 13.3 million) by 2030. This investment is projected to avert 130,000 unintended pregnancies and prevent 1,300 maternal deaths, translating into ₦1,624 billion (USD 1.1 billion) in social and economic benefits—a benefit-cost ratio of 19:1. Equity analyses reveal particularly strong gains for rural and low-income households. Overall, increasing investment in reproductive health is a highly cost-effective and equitable strategy for improving health outcomes and advancing sustainable development in Ebonyi State. *(Afr J Reprod Health 2026; 30 [7s]: 29-38).*

Keywords: Reproductive health financing, Investment case, Cost-benefit analysis, Fiscal space analysis, Nigeria

Résumé

Cet article présente les résultats de l’argumentaire d’investissement pour la santé reproductive dans l’État d’Ebonyi. En s’appuyant sur une analyse de la situation, une analyse budgétaire, une estimation des coûts, une analyse coût-bénéfice, et une analyse de l’espace budgétaire, l’étude estime les ressources nécessaires pour atteindre l’accès universel aux services de santé reproductive dans l’ensemble de l’État. Les résultats montrent que les allocations au secteur de la santé représentaient en moyenne moins de 8% du budget total de l’État, dont seulement 1,4% étaient spécifiquement destinés à la santé reproductive. La mise en œuvre à grande échelle des services nécessiterait 20 milliards de nairas (13,3 millions de dollars américains) d’ici 2030. Cet investissement devrait permettre d’éviter 130 000 grossesses non désirées et de prévenir 1 300 décès maternels, ce qui se traduirait par 1 624 milliards de nairas (1,1 milliard de dollars américains) de bénéfices sociaux et économiques, soit un ratio bénéfice-coût de 19:1. Les analyses d’équité révèlent des gains particulièrement importants pour les ménages ruraux et à faibles revenus. Dans l’ensemble, l’augmentation des investissements dans la santé reproductive constitue une stratégie à la fois très rentable et équitable pour améliorer les résultats sanitaires, et faire progresser le développement durable dans l’État d’Ebonyi. *(Afr J Reprod Health 2026; 30 [7s]: 29-38).*

Mots-clés: Financement de la santé reproductive, Argumentaire d’investissement, Analyse coût-bénéfice, Analyse de l’espace budgétaire, Nigeria

Introduction

Ebonyi State, located in south-eastern Nigeria, is home to an estimated 3.6 million people who are predominantly rural and engaged largely in subsistence agriculture.[1] Despite its abundant natural resources, Ebonyi remains one of Nigeria’s poorest states, with a poverty rate exceeding 80%, the third highest nationally.[2] Established in 1996 with Abakaliki as its capital, the state consists of 13 Local Government Areas (LGAs), 171 political wards, and a three-tier health system comprising 741 health facilities of which 532 are public.[3] Reproductive health indicators in Ebonyi State reveal persistent inequities that disproportionately affect women and rural communities. The contraceptive prevalence rate (CPR) is among the lowest in the South-East region at 8.2%, while unmet need for family planning stands at 23%, significantly above national and regional averages.[4] These gaps contribute to high levels of unintended pregnancies, unsafe abortions, and maternal mortality. Deeply rooted cultural norms, gender inequalities, and misconceptions about modern

contraception further reduce uptake of reproductive health services, especially in remote and underserved areas.

Family planning is globally recognised as a highly cost-effective *best buy* intervention capable of reducing maternal mortality while generating substantial economic returns. Evidence shows that every dollar invested in family planning yields multiple benefits, including reduced health expenditures, improved productivity, and strengthened gender equity.[5] In Nigeria, scaling up reproductive health services is central to achieving the Sustainable Development Goals (SDGs). It aligns closely with the priorities outlined in the National Family Planning Blueprint (2020–2024) and the country's FP2030 commitments.

In this context, the United Nations Population Fund (UNFPA), in collaboration with the Ebonyi State Government, developed an investment case to quantify the economic and health gains associated with expanding women's reproductive health services. This investment case is intended to serve as a strategic advocacy tool to strengthen resource mobilisation, support evidence-based policymaking, and guide the efficient allocation of state resources.

Methods

Framework

This investment case employed a mixed-methods approach to assess the fiscal feasibility and economic justification for increasing investment in reproductive health services in Ebonyi State. The methodology combined quantitative fiscal and costing analyses with a contextual review of relevant policies to generate evidence for advocacy and decision-making. Five complementary analytical tools were applied: situation analysis, budget analysis, costing, cost-benefit analysis, and fiscal space analysis. Each tool contributed a distinct analytical perspective to inform how reproductive health interventions could be prioritised and sustainably financed.

Data sources

The primary data sources consisted of audited financial statements from the Ebonyi State Accountant General covering the years 2019 to 2023, the State Approved and Citizens' Budgets, the Medium-Term Expenditure Framework, and sectoral budget releases.[6–8] Additional information was obtained from the National Bureau of Statistics, the Nigeria Demographic and Health Survey (2018), and programme expenditure records provided by partners including UNFPA, USAID IHP, and UN Women, all of which contributed health and gender-related expenditure data for activities implemented in the state. Data verification involved cross-checking fiscal figures across audited accounts and budget documents, reconciling discrepancies identified in the classification of expenditures, and validating internal consistency across financial sources.

Situation analysis

The situation analysis provided the baseline context for the investment case and informed all subsequent financial and economic analyses by identifying gaps in service coverage and system performance. It examined demographic, epidemiologic, and service delivery indicators related to reproductive health and gender equality, drawing on secondary data from national surveys, routine health information systems, and reports from development partners. A descriptive analytical framework was used to assess trends in contraceptive prevalence rate (CPR), unmet need for family planning, maternal mortality ratio, and skilled birth attendance coverage. The review also incorporated socioeconomic indicators such as poverty incidence, literacy levels, and disparities between rural and urban populations to highlight demand- and supply-side determinants influencing reproductive health service utilisation.

Budget analysis

Budget analysis was undertaken to assess the level of fiscal commitment to reproductive health programmes from 2019 to 2023. Revenue and expenditure data were disaggregated by economic classification—distinguishing recurrent from capital spending—and by functional classification, with emphasis placed on allocations to the State Ministry of Health, the State Primary Health Care Development Agency (SPHCDA), and the State

Ministry of Women Affairs. Year-on-year trends were examined to determine the share of total state expenditure allocated to maternal, neonatal, reproductive health, and family planning line items. Expenditure efficiency was assessed by comparing approved budgets with actual releases. To ensure comparability across years, all figures were adjusted for inflation using the Central Bank of Nigeria's average consumer price index (CPI).

Costing and scenario modelling

The costing analysis quantified the financial resources required to achieve defined coverage levels for reproductive health interventions for the period 2024 to 2030. A bottom-up, ingredient-based costing model was developed using UNFPA's Reproductive Health Costing Tool and the Lives Saved Tool (LiST) to parameterise health impacts. The model estimated direct programmatic costs—such as service delivery, commodities, logistics, and human resources—alongside indirect system-strengthening costs related to governance, monitoring, and infrastructure. Unit cost data were drawn from national health sector costing studies, state procurement records, and international reference databases. All costs were expressed in 2024 Nigerian Naira (₦) and discounted at 3% to reflect present value. An inflation of 34% and an exchange rate of ₦1,500 per USD 1 were incorporated into projections. Three cost scenarios were modelled to reflect different coverage trajectories for contraceptive prevalence. The baseline scenario assumed no change in the CPR, which remained at 9.7%. The mid-scale scenario assumed a 1% annual increase in CPR, rising to 16.7% by 2030. The ambitious scenario assumed a 2% annual increase, reaching 23.7% by 2030.

Cost-benefit analysis

The cost-benefit analysis assessed the economic returns on reproductive health investments by comparing projected programme costs against estimated societal benefits. A benefit-cost ratio (BCR) framework was used, valuing benefits in terms of deaths averted, productivity gains, and reductions in healthcare expenditures. Health outcomes—including maternal and neonatal deaths averted and unintended pregnancies prevented—were modelled using LiST. These outcomes were translated into monetary terms using the disability-adjusted life years (DALY) approach, applying Nigeria's 2022 GDP per employed worker (USD 17,457) and associated elasticity parameters. All monetary values were expressed in 2023 terms, and future benefit and cost streams were discounted at an annual rate of 3%. Sensitivity analyses using discount rates of 1% and 5% were conducted to assess the robustness of the results. The benefit-cost ratio for each intervention area was calculated by dividing the total discounted benefits by the total discounted costs.

Fiscal space analysis

The fiscal space analysis examined Ebonyi State's ability to mobilise additional resources for reproductive health without compromising fiscal sustainability. The assessment identified five potential sources of financing: improved revenue mobilisation, reprioritisation within existing expenditures, efficiency gains, external grants or innovative financing mechanisms, and borrowing. Each of these sources was evaluated using historical trends in revenue and expenditure, existing debt ratios, and other macro-fiscal indicators. Baseline fiscal projections covering the period 2024 to 2030 were developed using a medium-term fiscal framework model.

Scenario modelling was used to test optimistic, moderate, and conservative assumptions for revenue generation, expenditure efficiency, and borrowing capacity. The analysis estimated the level of resources that could realistically be reallocated or mobilised each year to support reproductive health priorities. Key variables assessed included the elasticity of statutory allocations to fluctuations in oil prices, the potential for growth in internally generated revenue through tax administration reforms, the scope for efficiency savings through procurement rationalisation, and the amount of fiscal headroom available within existing debt-service-to-revenue ratios. All assumptions were validated through technical consultations with the State Budget Office, the Ministry of Finance, and development partners.

Ethical considerations

This study did not involve the collection of primary data from human subjects, nor did it include clinical, behavioural, or personally identifiable information. All analyses were based on secondary datasets already in the public domain or routinely generated through government systems. Although the methodology included participatory consultations—such as an inception workshop, technical working group sessions, and a validation workshop—these were part of standard policy development processes in which participants contributed institutional views in their official capacities.

Because no personal data were collected and no research procedures involving human subjects were undertaken, formal ethical approval was not required. Participation in all consultations was voluntary and aligned with government protocols. No individual-level information was recorded, and no identifiable opinions or quotations are reported. The study adhered to international principles for ethical policy research, including respect for persons, transparency, and protection of confidentiality.

Results

Financing landscape

Between 2019 and 2023, Ebonyi State's budgetary allocation to the health sector averaged 7.8% of the total state budget, a figure that remains well below the 15% Abuja Declaration benchmark. Within the health budget, funding explicitly earmarked for reproductive health services—including maternal and new-born health and family planning—accounted for an estimated 1.2–1.6% of total health spending during the period. Although nominal allocations to health increased each year, actual releases fluctuated considerably. The average budget credibility rate, measured as the proportion of approved funds that were ultimately spent, was 68%, and there were notable shortfalls in capital expenditures for reproductive health infrastructure and commodity procurement.

The analysis also highlighted a strong dependence on donor and federal transfers for essential reproductive health commodities. Family planning consumables, in particular, were predominantly financed by development partners. More than 80% of total expenditure comprised recurrent costs, driven mainly by personnel spending, while domestic funding for programmatic activities such as community outreach, demand creation, and service supervision remained limited. Although fiscal performance showed modest improvement in 2022 and 2023 due to stronger internally generated revenue and ongoing public finance reforms, reproductive health funding continued to be spread across multiple ministries and lacked a dedicated family planning budget line. Overall, the findings point to a persistent funding gap and emphasise the need for improved budget prioritisation and efficiency to achieve universal access to reproductive health services.

Financing needs and gaps

Under the baseline scenario, maintaining current levels of reproductive health service coverage over the 2024–2030 period would require approximately ₦8.7 billion (USD 5.8 million) (Figure 1). The moderate scale-up scenario, in which CPR increases by 1% annually, would require ₦14.6 billion (USD 9.7 million). The ambitious scale-up scenario, which models a 2% annual increase in CPR and reflects a pathway toward universal access to family planning and reproductive health services, would require ₦19.8 billion (USD 13.2 million) by 2030. When compared with the average annual reproductive health allocation estimated in the budget analysis—approximately ₦350 million or about USD 230,000—the financing gap is substantial. The gap ranges from ₦8.3 billion (USD 5.5 million) in the moderate scenario to ₦14.3 billion (USD 9.5 million) in the ambitious scenario. These figures indicate that current state and partner contributions collectively cover less than one quarter of the projected funding needs.

Health benefits

The moderate scale-up scenario, which assumes gradual improvements in family planning outreach, supply chain performance, and community engagement, is projected to reduce unintended pregnancies by approximately 23% relative to the

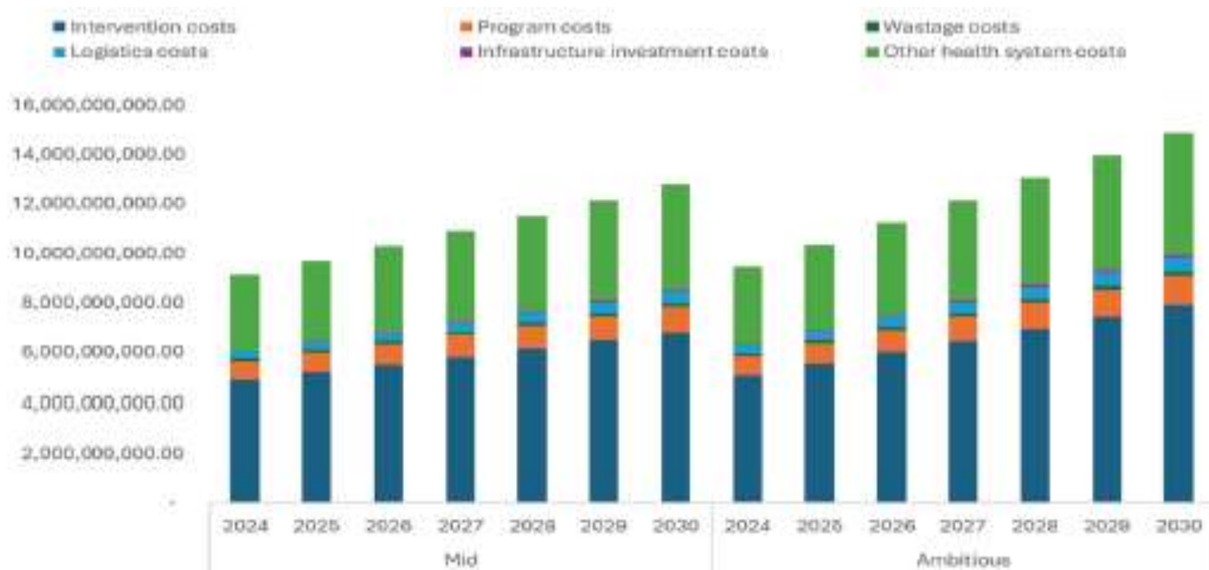
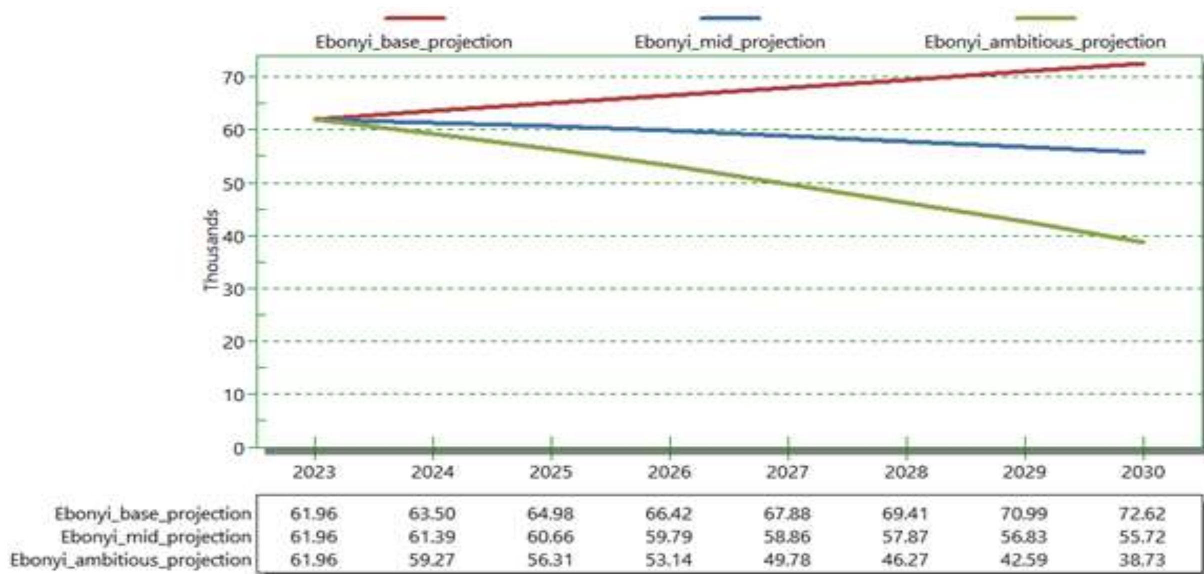


Figure 1: Reproductive health costs by different coverage scenarios in Ebonyi State, 2024-2030 (in ₦)

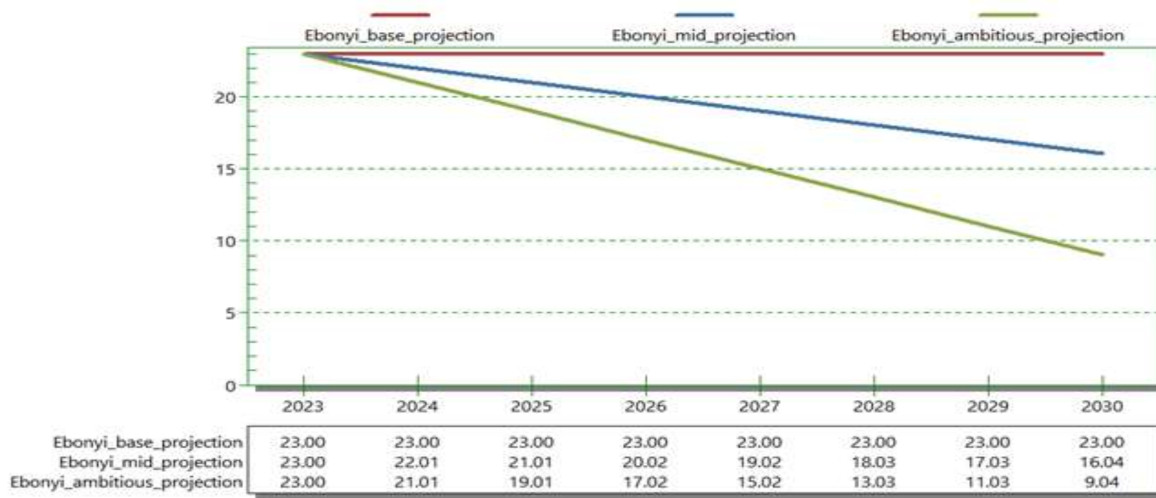


	2023	2024	2025	2026	2027	2028	2029	2030
Ebonyi_base_projection	61.96	63.50	64.98	66.42	67.88	69.41	70.99	72.62
Ebonyi_mid_projection	61.96	61.39	60.66	59.79	58.86	57.87	56.83	55.72
Ebonyi_ambitious_projection	61.96	59.27	56.31	53.14	49.78	46.27	42.59	38.73

Figure 2: Projected unintended pregnancies by different coverage scenarios in Ebonyi State, 2023-2030 (in thousands)

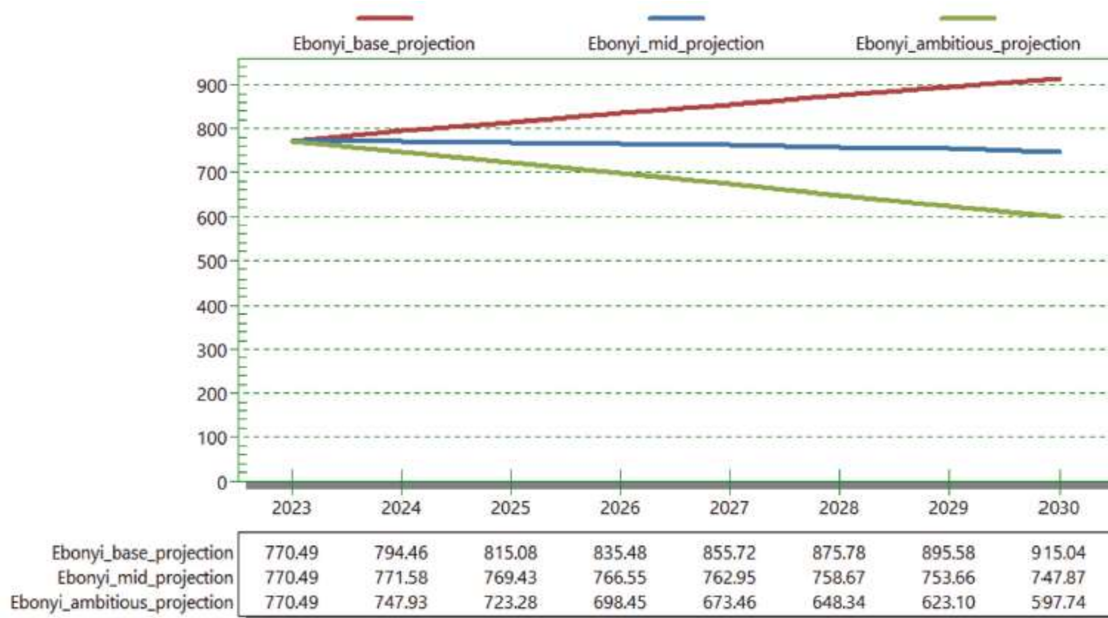
baseline (Figure 2). Under this scenario, unmet need for family planning would decline by seven percentage points, reaching 16%, while the maternal mortality ratio (MMR) would fall to an estimated 448 deaths per 100,000 live births by 2030 (Figure 3). This reduction translates into approximately 275 maternal deaths averted between 2024 and 2030 (Figure 4).

Under the full scale-up scenario, where universal access to reproductive health services is achieved, the model predicts almost a 50% reduction in unintended pregnancies, equivalent to preventing roughly 18,500 cases annually, or around 130,000 over the full period. Unmet need for family planning is projected to decline to 8%, and the MMR is expected to drop to approximately 387 deaths per 100,000 live births. This scenario would avert an estimated 1,275 maternal deaths between 2024 and 2030.



	2023	2024	2025	2026	2027	2028	2029	2030
Ebonyi_base_projection	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Ebonyi_mid_projection	23.00	22.01	21.01	20.02	19.02	18.03	17.03	16.04
Ebonyi_ambitious_projection	23.00	21.01	19.01	17.02	15.02	13.03	11.03	9.04

Figure 3: Projected unmet need for family planning by different coverage scenarios in Ebonyi State, 2023-2030 (as a % of unmet need)



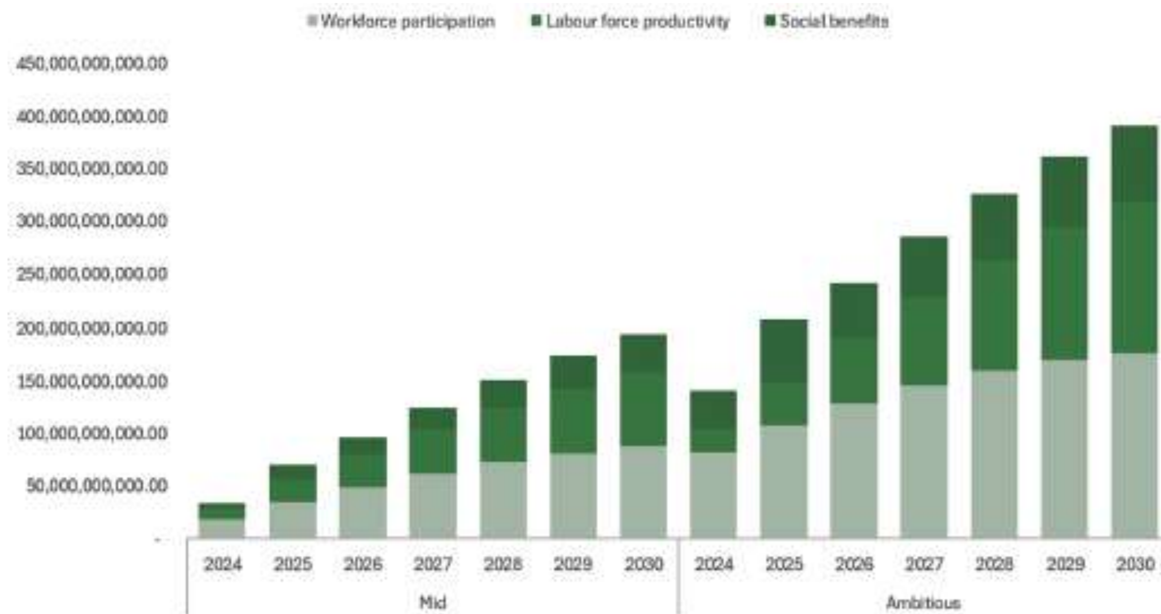
	2023	2024	2025	2026	2027	2028	2029	2030
Ebonyi_base_projection	770.49	794.46	815.08	835.48	855.72	875.78	895.58	915.04
Ebonyi_mid_projection	770.49	771.58	769.43	766.55	762.95	758.67	753.66	747.87
Ebonyi_ambitious_projection	770.49	747.93	723.28	698.45	673.46	648.34	623.10	597.74

Figure 4: Projected maternal deaths by different coverage scenarios in Ebonyi State, 2023-2030

Economic benefits

The moderate scale-up scenario is projected to generate total economic benefits of approximately ₦845 billion (USD 563 million) through 2048 (Figure 5). These benefits arise from increased workforce participation, improved labour productivity, and broader social gains attributable to improved reproductive health outcomes. The average annual economic benefit under this scenario is approximately ₦121 billion (USD 8.1 million). The resulting benefit-cost ratio (BCR) is 11.1:1, meaning that every ₦1 invested in reproductive health services yields about ₦11 in long-term economic returns.

The ambitious scenario produces even greater gains. Under this pathway, cumulative economic benefits are projected to reach ₦1,624



Note: The total benefits are projected to 2048 from each year of intervention

Figure 5: Distribution of economic benefits by different coverage scenarios in Ebonyi State, 2024-2030 (in ₦)

billion (USD 1.1 billion), with an average annual value of ₦232 billion (USD 154.7 million). The associated BCR of 19.1:1 shows that the returns on investment nearly double compared with the moderate scenario.

Financing options

The fiscal space assessment presents a mixed picture, combining structural constraints with notable opportunities to mobilise the estimated ₦85.11 billion (USD 56.7 million) required for reproductive health interventions between 2024 and 2030. Ebonyi State's fiscal framework remains heavily dependent on statutory federal transfers, which contribute roughly 50–72% of total revenue. Internally generated revenue accounts for a comparatively modest 28–50%, underscoring the state's vulnerability to federal revenue volatility and highlighting the need for more resilient domestic financing strategies.

Recent years have seen an increase in the state's debt burden, particularly in 2022 and 2023, underscoring the importance of prudent borrowing and strengthened fiscal discipline. At the same time, the state has several underutilised mechanisms for expanding fiscal space. Strengthening internally generated revenue through the modernisation of tax administration—especially digitalised systems, expansion of the tax base, and improved compliance within the informal sector—represents the most immediate avenue for increasing domestic resources.

Additional opportunities exist within non-tax revenue mobilisation. These include updating and rationalising user fees for public services, revitalising state-owned enterprises to generate dividend income, and implementing electronic platforms for fee collection and licensing. Public-private partnerships in areas such as health infrastructure, logistics, and supply chain management can bring in off-budget resources while preserving fiscal stability.

On the expenditure side, gradually increasing the share of the budget allocated to health offers another pathway for strengthening reproductive health financing. Integrating overlapping health programmes, consolidating administrative systems, and adopting pooled procurement mechanisms for commodities can reduce costs and improve efficiency. Performance-based financing at the facility level can enhance accountability and strengthen service delivery. Better alignment of donor funding with state

priorities through coordinated planning and co-financing arrangements can also increase the impact of external resources.

Overall, simulation results suggest that improvements in tax administration and the digitalisation of revenue systems could yield an additional ₦4–6 billion annually (USD 2.7–4 million). Further gains could be achieved through expenditure-side reforms. The integration of maternal and reproductive health programmes, combined with bulk procurement for contraceptives and the introduction of performance-based financing, could generate cost savings of 10–15%. When combined with donor co-financing, these measures could fully support the moderate scale-up scenario and provide substantial contributions toward the ambitious scenario.

Equity considerations

The equity analysis demonstrates that expanding reproductive health investments would yield disproportionate benefits for underserved and vulnerable populations in Ebonyi State. Both the moderate and ambitious scenarios show the largest improvements among rural women, adolescents, and low-income households, where unmet need for family planning currently exceeds 25%. Enhanced outreach, strengthened community distribution channels, and further integration of reproductive health services into primary healthcare platforms are projected to reduce rural–urban and income-related disparities by up to 40% by 2030. Additionally, reducing unintended pregnancies among adolescents and women in the lowest wealth quintiles is expected to prevent significant financial hardship and contribute to improved household productivity.

Discussion

This study presents the first sub-national investment case in Nigeria to quantify the socioeconomic benefits of scaling up reproductive health interventions. The findings from Ebonyi State illustrate the transformative potential of investing in women's health and rights within a broader national development agenda. By applying evidence-based modelling tools, including LiST and cost-benefit frameworks, the analysis demonstrates the substantial socioeconomic returns achievable through targeted reproductive health investments.[6-8]

The public health implications of scaling up contraceptive access and improving reproductive health service quality are profound. Under the ambitious scale-up scenario, maternal deaths could decline by up to 35%, while unintended pregnancies could fall by nearly 50% relative to baseline levels. These projections are consistent with global and regional evidence showing that contraceptive use reduces maternal morbidity, enhances birth spacing, and improves neonatal and child survival.[9,10] The implications are particularly important in Ebonyi, where rural residence, sociocultural norms, limited service availability, and high out-of-pocket costs continue to impede access to care.[11,12]

The economic evidence presented in this investment case reinforces the value of prioritising reproductive health. The cost-benefit analysis indicates that investments in family planning and prevention of harmful practices are highly cost-effective. Under the ambitious scenario, a benefit-cost ratio close to 19 suggests that each Naira invested could generate many times its value in long-term socioeconomic benefits. These benefits arise from reductions in healthcare costs associated with pregnancy-related complications and unsafe abortions, increased participation of women in the labour force, improved educational attainment for girls, and broader productivity gains.[13,14]

Expanding access to voluntary contraception is also central to advancing equity, bodily autonomy, educational opportunities, and women's economic participation.[11,12] Achieving single-digit levels of unmet need for family planning under the ambitious scenario would not only produce major improvements in health outcomes but would also strengthen women's agency and participation in social and economic life. Addressing harmful practices such as child marriage and female genital mutilation (FGM) is equally essential, given that both perpetuate early childbearing, school dropout, and poverty, while generating long-term intergenerational consequences.[15,16]

Sustaining these gains requires deliberate investments in system strengthening, including

human resources for health, commodity security, data systems, and last-mile delivery mechanisms.[20,21] Community engagement remains essential for addressing entrenched sociocultural norms. Effective strategies include partnerships with traditional and religious leaders, engagement of men and boys, and leveraging the role of community health extension workers to accelerate demand and support behavioural change. Strengthened programmatic integration and robust supply chains are also necessary to ensure that expanded access results in consistent, high-quality services.

The policy implications of these findings are significant. The investment case provides a compelling and locally grounded justification for prioritising reproductive health in medium-term expenditure frameworks and multi-sectoral development plans, reframing such investments as contributions to human capital development rather than consumption.[19,22] Aligning domestic and partner resources through coordinated planning, transparent financial tracking, and performance-based incentives has the potential to enhance impact and improve continuity across political cycles. Financing these priorities is feasible if Ebonyi expands its fiscal space through complementary strategies. Although the state remains highly reliant on federal transfers, opportunities exist to strengthen tax administration, implement user-fee reforms cautiously and equitably, and adopt performance-based purchasing. Efficiency gains can also be generated by integrating family planning into existing RMNCAH+N platforms and strengthening public financial management (PFM) systems.[17,18] These strategies align with national policies on domestic resource mobilisation and efficient public finance practices, positioning reproductive health firmly within broader development and governance agendas.[16]

Despite its strengths, the analysis is subject to several limitations. Although validated models were used, projections depend on assumptions regarding macroeconomic conditions, programme uptake, and health system performance. The LiST model draws on available survey and programme data, which may not fully reflect sub-state heterogeneity, and the analysis does not capture unexpected shocks such as epidemics, conflict, or rapid inflation, which could affect service delivery or financing.[22] Nevertheless, sensitivity analyses demonstrate that the estimates are conservative, and the extensive consultation and validation processes ensure that the findings remain relevant for planning, budgeting, and advocacy.

Conclusion

This investment case demonstrates that strengthening reproductive health services in Ebonyi State is both a critical public health priority and a sound economic and fiscal strategy. Evidence from the costing and economic analyses shows that even modest increases in domestic investment could generate substantial returns by reducing maternal deaths, lowering unintended pregnancies, and improving the overall well-being of women and families. The benefit-cost ratios across all scenarios reinforce the efficiency of reproductive health spending, indicating that every Naira invested yields multiple times its value in long-term socioeconomic gains. The budget analysis further highlights the importance of elevating reproductive health within the state's fiscal architecture. Establishing dedicated budget lines, enhancing the efficiency of current expenditures, and mobilising additional resources from domestic and external partners emerge as essential steps for addressing existing funding gaps. The projected outcomes also confirm that scaling up reproductive health investments will help narrow persistent equity gaps, particularly for rural and low-income populations, while advancing progress toward national and global commitments, including the SDGs.

Realising these benefits will require sustained political commitment, evidence-based budgeting, and stronger inter-sectoral coordination. Prioritising reproductive health as a central component of human capital development offers Ebonyi State an opportunity to accelerate its demographic transition, promote gender equality, and lay the foundation for sustained economic growth. Continued collaboration among government institutions, development partners, and communities will be essential to ensuring that every woman and girl has access to the services and opportunities necessary for a healthy and productive life.

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Data availability

The original contributions presented in this study are included in the supplementary material. Further inquiries can be directed at the corresponding author.

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