



SYNTHESIS REPORT

Synthesis Study on Lessons Learned from the Basic Needs Trust Fund (BNTF)

VOLUME I

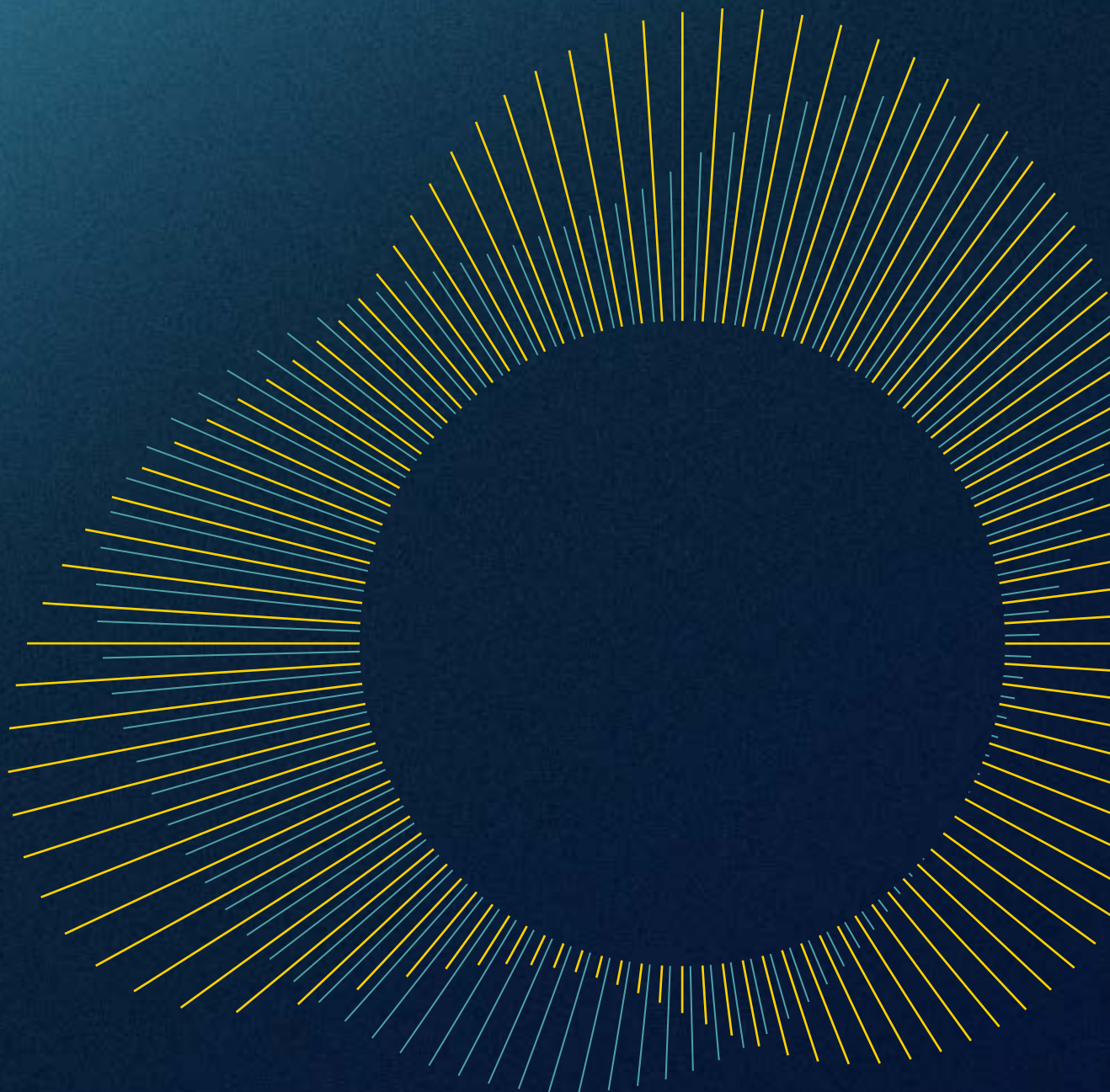


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Acronyms

AI	Artificial Intelligence	LLM	Large Language Model
ALMPs	Active Labour Market Programmes	M&E	Monitoring and Evaluation
BCADI	Basic Community Access and Transportation	MCL	Matrix of Coded Lessons
BMCs	Borrowing Member Countries	MI	Map of Interventions
BNTF	Basic Needs Trust Fund	MSMEs	Micro, Small, and Medium Enterprises
CDB	Caribbean Development Bank	MSR	Matrix of Systematic Reviews
CENA	Community Engagement and Needs Assessment	OCR	Optical Character Recognition
CLO	Community Liaison Officer	OIE	Office of Independent Evaluation
CMIs	Community Monitoring Interventions	PCs	Project Countries
CNAA	Community Needs and Assets Assessment	PTAs	Parent-Teacher Associations
CS	Case Study	PWDs	Persons with Disabilities
ECD	Early Childhood Development	RE	Renewable Energy
EE	Energy Efficiency	REEEU	Renewable Energy and Energy Efficiency Unit
EGS	Energy Generation and Supply	STEM	Science, Technology, Engineering, and Mathematics
EHRD	Education and Human Resource Development	TA	Technical Assistance
ESPS	Energy Sector Policy and Strategy	ToR	Terms of Reference
GE	Gender Equality	TVET	Technical and Vocational Education and Training
IA	Implementing Agency	WRMA	Water Resource Management Authority
ICT	Information and Communication Technology	WSSE	Water and Sanitation Systems Enhancement
JSIF	Jamaica Social Investment Fund	YCS	Youth and Citizen Security
LIV	Livelihoods		

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The opinions expressed in this report are those of the external evaluation team and do not necessarily reflect those of CDB. Responsibility for the opinions expressed in this report rests solely with the authors. Publication of this document and the opinions expressed within does not imply endorsement by CDB.

1.0 Executive Summary

The **Basic Needs Trust Fund (BNTF)** is one of the Caribbean Development Bank's (CDB) longest-standing poverty reduction programs, launched in 1979 and designed to improve access to basic services for the most vulnerable populations and communities across participating Borrowing Member Countries (BMCs). The BNTF has evolved across multiple programming cycles, financing interventions in sectors such as **Education and Human Resource Development (EHRD), Livelihoods (LIV), Water and Sanitation Systems Enhancement (WSSE), Basic Community Access and Transportation (BCADI), Youth and Citizen Security (YCS), Energy Generation and Supply (EGS).**

Multiple independent evaluations have assessed the BNTF's relevance and performance over time, providing valuable insights into trends, lessons learned, and persistent challenges. CDB, through the Office of Independent Evaluation (OIE), has commissioned a synthesis study to consolidate evaluation findings and extract cross-cutting lessons from CDB evaluations and institutional documents, supporting evidence-based programming and policy design. This effort is not only a retrospective exercise but also a forward-looking investment that deepens CDB's institutional learning and enhances the design and impact of future initiatives. This report presents the results of the synthesis study, complemented by valuable insights from rigorous global evaluation evidence from similar interventions.

Objectives¹

To generate strategic, actionable insights by synthesising evidence from past evaluations of CDB, the BNTF, and institutional documents, in order to inform CDB's future poverty-reduction programming, institutional learning, and decision-making.

Methodology

The study was conducted as a systematic evidence synthesis, implementing a combination of methodologies to achieve its objectives. The process began with a desk review of 89 documents from CDB and OIE, followed by Thematic classification and analysis using an analytical framework specially designed to organise findings by thematic areas, impact dimensions, and lesson-learned categories. This classification facilitated the identification of trends, enabled analysis by thematic area, country, and cycle, and, as an added value, highlighted gaps in the BNTF evaluation.

A crucial and innovative component was **Automated Evidence Processing and Synthesis**, a six-step hybrid process that combines efficiency-focused automation with human-in-the-loop validation for accuracy and transparency. The automated process involved steps like Document Conversion and Traceability using optical character recognition (OCR), Pre-processing into paragraph-level units, and Semantic Representation for clustering and alignment. A large language model (LLM) was specifically used in the Automated Synthesis step to extract and synthesise the most relevant content into concise entries, complete with source and page references for traceability. Throughout the process,

¹ The complete list of objectives can be found in *Annexe I, Volume II*.

Human Quality Assurance² was maintained, with the consultant actively reviewing, validating, and refining outputs to ensure alignment, accuracy, relevance, and consistency, preventing the acceptance of LLM summaries at face value.

Finally, utilising the same hybrid process, the relevant systematic reviews were processed and synthesised to identify and analyse effective approaches from similar past interventions. Systematic Reviews serve as a reliable source of information for evidence-based decision-making. They analyse and assess the quality of primary studies included to determine the reliability of the findings, thereby offering a comprehensive overview of existing research on a given subject. This procedure involves synthesising the results of multiple studies to reach a more robust conclusion. This approach enabled the identification of successful strategies within each thematic area and offered illustrative examples of outputs and outcomes that could inform the design, monitoring, and evaluation of future interventions aligned with BNTF priorities.

The Basic Needs Trust Fund (BNTF) serves as the Caribbean Development Bank's (CDB's) primary poverty-reduction instrument and has demonstrated ongoing success. The BNTF program achieves its objectives through active community participation and by aligning design with national priorities, thereby supporting national development initiatives to improve access to and delivery of basic services and enhance human development outcomes in its Borrowing Member Countries (BMCs). The synthesis shows that BNTF achieved its goals through its community-based approach, which enabled people to participate in decision-making (a demand-driven approach) and used funding to build essential social structures and develop skills.

What BNTF does

BNTF operates by:

1. **Employing** participatory approaches to identify basic community needs and establish their priority sequence for implementation.
2. **Supporting** small-scale, high-impact sub-projects in key skills areas (education, livelihoods, water and sanitation, basic access, youth, citizen security, and renewable energy).
3. **Delivering** the work through local Implementing Agencies (IAs) to create community assets through design, construction, and maintenance activities.
4. **Strengthening** community engagement and ownership throughout the project cycle.

What BNTF has achieved

The evidence from evaluations and institutional documents shows BNTF achieved its main objectives through various programming cycles:

1. BNTF has established access to basic services through its construction of schools, road rehabilitation and construction, water system expansion, and community facility enhancement. These services enable thousands of families to access education, health services, employment, and public facilities with enhanced safety and convenience.
2. The educational infrastructure investments, together with early childhood development programs and inclusive facilities, have created better learning spaces, which reduced student density, increased teaching capacity and enhanced environments for social mobility development.
3. Expanded livelihood opportunities, along with skills development, vocational training, and entrepreneurship support, have empowered

2 A complete description of the quality assurance strategies used for this study can be found in *Annexe VI, Volume II*.

beneficiaries (especially women and youth) to access new economic opportunities and build financial stability for their households.

4. The improvement of health, sanitation, and community well-being, through water and sanitation projects, has protected people from dangerous water sources while giving women and children more time for other activities and improving hygiene standards in distant communities without proper access to services.
5. BNTF's participatory model has reinforced community cohesion and ownership. This approach allowed for an elevated local voice, increased buy-in, and promoted community-led monitoring and maintenance. These are considered key drivers of sustainability.

Collectively, the results from the available evaluations and institutional documents reviewed, and supported by systematic review findings, demonstrate that BNTF's model (**targeted investments + community participation + local capacity building**) has contributed meaningfully to poverty reduction across the Caribbean.

Where BNTF can go further

The synthesis also highlights the capacity of BNTF to prove its ability to create infrastructure and deliver direct results; however, it lacks sufficient evidence of its medium- and long-term effects. The current monitoring system shows what was built and who benefited; however, it does not show how people experienced changes in their lives regarding education, employment, income, health, or resilience.

Strengthening the Results Frameworks to include post-completion indicators and follow-up data would allow BNTF to:

1. Demonstrate transformational impacts over time;
2. Strengthen justification for future cycles;
3. Support additional financing proposals;

4. Identify scalable practices and improve programming; and
5. Increase community ownership and long-term maintenance.

Furthermore, the refinement of thematic classifications, especially within the Education, Human Resource Development (HRD), and Livelihoods portfolio, would facilitate the monitoring of outcomes, enable the isolation of effects, and allow for the employment of more tailored indicators without requiring structural changes.

Emerging Recommendation for Management Attention

This synthesis highlights six emerging areas of recommendation for management attention. Together, they point to the opportunity for BNTF to strengthen how it captures, communicates, and builds upon the change it already delivers. Key priorities include:

1. Enhance how BNTF measures and communicates the change it creates, recognising that the Fund has already transformed lives across the Caribbean, but must capture and articulate these results more systematically to demonstrate its full contribution and unlock greater impact in future cycles.
2. Strengthen BNTF's Results Frameworks to capture medium- and long-term change by incorporating post-completion indicators on education, employment, income, health, resilience, and service quality, enabling BNTF to demonstrate transformational impacts over time and strengthen justification for future cycles and financing proposals.
3. Refine thematic classifications to improve traceability of results and enable more tailored monitoring, without requiring structural or organisational changes. Particularly within Education, HRD and Livelihoods, a more explicit categorisation would enable BNTF to isolate effects, identify gaps, and identify emerging opportunities.

4. Institutionalise follow-up data collection through agreements with communities, IAs and local authorities, ensuring that outcome-level information is gathered after project completion. This would enhance evidence for strategic decision-making, sustainability planning, and community ownership.
5. Promote cross-program complementarity within CDB, systematically examining the potential collaborations between BNTF interventions and other units. (e.g., renewable energy, youth development, agriculture, citizen security) to enhance impact and leverage long-term sustainability pathways.
6. Strengthen and institutionalise BNTF's community engagement model, ensuring that community participation, governance structures, and capacity-building are consistently embedded across sub-projects to enhance ownership, responsiveness, and long-term relevance of interventions.

Addressing these areas would support stronger evidence-based decision-making, reinforce accountability, and position BNTF to maximise its developmental impact in future cycles.

Conclusions

The study confirms that BNTF remains highly important because it stems from community needs and delivers results. The program achieved its multiple objectives by enhancing accessibility, developing human potential, and establishing new economic opportunities, leading to improved health outcomes for Caribbean inhabitants. BNTF will achieve its maximum developmental effect through its focus on outcome-level evidence, its use of new approaches, and its refinement of particular thematic frameworks.

The program can benefit from enhanced measurement and communication methods to achieve greater impact on more people. BNTF is well-positioned to demonstrate even greater developmental impact and to reinforce its role as a flagship poverty-reduction program within CDB.

BNTF has already changed lives. Strengthening how it measures and communicates those changes will ensure it can change many more.



2.0 Findings, Lessons and Insights

The Basic Needs Trust Fund (BNTF) is one of the Caribbean Development Bank's (CDB) longest-standing poverty reduction programs, launched in 1979 and designed to improve access to basic services for the most vulnerable populations and communities across participating Borrowing Member Countries (BMCs). The BNTF has evolved across multiple programming cycles, and multiple independent evaluations have assessed its relevance and performance over time.

These evaluations serve as a valuable source of evidence for identifying trends, lessons learned, and persistent challenges. CDB, through the Office of Independent Evaluation (OIE), commissioned a synthesis study to consolidate evaluation findings and extract cross-cutting lessons,³ supporting evidence-based programming and policy design.

A synthesis study on lessons learned was conducted as a systematic evidence synthesis, drawing on a mix of complementary approaches. Findings were drawn from three main sources:

1. **20** Evaluations and Case Studies
2. **62** Institutional Documents (Memorandum for approval sector portfolio, portfolio summaries, implementation documents, staff reports and framework papers)
3. **181** Systematic Reviews⁴

The findings of these three sources were organised across seven thematic areas:

Basic Community Access & Drainage Improvement (BCADI), Education & Human Resource Development (EHRD), Livelihoods (LIV), Water & Sanitation Systems Enhancement (WSSE), Youth & Citizen Security (YCS), Environmental & Green Solutions (EGS), and Community Engagement & Needs Assessment (CENA).

The objective of this Synthesis study is to generate strategic, actionable insights by synthesising evidence from past evaluations of the BNTF to inform CDB's future poverty-reduction programming, institutional learning, and decision-making.

This effort is a retrospective and forward-looking investment to deepen CDB's learning and improve future initiatives, making them more targeted, efficient, and aligned with community needs. To make the insights accessible, this section summarises the main findings, lessons learned and insights, while methodological details are available in *Section 3*. The complete set of detailed findings, including further disaggregation and accompanying in-depth narrative, is available in *Annexe II of Volume II*, which serves as the technical companion to the strategic synthesis provided in *Volume 1*.



3 An extended analysis of cross-cutting lessons learned resulting from the study can be found in *Annexe VIII, Volume II*

4 Systematic reviews were sourced from global evidence repositories: the International Initiative for Impact Evaluation (3ie), the Campbell Collaboration, the Abdul Latif Jameel Poverty Action Lab (J-PAL), the EPPI-Centre (UCL), the International Labour Organization (ILO), and the World Bank Open Knowledge Repository.

2.1 Basic Community Access and Transportation (BCADI)

Based on the classification, 20 evaluations and institutional documents (E&ID), 10 systematic reviews and 24 sub-projects aligned with BACADI. As shown in Figure 1, evidence in E&IDs is predominantly associated with the enhancement of rural roads.

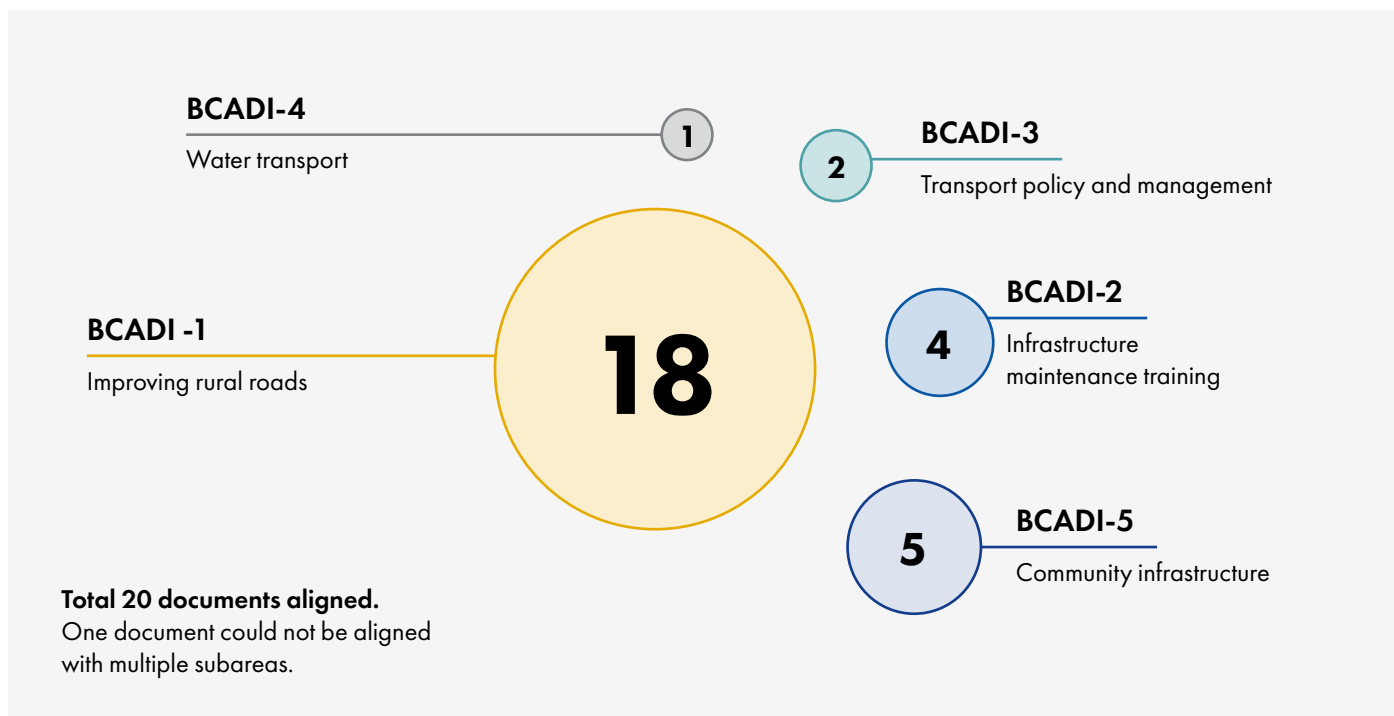
What BNTF has achieved

- **Enhanced rural mobility** via upgraded roads, bridges, and drainage systems, leading to reduced travel times and better access to essential services.
- **Strengthened local resilience** by addressing infrastructure gaps in underserved communities.
- **Promoted integrated community participation** in identifying needs, fostering local ownership.
- **BNTF has reduced poverty** by dramatically improving rural mobility, enabling faster, safer access to health, education, markets, and essential services for isolated communities.

Where BNTF, other CDB Units, and BMCs can go further:

1. Embedding community engagement strategies throughout all stages of project design and implementation could help ensure that interventions reflect local priorities and enhance long-term maintenance and ownership, leading to project sustainability.
2. Integrating road access interventions with complementary components such as drainage, bridge, and rehabilitation could strengthen infrastructure resilience and maximise benefits.
3. Including age-friendly and accessibility considerations and indicators in project planning could ensure that infrastructure responds to the mobility needs of older adults, women, and persons with disabilities. It is recommended to consider indicators related to travel time and accessibility to destinations such as jobs, healthcare facilities, and community support.

Figure 1. Number of evaluations and institutional documents aligned with BCADI, classified by sub-area



4. Developing monitoring systems that combine quantitative and qualitative indicators could support better tracking of both physical improvements and broader social outcomes. It is recommended to consider indicators linked to safety, reduced travel time, and access to essential services.
5. Promoting local training and resource allocation for maintenance could help safeguard infrastructure quality and functionality, ensuring the continued delivery of benefits to communities over time.

Where the Office of Independent Evaluation (OIE) can go further:

1. Broadening the evaluation scope to assess long-term impacts of BCADI interventions beyond physical access could allow for exploring socio-economic outcomes such as employment, school attendance, and health access.
2. Expanding evidence mapping between BNTF and other CDB infrastructure programs could help to explore complementarities, leading to efficiency improvements.
3. Exploring evaluations and thematic learning products linking BNTF BCADI projects with other CDB programs could allow for the identification of lessons on subareas and in community participation and sustainability models.
4. Including maintenance planning and local capacity aspects as part of future evaluation criteria could help assess the durability of outcomes and inform evidence-based recommendations for long-term infrastructure management.

Evidence suggests **BNTF projects (and similar interventions) have “reduced poverty”** by dramatically improving rural mobility, enabling faster, safer access to health, education, markets, and essential services for isolated communities.

2.2 Education and Human Resource Development (EHRD)

Based on the classification, 29 E&ID align with EHRD interventions, 96 systematic reviews and 62 sub-projects. However, it is important to note that interventions related to Livelihoods are also included in this sector category; therefore, there is no exact number of BNTF sub-projects dedicated solely to EHRD interventions.

As shown in *Figure 2*, evidence in evaluations and institutional documents is predominantly associated with the construction and renovation of educational facilities (EHRD-5), whereas interventions to provide Information and Communication Technology (ICT) furniture and equipment (EHRD-6) are comparatively less frequent.

What BNTF has achieved

- **Expanded** access to safer, more accessible and gender-inclusive learning environments.
- **Strengthened** education quality through supporting TVET and skills-building for vulnerable youth.
- **Reduced** travel time and improved attendance through infrastructure improvements.

Where BNTF, other CDB Units, and BMCs can go further:

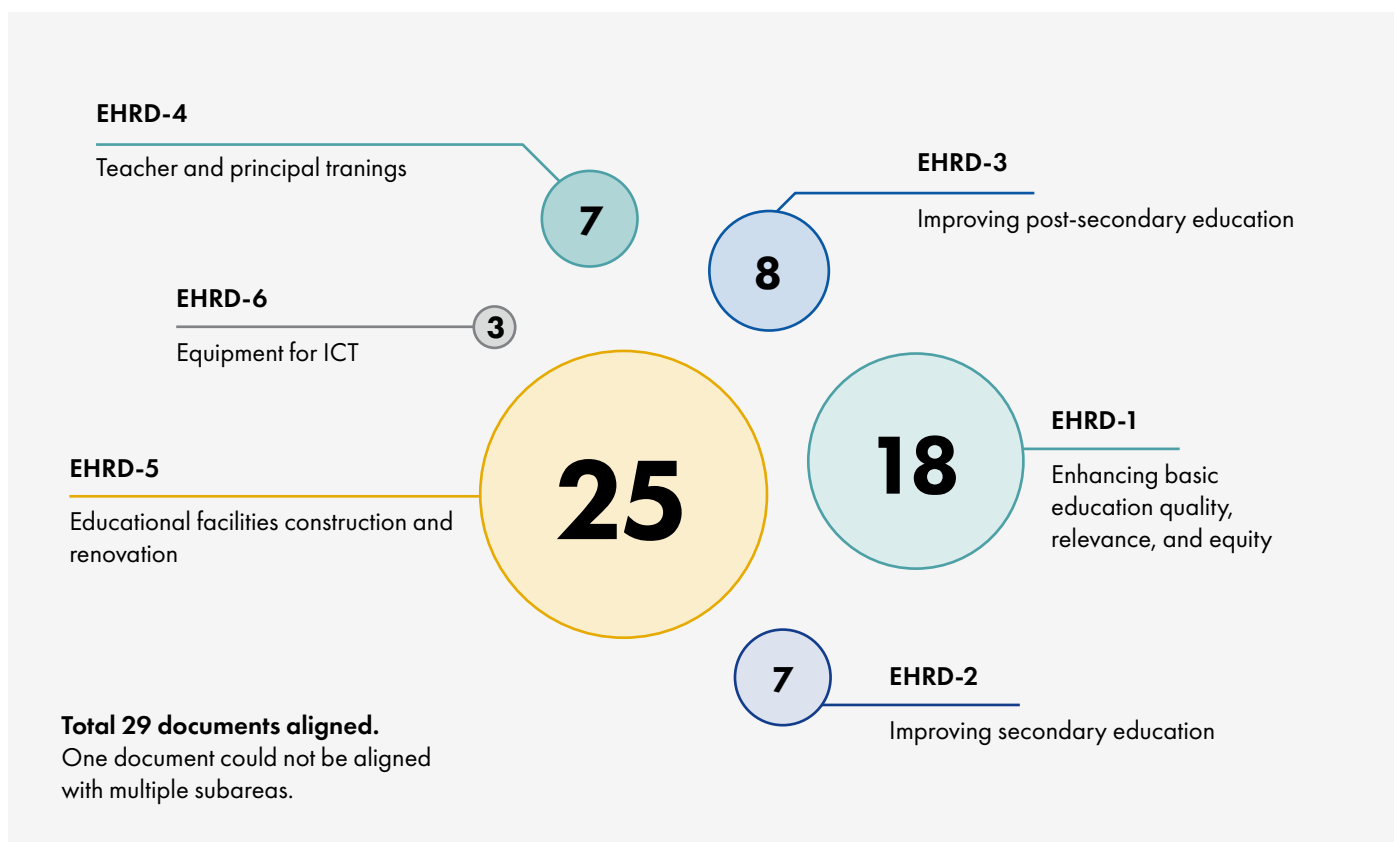
1. Clarifying the causal logic linking inputs, activities, and anticipated outcomes in future interventions could improve the robustness of evidence regarding the connection between educational access, quality enhancements, and social mobility.
2. Integrating outcome-level indicators related to student retention, progression, and learning outcomes, alongside physical infrastructure metrics, could help to better demonstrate impact and strengthen monitoring systems.

3. Integrating accessibility features and gender-sensitive facilities, together with inclusive educational strategies such as targeted training for educators and practitioners, has the potential to substantially enhance equitable access for vulnerable populations.
4. Synchronising construction and implementation timelines with the academic calendar might help to reduce disruptions and maximise efficiency.
5. Integrating technological and digitisation infrastructure projects with ICT training for educators and practitioners may improve educational outcomes and promote the sustained use of the infrastructure.
6. For music interventions, BNTF could consider incorporating specific indicators that could enhance monitoring efforts and assist in generating evidence of educational and social effects.

Where the OIE can go further:

1. Expanding the evaluation scope to include medium, long-term, and gender-sensitive indicators, such as educational continuity, academic achievement, and employability, could better capture the sustained effects of EHRD interventions beyond infrastructure completion.
2. Considering a range of evaluation methodologies that can examine both expected and unforeseen impacts, such as reducing travel time and fatigue, improving attendance, and enhancing the continuity of learning, could further strengthen the evidence of the benefits generated by BNTF.
3. Evaluating sustainability frameworks by examining the efficacy of various post-project maintenance models, such as government-led and community-based approaches, could inform the development of future strategies.

Figure 2. Number of evaluations and institutional documents aligned with EHRD, classified by sub-area



4. Documenting participatory practices by recording and assessing community feedback and engagement processes could yield insights into how local participation contributes to sustainability and accountability.

Evidence suggests BNTF projects (and similar interventions) have “**reduced poverty**” by expanding access to safe, inclusive and higher-quality learning environments that improve long-term employability and human capital development.

2.3 Livelihoods (LIV)

Based on the classification, 23 E&ID align with LIV interventions, and 46 systematic reviews. Regarding sub-projects, interventions related to Livelihoods are included in the BNTF sector category “Education, HRD and Livelihoods”; consequently, there is no specific count of BNTF sub-projects dedicated exclusively to LIV interventions.

As shown in *Figure 3*, evidence from E&ID is predominantly associated with developing job and entrepreneurial skills (LIV-2), whereas interventions to

strengthen communities (LIV-3) are comparatively less frequently observed.

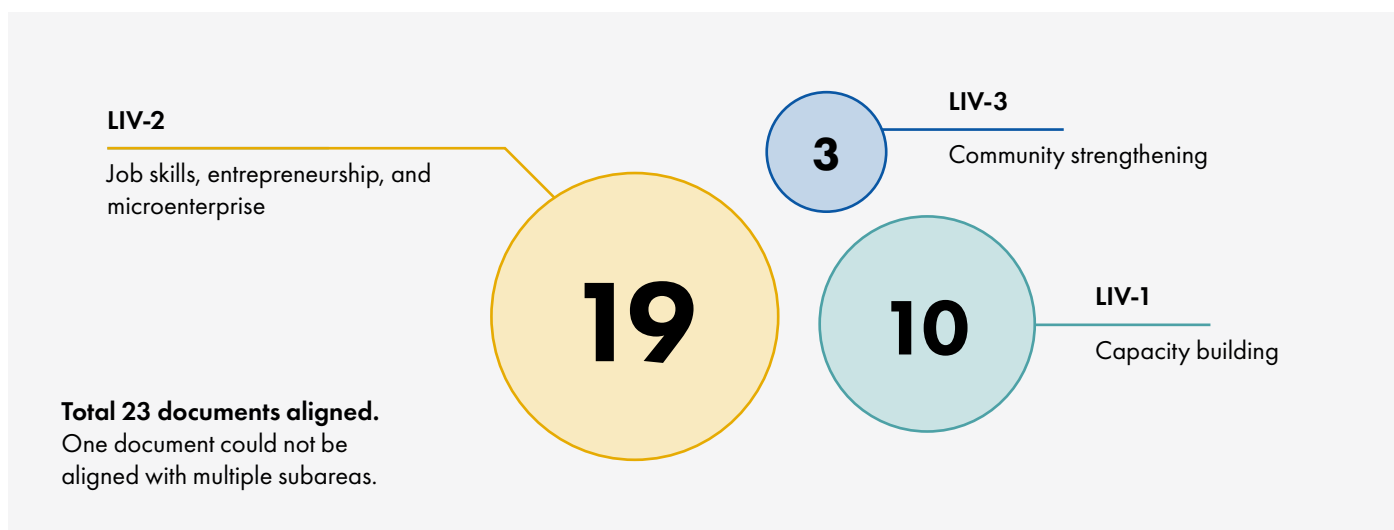
What BNTF has achieved:

- **Strengthened** existing enterprises and enabled new livelihoods through training, microfinance, and asset provision.
- **Delivered** context-specific interventions aligned with local economic shifts (agriculture decline, climate shocks, rural isolation).
- **Increased** focus on youth, women and vulnerable groups through BNTF-10 baseline assessments.

Where BNTF, other CDB Units, and BMCs can go further:

1. Including livelihood-specific outcomes, such as employability, enterprise growth, and income sustainability, alongside existing training and access indicators, could generate more useful evidence for decision-making across the project cycle, from design to monitoring and justification for expansion.
2. Conducting comprehensive baseline assessments and gender analyses during the preparatory phase could help tailor sub-projects to the specific needs of diverse population groups, strengthening the targeting and effectiveness of interventions.

Figure 3. Number of evaluations and institutional documents aligned with LIV, classified by sub-area



3. Integrating multi-component designs that combine training, asset provision, and access to microfinance or market linkages could enhance the sustainability and scalability of livelihood outcomes.
4. Embedding robust beneficiary tracking mechanisms could improve monitoring of employment, income changes, and enterprise performance beyond project completion, supporting continuous improvement and accountability.
5. Fostering community ownership and sustainability by promoting participatory management models, providing training on resource mobilisation, and ensuring that successive projects build on prior efforts could help consolidate long-term results.
6. Ensuring timely and adequate resourcing for project sites, particularly in rural or remote areas, could mitigate risks related to funding delays, limited access to tools and inputs, or unsuitable site conditions, thereby improving implementation efficiency and effectiveness.
5. Evaluating the effectiveness of multi-component livelihood models, combining skills training, asset provision, and financial support, could strengthen understanding of their contribution to sustained poverty reduction and economic resilience.

Evidence suggests BNTF projects (and similar interventions) have “**reduced poverty**” by strengthening local economies—helping vulnerable people build and sustain income through skills.

2.4 Water and Sanitation Systems Enhancement (WSSE)

Based on the classification, 14 E&ID align with WSSE interventions, 13 with systematic reviews, and 15 with sub-projects. As shown in *Figure 4*, evidence from evaluations and institutional documents is predominantly associated with the development and renewal of water systems (WSSE-1), whereas insights related to waste management and disposal (WSSE-4) are comparatively less frequently observed.

What BNTF has achieved:

- **Improved** access to potable water and sanitation in poor and remote communities.
- **Delivered** tangible health, time-saving and livelihood outcomes, especially for women and children.
- **Combined** infrastructure with WASH training to strengthen behavioural change.

Where BNTF, other CDB Units, and BMCs can go further:

1. Developing indicators that capture medium- and long-term results, such as job creation, entrepreneurship sustainability, and women’s economic empowerment, could allow for a more comprehensive assessment of the transformational effects of LIV interventions.
2. Promoting cross-cycle learning by synthesising evidence from livelihood-related interventions implemented under other CDB programs could help identify complementarities, amplify effects, and foster institutional learning.
3. Encouraging the systematic integration of gender and inclusion analyses into evaluation frameworks could enhance monitoring of equitable participation across target groups, particularly youth, older persons, and PWDs.
4. Conducting dedicated evaluations focused exclusively on LIV interventions could generate robust evidence of their transformative effects and document lessons on how this context-driven design contributes to poverty reduction and resilience.
1. Embedding behavioural change components alongside infrastructure could strengthen long-term adoption of improved practices and maximise outcomes.
2. Integrating into project design options for financial sustainability mechanisms, such as tariff structures

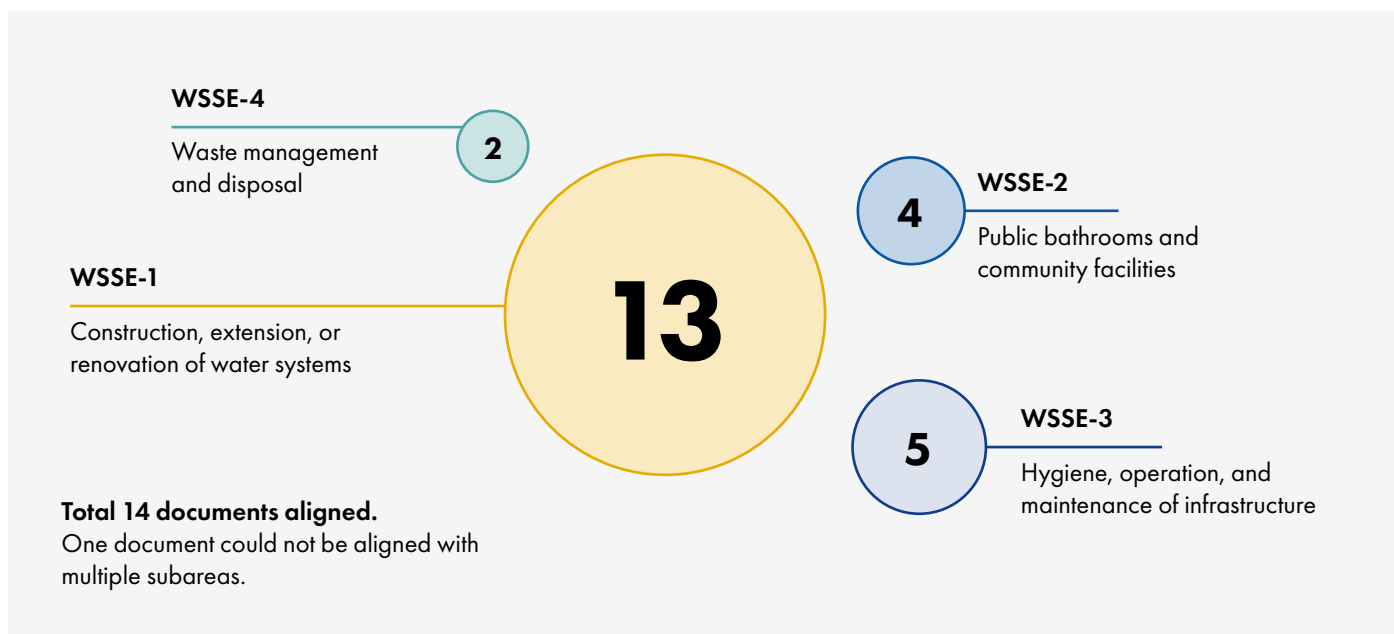
- and maintenance funds, could mitigate the risk of service interruptions and enhance resilience afterwards.
- Promoting community ownership through formalised local management structures and training on resource mobilisation could enhance accountability and sustainability of water systems.
 - Incorporating gender and inclusion analyses into WSSE sub-project design could further enhance social and economic outcomes, ensuring that vulnerable groups benefit equitably.
 - Adopting multi-component models that integrate technical, behavioural, and financial dimensions could achieve stronger and more sustained impacts in WSSE interventions.
- Assessing the medium and long-term sustainability of interventions, including tariff structures and post-project maintenance, could help to identify effective models for sustaining results.
 - Documenting participatory and community-based prioritisation processes within evaluation frameworks could generate evidence on how local ownership contributes to project sustainability and responsiveness.
 - Conducting a comprehensive mapping and in-depth synthesis of sub-projects aligned with WSSE, along with exploring potential complementarities with other thematic areas such as BCADI, LIV, or EHRD, could facilitate the identification of opportunities for cross-sectoral synergies that enhance the developmental impact of BNTF interventions.

Where the OIE can go further:

- Expanding the evaluation scope to include behavioural and social outcomes, such as hygiene adoption, women’s time savings, and perceived well-being, could facilitate the assessment of the multidimensional effects of WSSE interventions beyond infrastructure delivery.

Evidence suggests BNTF projects (and similar interventions) have “**reduced poverty**” by ensuring reliable access to safe water and sanitation, improving health, reducing time burdens—especially for women—and enabling more productive livelihoods.

Figure 4. Number of evaluations and institutional documents aligned with WSSE, classified by sub-area



2.5 Youth and Citizen Security (YCS)

Based on the classification, 4 E&ID align with Youth and Citizen Security (YCS) interventions and 39 systematic reviews.

As shown in *Figure 5*, evidence from E&ID is predominantly associated with the development of technical skills in the youth population (YCS-3), whereas interventions for crime and violence prevention (YCS-1) are less frequently assessed.

What BNTF has achieved:

- **Supported** youth development through TVET training, alternative livelihoods and targeted urban interventions.
- **Addressed** crime prevention and social inclusion through life-skills, literacy and mediation programs.
- **Aligned** with CDB’s Youth Policy and ETPS priorities.

Where BNTF, other CDB Units, and BMCs can go further:

1. Encouraging the inclusion of YCS-specific indicators (e.g., youth employability, perceptions of safety, and community engagement) could help in better assessing the outcomes and transformational effects of these interventions.
2. Conducting comprehensive baseline and tracer studies could improve monitoring systems and generate stronger evidence of employment, income, and social outcomes among youth.
3. Designing multi-component YCS interventions that combine training, mentoring, and enterprise support may promote longer-term employability and resilience among youth.

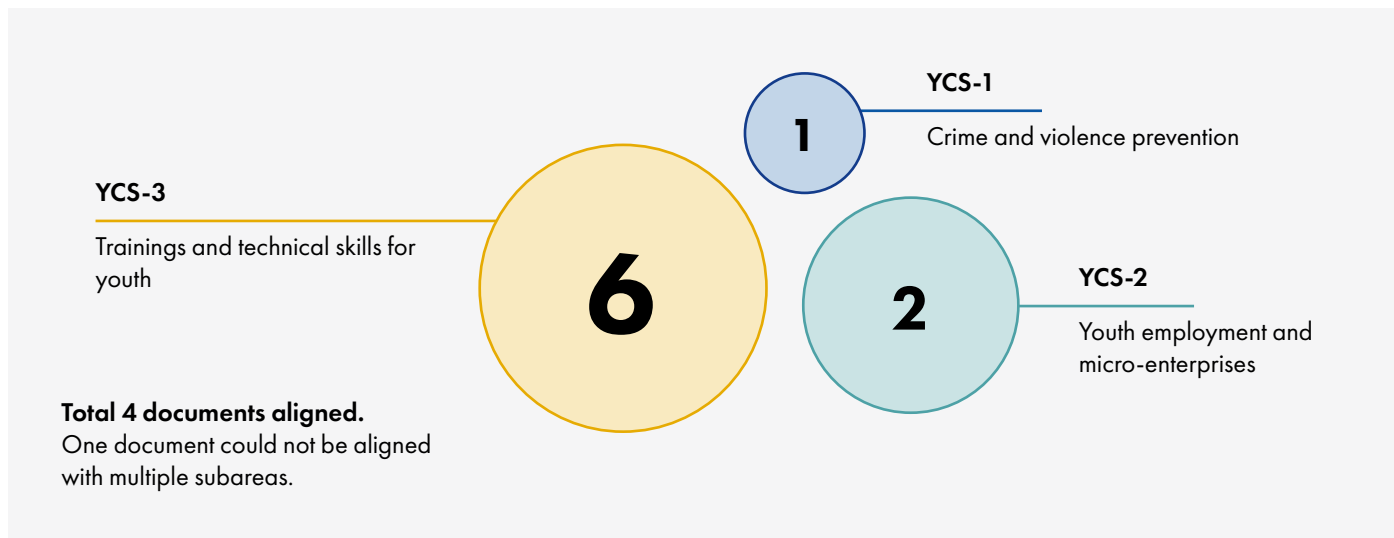
4. Integrating community-based models for violence prevention and social engagement, interventions could enhance ownership, improve behavioural outcomes, and strengthen local security networks.
5. Aligning youth-focused training initiatives with local labour market studies and employer demand, projects could maximise relevance and ensure that training leads to sustainable employment opportunities.
6. Designing interventions that leverage infrastructure previously built or rehabilitated under other BNTF sub-projects could serve as a mechanism to enhance sustainability while also facilitating the monitoring of long-term effects.

Where the OIE can go further:

1. Conducting a dedicated mapping and synthesis of youth and citizen security interventions within BNTF and across CDB programs could identify complementarities, good practices, and lessons learned that ultimately may amplify results.
2. Examining the causal logic linking training, employment creation, and social stability could help strengthen the evidence base regarding how YCS interventions contribute to poverty reduction and inclusive growth.
3. Incorporating gender and inclusion analyses into future evaluations could improve understanding of how effects differ among youth, women, and marginalised groups.

Evidence suggests BNTF projects (and similar interventions) have **“reduced poverty”** by equipping at-risk youth with life skills, training and safer environments that expand opportunities and reduce vulnerability to crime and exclusion.

Figure 5. Number of evaluations and institutional documents aligned



2.6 Energy Generation and Supply (EGS)

Based on the classification, only one evaluation has identified relevant lessons learned aligned with EGS interventions; however, 17 systematic reviews were identified, systematised, and analysed to present valuable evidence that could inform this thematic area. As shown in *Figure 6*, the valuation associated with EGS relates to the enhancement of renewable energy use (EGS-1). Although EGS is referenced in various documents, no additional specific evidence has been reported in evaluations or institutional documents to assess the BNTF sub-projects.

Additionally, the interventions mapping under the 9th and 10th cycles of the BNTF revealed that the Fund does not have a designated sector category for Energy Generation and Supply (EGS). However, sub-projects related to Skills Training Renewable Energy Resilience were identified within the “Education, HRD and Livelihoods” portfolio. It is also possible that additional

actions indirectly align with EGS objectives, such as enhancing water supply systems or implementing environmentally sustainable practices within BCADI interventions.

What BNTF has achieved

- **Integrated** energy-related considerations (resilience, sustainability) into operations manuals.
- **Supported** isolated Renewable Energy Resilience training in EHRD projects.
- **Collaborated** occasionally with CDB’s REEEU⁵ for technical assessments.

Where BNTF, other CDB Units, and BMCs can go further:

1. Developing outcome-level indicators that capture environmental and socio-economic results could strengthen evidence on the contribution to outcomes beyond infrastructure completion.
2. Integrating renewable energy and green technologies into existing sub-projects could reduce

5 Energy and Energy Efficiency Unit

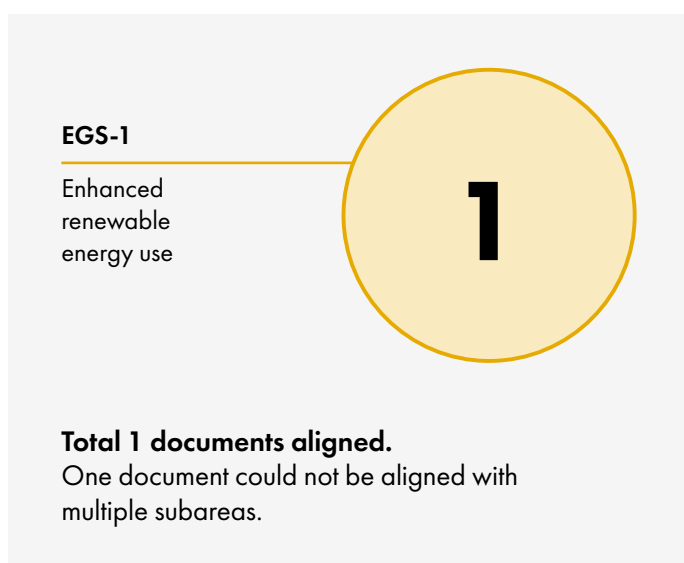
operational costs and improve resilience. (such as solar-powered water systems, energy-efficient school designs, or sustainable materials for BCADI interventions).

3. Incorporating training and capacity-building on renewable energy technologies within livelihoods and HRD programs could develop local skills and promote green entrepreneurship.
4. Designing interventions that build upon or repurpose infrastructure developed in previous BNTF cycles could foster sustainability and facilitate monitoring of long-term outcomes.

Where the OIE can go further:

1. Conducting a targeted synthesis of CDB’s energy-related interventions, including those embedded within BNTF sub-projects, could help identify lessons and complementarities across WSSE, BCADI, LIV, and EHRD.
2. Incorporating renewable energy and environmental sustainability dimensions into future evaluations of BNTF could help to capture additional developmental effects, such as improved health, reduced emissions, and long-term operational savings.

Figure 6. Number of evaluations and institutional documents aligned with EGS, classified by sub-area



3. Mapping opportunities for joint evaluation exercises across thematic areas could help assess cumulative effects and identify synergies that enhance the outcomes of other sectors.

BNTF could reduce poverty by supporting renewable-energy and resilience practices that lower household energy burdens and enhance community stability and climate resilience.

2.7 Community Engagement and Needs Assessment (CENA)

Based on the classification, 13 E&ID align with CENA interventions and 25 systematic reviews. As shown in *Figure 7*, evidence from evaluations and institutional documents is predominantly associated with community needs assessments (CENA-1), whereas insights concerning marginalised populations (CENA-2) and creating funding pathways are comparatively less frequently assessed (CENA-4).

What BNTF has achieved:

- **Strong community-driven model** at the core of subproject identification and prioritisation.
- **High relevance** to community needs, with strong local ownership and participatory design.
- **Established** participatory mechanisms (consultations, monitoring committees, training).

Where BNTF, other CDB Units, and BMCs can go further:

1. Documenting participatory mechanisms used in needs identification and project design could enhance transparency, reinforce accountability and responsiveness to local priorities.
2. Integrating community capacity-building components, such as training on governance,

- maintenance, and resource mobilisation, could empower local groups to manage and sustain assets.
- 3. Ensuring that inclusive engagement mechanisms are applied throughout the project cycle could reduce participation gaps and improve the representativeness of marginalised voices.
- 4. Embedding sustainability and exit strategies at the design stage, including clear maintenance responsibilities and financing plans, could strengthen long-term outcomes.
- 5. Leveraging community engagement experiences across thematic areas could promote cross-learning and consistency, institutionalising community ownership as a key part of its operational model.

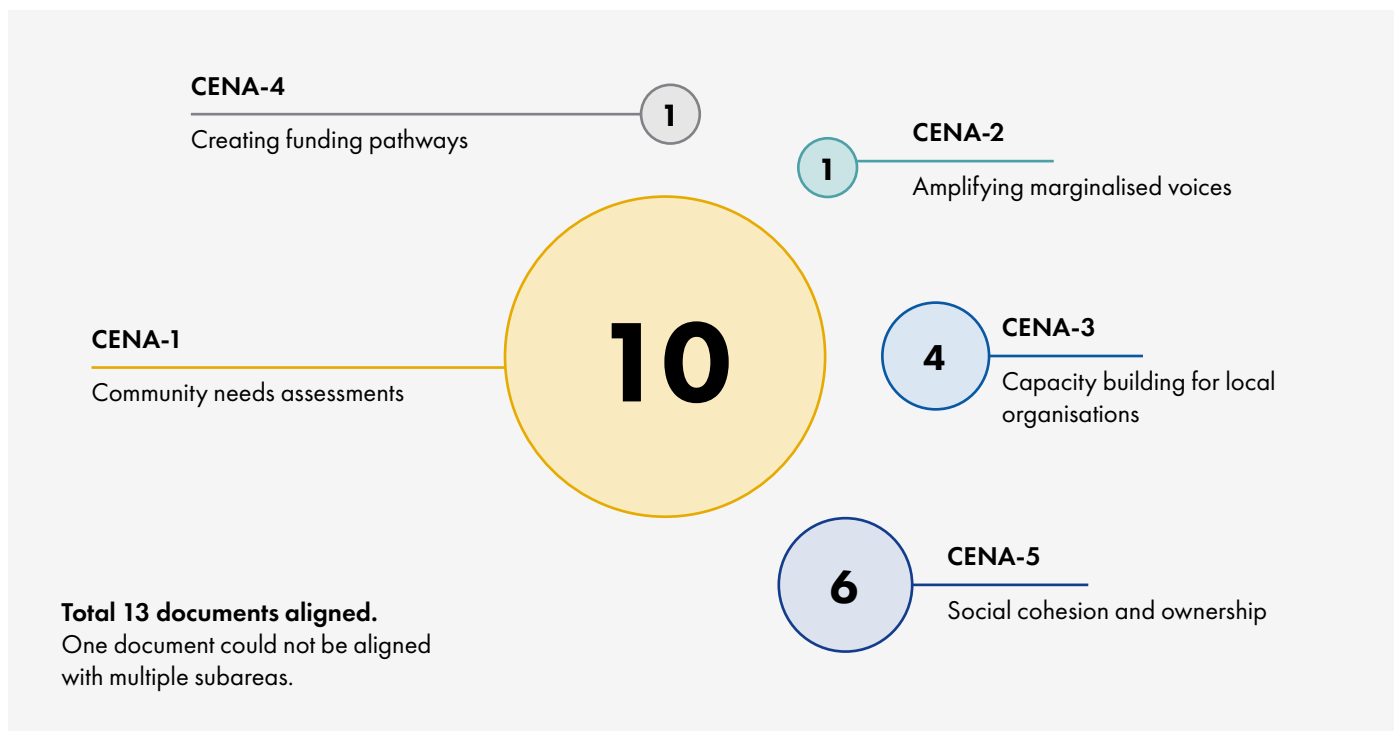
- 2. Adding indicators on community ownership and decision-making participation in future evaluations could better link participation with sustained outcomes.
- 3. Exploring in future evaluations or assessments the relationship between community capacity-building and long-term project success could provide evidence to refine capacity-strengthening across thematic areas.
- 4. Assessing how inclusive community engagement, especially for youth, older adults, and PWD, could make participatory processes more representative and responsive.

Where the OIE can go further:

- 1. Mapping and synthesising evidence on CENA-related practices across thematic areas could help the design of more inclusive participatory frameworks.

Evidence suggests BNTF projects (and similar interventions) have **“reduced poverty”** by empowering communities to identify, own and sustain solutions that directly respond to their most pressing needs.

Figure 7. Number of evaluations and institutional documents aligned with CENA, classified by sub-area



Conclusions

BNTF has a strong community component that has carried out substantial work to identify needs and respond effectively. This is reflected in the frequent recognition of its relevance across evaluation and institutional documents. The desk review identified a concentrated effort in the design and justification stages of sub-project interventions within each BNTF cycle. As a result, the program generally uses indicators that record the number of actions undertaken, the number of beneficiaries reached, and, in some cases, satisfaction levels. While these indicators help to determine the population that now has access to new services, it would be worth considering the inclusion of indicators that explore the additional effects resulting from improved access, for example, changes in access to other basic services such as health, education, and employment, as well as broader changes in the general well-being of beneficiary communities.

Each thematic area presents a series of indicators that could be incorporated to generate stronger evidence of how BNTF interventions have produced change within communities. Collecting additional information after an intervention has concluded may seem like an added effort, but if such follow-up is planned from the design stage, through commitments with the population, local authorities, or implementing agencies, to collect information sometime after project completion, it can bring significant benefits. For instance, this information would provide BNTF with further evidence of the long-term effects and benefits of its actions, thereby strengthening the justifications presented in project approval memorandums for subsequent cycles. In other words, this information would reinforce the data already provided in those documents.

Furthermore, it would be beneficial for communities themselves, as it could foster ownership by demonstrating tangible changes, thereby encouraging

sustained maintenance of the assets and services generated by BNTF interventions. In cases where successful interventions have leveraged additional international funding, such evidence could also strengthen proposals seeking new financial resources by demonstrating tangible outcomes. Finally, having this type of information would contribute to more robust monitoring and evaluation exercises, support stronger assessments, and generate recommendations that enable continuous learning for both BNTF and CDB more broadly.

Regarding the identification of BNTF sub-project actions, it was noted that the current classification of sectors poses challenges when isolating specific activities within each thematic area. A possible improvement would be to divide these categories more clearly, particularly the “Education, HRD and Livelihoods” portfolio. Such a revision would not necessarily require structural changes in staffing, responsibilities, or budgets, but could enhance the clarity of reporting and facilitate evaluation processes by making it easier to isolate the effects of interventions within specific thematic areas. This approach would also support the use of more relevant and tailored indicators, as well as clearer presentation of results, while continuing to help identify potential gaps that BNTF might wish to address through future action.

BNTF has made significant contributions to poverty reduction, particularly through its tailored interventions, which are designed to address the specific needs of each community. Listening to and involving communities has been recognised as one of its key strengths. The findings from systematic reviews reinforce many of the program’s actions and expected outcomes, confirming that BNTF is on the right track in developing its sub-projects. The actionable insights proposed could help to demonstrate the medium- and long-term impacts that BNTF has already been generating, but which have not yet been systematically documented. Evaluating effects after an intervention has ended could also bring

further satisfaction to BNTF by identifying unintended positive effects and deepening learning around its good practices and areas for improvement for future cycles.

Regarding the development of AI-based chatbots, the exercises identified clearly illustrate how such tools could be leveraged to enhance the use of knowledge generated by CDB and to improve analytical processes for reporting findings, with the goal of building knowledge from what has already been identified in CDB evaluation exercises. CDB considers this a valuable area to explore, in that case, it is recommended, particularly based on experience from the desk analysis, to note that several evaluation exercises, while referring to BNTF and acknowledging its contributions to

portfolio objectives, also contain findings, lessons, and recommendations that cannot be directly attributed to BNTF sub-projects. Therefore, when developing these tools, attention should be paid to differentiating between findings that can or cannot be exclusively attributed to BNTF. Bearing this in mind, such an initiative could serve as a valuable exercise for both internal learning and external communication.

Ultimately, consolidating stronger evidence systems, clearer thematic delineation, and innovative analytical tools would not only enhance BNTF's ability to demonstrate its developmental impact but also strengthen CDB's overall learning and accountability framework.



**Shemeon Williams (Trinidad and Tobago),
CDB Future Leaders Network Adviser.**

Emerging Recommendation for Management Attention

The analysis identifies six interrelated areas where BNTF could further strengthen its strategic positioning, learning systems, and ability to demonstrate impact. These recommendations build on the Fund's strong implementation record and its recognised community-driven approach.

1. Enhance how BNTF measures and communicates the change it creates, recognising that the Fund has already transformed lives across the Caribbean, but must capture and articulate these results more systematically to demonstrate its full contribution and unlock greater impact in future cycles.
2. Strengthen BNTF's Results Frameworks to capture medium- and long-term change by incorporating post-completion indicators on education, employment, income, health, resilience, and service quality, enabling BNTF to demonstrate transformational impacts over time and strengthen justification for future cycles and financing proposals.
3. Refine thematic classifications to improve traceability of results and enable more tailored monitoring, without requiring structural or organisational changes. Particularly within Education, HRD and Livelihoods, a more explicit categorisation would

enable BNTF to isolate effects, identify gaps, and identify emerging opportunities.

4. Institutionalise follow-up data collection through agreements with communities, IAs and local authorities, ensuring that outcome-level information is gathered after project completion. This would enhance evidence for strategic decision-making, sustainability planning, and community ownership.
5. Promote cross-program complementarity within CDB, systematically examining the potential collaborations between BNTF interventions and other units. (e.g., renewable energy, youth development, agriculture, citizen security) to enhance impact and leverage long-term sustainability pathways.
6. Strengthen and institutionalise BNTF's community engagement model, ensuring that community participation, governance structures, and capacity-building are consistently embedded across sub-projects to enhance ownership, responsiveness, and long-term relevance of interventions.

Addressing these areas would support more strategic decision-making, enhance the visibility of results, and position BNTF to further expand and sustain its contribution to poverty reduction across future program cycles.



3.0 Methodology

To accomplish the defined objectives,⁶ the study was conducted as a systematic evidence synthesis. The consultant employed various methodologies,⁷ including:

Desk review: A total of 89 documents were received from CDB, as inputs for the study: 13 evaluations provided by the OIE and 76 evaluations and institutional documents provided by BNTF.

However, after careful review, 4 duplicate documents were identified, 2 documents presented terms of reference (ToR), and 1 document contained financial information that was not relevant to the synthesis study. Therefore, 7 documents were eliminated, leaving a total of 82 effective documents for the study. The breakdown by document type is presented in *Table 1*.

Thematic classification and analysis: Evidence was

systematically classified using an analytical framework that organised findings by intervention themes, impact areas, and lesson categories. This process facilitated the identification of trends, enabled subsequent analysis by theme, country, and cycle, and highlighted gaps in BNTF evaluation across areas with more or fewer findings and lessons.

Summary of systematic reviews: Identify, summarise, and analyse systematic reviews on similar interventions to find effective approaches and learn from past outcomes. An initial review selected relevant reviews, which were then thoroughly examined to align with the objectives of this synthesis.

Systematic Reviews provide a reliable source of information for evidence-based decision-making. They analyse and assess the quality of the included primary studies, mainly impact evaluations and meta-analyses, to determine how reliable the findings are. This offers a

Table 1. Number of documents for desk review.

Type	Documents received	Revised documents
Memorandum for approval sector portfolio	27	26
Portfolio Summary	19	19
Evaluation	15	14
Subprojects List	11	11
Case Study	6	6
Implementation Document	5	3
Staff report	3	2
Terms of Reference	2	0
Framework Paper	1	1
Total	89	82

6 The complete list of objectives can be found in Annexe I, Volume II

7 Limitations, risks, and mitigations measures identified from the design of the study can be found in Annexe VII, Volume II

clear overview of existing research on a specific topic. Systematic reviews involve synthesising the results of multiple studies to reach a more robust conclusion. This approach enabled identifying of successful strategies within each thematic area and offered illustrative examples of outputs and outcomes that could inform the design, monitoring, and evaluation of future interventions aligned with BNTF priorities.

Automated Evidence Processing and Synthesis:

For this stage, evaluations and institutional documents provided for desk review, as well as the identified systematic reviews, were processed using a structured pipeline in Python that combined automated document processing with human quality assurance, following six steps:

- 1. Document Conversion and Traceability.** Reports were digitised using optical character recognition (OCR) and indexed with page-level metadata, enabling traceability of findings.
- 2. Pre-processing.** The extracted content was then segmented into paragraph-level units, which served as the basic building blocks of the analysis.
- 3. Semantic Representation.** Each paragraph was mapped to capture the semantic meaning. This allowed clustering, similarity detection, and alignment with the analytical framework.
- 4. Alignment to the Analytical Framework.** Using semantic search and classification models, paragraphs were automatically linked to impact dimensions, themes, and lesson categories as in manual coding. The consultant iteratively reviewed and validated the system's associations, correcting misclassifications early.
- 5. Automated Synthesis.** A large language model (LLM) was applied to extract and synthesise the most relevant content into concise entries. Each entry includes an explicit link to its source document and page reference, preserving transparency and auditability.

- 6. Human Quality Assurance.** The consultant validated the final outputs and stayed actively involved, reviewing results, ensuring alignment with the framework, and refining parameters. This iterative, human-in-the-loop approach prevents accepting LLM summaries at face value and continuously checks for accuracy, relevance, and consistency.

This hybrid process combines automation for efficiency with human validation for accuracy, enabling a systematic, transparent, and replicable synthesis of lessons across BNTF evaluations. It is especially useful given the large volume of information and the limited time available.

Analytical Framework

The analytical framework is structured into three complementary components for analysing lessons learned (What BNTF knows), for Intervention Mapping (What BNTF does) and for synthesising findings from systematic reviews (What works), as shown in Figure 8.

What BNTF knows contains the summarised findings identified in evaluations and institutional documents. What BNTF does identifies BNTF sub-projects by thematic area, and What works presents the findings and outcome indicators from systematic reviews.

A. What BNTF knows: Synthesis of Lessons learned

For the analysis, the following three key elements were considered: intervention areas and sub-areas, impact dimensions, and categories of lessons learned.

Areas and sub-areas of Intervention: based on the preliminary desk review, as well as information available on CDB and BNTF websites, the study focused on: (1) Education and Human Resource Development (EHRD), (2) Livelihoods (LIV), (3) Water and Sanitation Systems

Enhancement (WSSE), (4) Basic Community Access and Transportation (BCADI), (5) Community Engagement and Needs Assessment (CENA), (6) Youth and Citizen Security (YCS), and (7) Energy Generation and Supply (EGS) (*Annexe III, Volume II*). The CENA thematic area was included because inception sessions identified it as of particular interest for CDB. This aims to explore findings and impacts related to community context, alignment with needs, ownership, and external support funding.

Dimensions of Impact: Findings were coded according to six dimensions: relevance, coherence, effectiveness, efficiency, sustainability, and cross-cutting issues. *Table 2* provides a guide to how findings were identified and classified within each thematic area. While a general description of the dimensions was provided by CDB in the ToR for this synthesis (see *Annexe IV, Volume II*), during the inception phase, the consultant further refined them by examining BNTF's activities in each thematic area in order to facilitate the classification of the information in each evaluation and institutional document.

Categories of Lessons Learned: Additionally, lessons-learned information was classified according to its contribution to the following categories: Poverty Reduction, Institutional Arrangements, Community Engagement, Enabling Factors, Hindering/Constraining Factors, Risks or Challenges, or External or Additional Funding (see *Annexe V, Volume II*). This process, part of the semantic representation step, involves clustering, detecting similarities, and aligning with lessons learned categories. The ToR request to examine factors affecting BNTF results led to the definition of categories to systematically capture lessons. The External Funding and Community Engagement categories were added to address recurring priorities identified in the inception phase and in initial discussions with CDB.

The Matrix of Coded Lessons (MCL) was created by coding each document line by line, allowing multiple entries across thematic areas. As shown in *Figure 9*, the MCL summarises conclusions, recommendations, outcomes, and, when available, existing indicators. It ensures comparability across evaluations, themes, countries, and cycles (see *MCL.xlsx*). The hybrid approach efficiently used available resources, enabling the production of a detailed matrix quickly despite its complexity and many variables. This method enhances the capacity to analyse findings, identify trends, and generate more insightful reports.

Analysis by Thematic Area: This component primarily used 89 documents from the Desk Review. During inception, documents were selected to inform the MCL. Consequently, 75 files were identified for lessons learned on relevance, coherence, effectiveness, efficiency, sustainability, and cross-cutting issues. Four were excluded due to repetition or because the document explicitly indicated that BNTF was not the main focus. Thus, 71 documents were analysed. *Table 3* shows that memos often relate to EHDR interventions, evaluations are common in LIV interventions, and WSSE and EGS have not been subjected to evaluation.

The MCL presents a summary of Key findings for relevant dimensions and can be found in the MCL Excel file, including the characteristics of the reviewed documents, findings, conclusions, and, when available, outputs and outcomes.

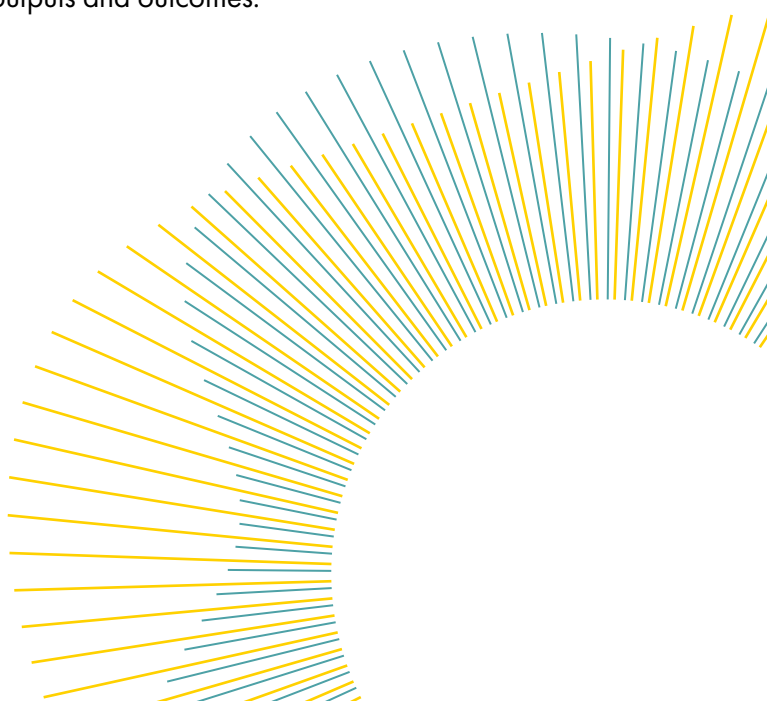


Figure 8. Conceptual diagram of the Synthesis study components.

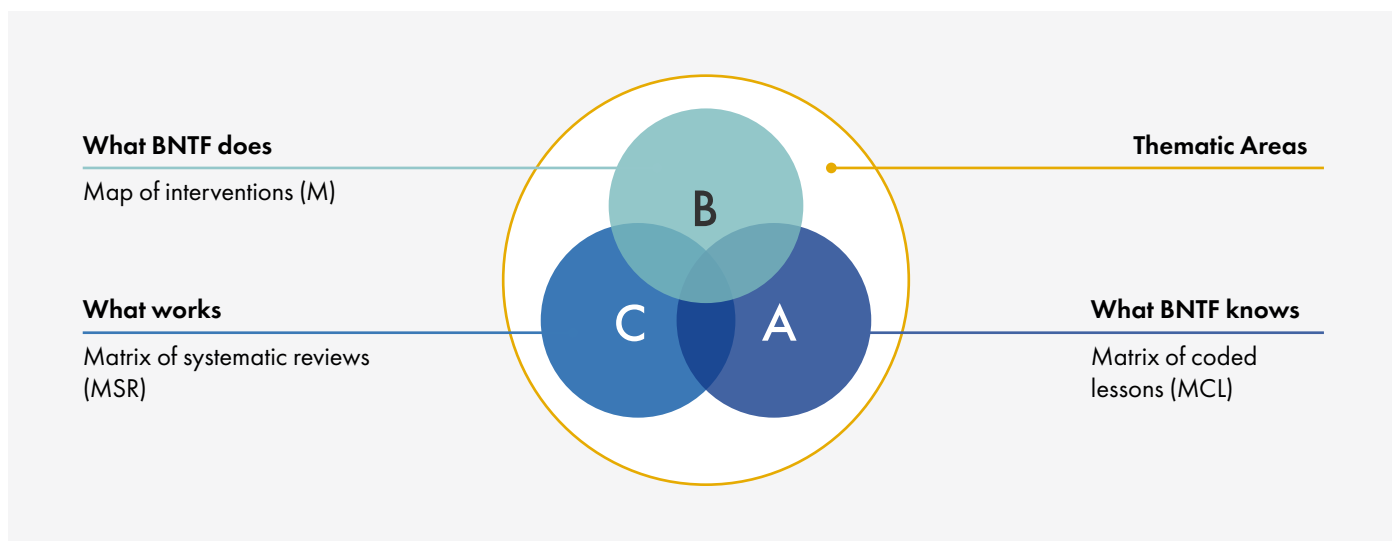


Table 2. Impact dimensions description.

Thematic Area	Relevance	Coherence	Effectiveness	Efficiency	Sustainability	Cross-cutting Themes
Education and human resource development (EHRD)	Aligns with national or community education priorities; addresses equity and skills gaps.	Engagement of teachers, students, parents and communities.	Improved learning outcomes, employability, and institutional performance.	Cost-effective investment in facilities, training and Information and Communication Technology (ICT) tools.	Long-term school maintenance, teacher retention, and institutional strengthening.	Gender equality in education, disability inclusion, youth focus, and digital learning.
Livelihoods (LIV)	Responds to community needs for income generation and economic resilience.	Community-driven livelihood projects and feedback loops.	Increased job skills, entrepreneurship, and microenterprises.	Efficient use of training and financial resources.	Strengthened community organisations and sustainable enterprises.	Youth employment, women's empowerment, climate-resilient livelihoods.
Water and Sanitation Systems Enhancement (WSSE)	Addresses essential needs for water security, sanitation, and hygiene.	Involves community consultations and water committees.	Greater access to safe water and sanitation, improved health outcomes.	Cost-effective infrastructure and service delivery.	Maintenance plans, local technical capacity, waste management systems.	Gender-sensitive sanitation, disability access, and climate resilience.
Basic Community Access and Transportation (BCADI)	Aligns with mobility and connectivity needs for rural and urban communities.	Community involvement in project prioritisation and monitoring.	Improved year-round access, trade facilitation, and reduced isolation.	Optimised construction and maintenance costs and timely delivery.	Local capacity for infrastructure maintenance, policy integration.	Climate adaptation (drainage, flood control), youth participation, and innovation.

Table 2. Impact dimensions description (cont.).

Thematic Area	Relevance	Coherence	Effectiveness	Efficiency	Sustainability	Cross-cutting Themes
Community Engagement and Needs Assessment (CENA)	Reflects local priorities and addresses barriers faced by vulnerable groups.	Participatory approaches and beneficiary feedback mechanisms.	Stronger social cohesion and responsive programming.	Efficient use of participatory tools and platforms.	Community ownership, empowerment, and pathways to leverage external funding.	Gender-responsive engagement, disability inclusion, youth leadership, and digital inclusion.
Youth and Citizen Security (YCS)	Responds to high-priority issues of crime prevention and youth development.	Involves youth, communities, and local organizations in co-design.	Reduction in violence, increased youth employment and participation.	Efficient delivery of training, prevention, and support programs.	Sustained youth networks, community policing, and long-term prevention strategies.	Gender-sensitive approaches, skills development, innovation, and youth empowerment.
Energy Generation and Supply (EGS)	Meets regional demand for sustainable and renewable energy solutions.	Involves communities, governments, and private sector in energy planning.	Improved access to clean and renewable energy.	Efficient deployment of renewable energy technology.	Institutional frameworks for energy management and maintenance.	Climate resilience, innovation, digital solutions, and community training.

Figure 9. Conceptual diagram of the Matrix of Coded Lessons (MCL)

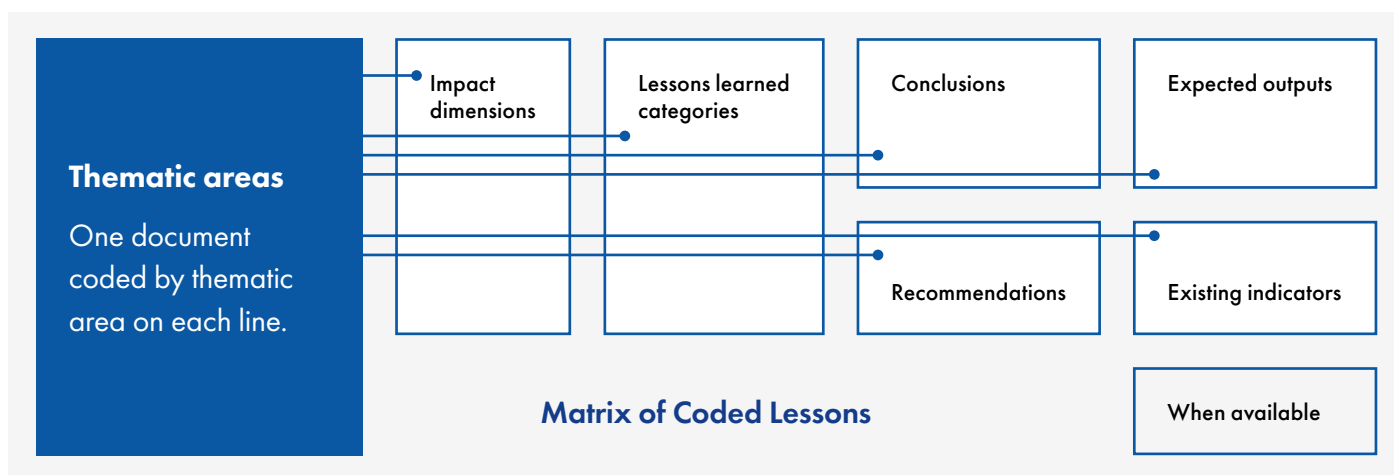


Table 3. Number of documents by thematic area.

Type	Documents	BCADI	CENA	EGS	EHRD	LIV	WSSE	YCS
Memorandum for portfolio approval	26	6	1	0	15	3	5	1
Portfolio Summary	19	5	3	1	10	4	4	0
Evaluation	14	6	4	0	7	10	2	3
Case Study	6	2	2	0	3	2	2	0
Implementation Document	3	0	2	0	0	1	0	0
Staff report	2	1	0	0	2	2	1	0
Framework Paper	1	0	1	0	1	1	0	0
Total	71	20	13	1	38	23	14	4

B. What BNTF does: Intervention Mapping

Based on the desk review, a Map of Interventions (MI) was developed to capture the Ninth and Tenth Cycles of the BNTF projects (BNTF-9 and BNTF-10), utilising information available in the reviewed documents. As shown in Table 4, the MI presents 215 subprojects classified by cycle and thematic area. It is important to note that the MI reflect only the information reported in the documents; no additional calculations or further analysis were done to fill information gaps. Consequently, challenges were introduced to independently identify projects for HDR and LIV, which exhibit a greater concentration on subprojects in both cycles.

The purpose of the MI is to identify the concentration of projects within each thematic area, to determine which sectors have been evaluated (associated with the MCL), and to identify the result indicators, including outputs and outcomes (expected or observed). To generate useful information for decision-making, this IM connects with the synthesis of systematic reviews, summarised in the Matrix of Systematic Reviews (MSR). This approach will enable the identification of effects observed in

interventions similar to those of BNTF-9 and BNTF-10, as well as the measurement of these effects through outputs and observed outcomes. The process of this compilation is described in detail in the following section.

C. What works: Synthesis of Systematic Reviews

This third and final component presents a synthesis of evidence through the Matrix of Systematic Reviews (MSR). This matrix categorises findings from relevant evaluations identified in previously published systematic reviews and aligns them with the thematic areas and sub-areas. The MSR also helps identify what has worked in comparable contexts and provides illustrative examples of outputs and achieved outcomes that could inform the design, monitoring, and evaluation of future interventions aligned with BNTF priorities. This will allow for linking them with the MI and the MCL.

An initial screening of systematic reviews was conducted by thematic area, resulting in the identification of 191 systematic reviews. Followed by an in-depth review of selected studies to ensure alignment with the sub-areas, relevance to similar contexts, and recent publication within the last fifteen years. It is worth noting that the

unit of analysis is the systematic review itself, rather than individual evaluation reports or research papers.

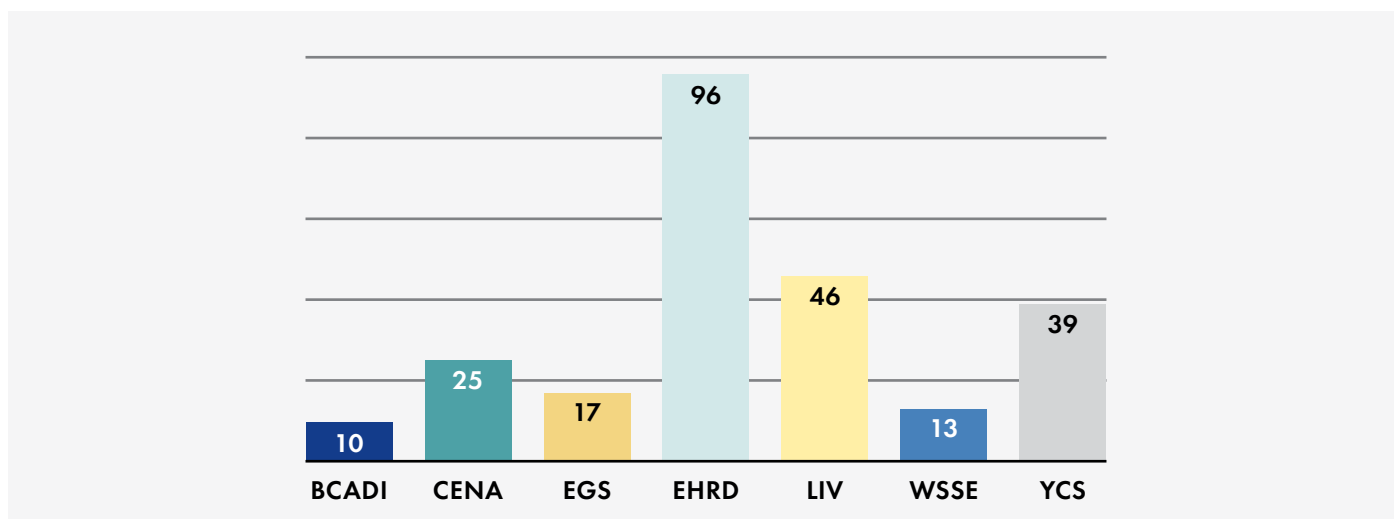
Additionally, for the exclusion criteria, each selected systematic review underwent a basic quality assessment, focusing on the declared methodological robustness, transparency, and clarity of the outputs and outcomes achieved. As a result of this inclusion-exclusion process, a total of 181 systematic reviews were incorporated into the analysis phase. Similarly, as observed in other phases, a single systematic review may correspond to multiple thematic areas.

As illustrated in *Figure 10*, EHRD interventions are evaluated and analysed more frequently, followed by LIV interventions. Unexpectedly, evidence related to BCADI interventions proved more difficult to identify; consequently, only five systematic reviews met the eligibility criteria. More detailed information can be accessed in the MSR in Excel, including the characteristics of the reviewed interventions, findings, conclusions, and, when available, outputs and outcomes.

Table 4. Subprojects by sector and cycle.

Sector	BNTF-9	BNTF-10
Basic Community Access and Drainage	15 (13.2%)	24 (23.8%)
Education, HRD and Livelihoods	78 (68.4%)	62 (61.4%)
Water and Sanitation	21 (18.4%)	15 (14.9%)
Total	114	101

Figure 10. Number of systematic reviews used for the synthesis.



3.1 Use of IA-based tools in Multilateral Organisations

As delineated in the methodology section, this research was conducted with the assistance of artificial intelligence tools at various stages of the process. Although a condensed and synthesised outcome is presented, the development comprised multiple iterative phases. It is essential to acknowledge that, although this approach offers greater efficiency compared to manual methods, it would be prudent for CDB to develop and sustain its own AI assistant to support such complex analyses. For instance, some multilateral organisations utilising these tools were identified as leveraging the extensive knowledge they generate and exploring avenues for creating new knowledge. Some examples are presented below.

1. World Bank: "[ImpactAI](#)" is a generative AI chatbot that makes accessing impact evaluation research effortless. Using customised large language models (LLMs), the tool summarises vast research and highlights key findings. Backed by a database of validated development studies across various topics and regions, ImpactAI ensures users receive accurate insights while preventing AI hallucinations.
2. United Nations Development Programme (UNDP): "[IRDH Chatbot](#)" A digital guide to understand the key findings, data and insights on resilience and development in Latin America and the Caribbean.
3. United Nations Development Programme (UNDP): "[AIDA: Artificial Intelligence for Development Analytics](#)". An AI-powered chatbot capable of answering targeted questions, and extracting lessons and recommendations from evidence from almost 7000 UNDP thematic, country-level and project evaluation reports written in different languages.
4. Inter-American Development Bank (IDB): [Implementation of AI tools](#) to enhance digital government and institutional learning across Latin America and the Caribbean.

5. UNICEF: [Use of conversational agents](#) in education and early childhood programs to engage communities and collect data.
6. Asian Development Bank (ADB): has created multiple [AI-driven chatbots](#) and tools aimed at various functions, including aiding with project details, recruitment, supporting vulnerable populations and managing institutional knowledge and streamlining evaluation processes.
7. World Health Organization (WHO): Deployment of [AI-powered assistants](#) for health-data triage and to support real-time program monitoring in low-income settings.

These examples illustrate how multilateral organisations are already harnessing AI and chatbot technologies to elevate institutional learning, streamline evidence synthesis and strengthen monitoring and evaluation frameworks. For CDB, such insights offer a rich source of guidance for the design and implementation of its own AI-assisted synthesis processes.





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