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IMPLEMENTATION COMPLETION AND RESULTS REPORT (TF0B0649)

ON A

SMALL GRANT

IN THE AMOUNT OF EUR 0.7 MILLION

TO THE

United Nations Economic Commission for Africa

FOR

Africa Climate Resilience Investment Facility (P169051)

March 18, 2024

Environment, Natural Resources & The Blue Economy Global Practice
Eastern And Southern Africa Region

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ABBREVIATIONS AND ACRONYMS

ACRIS	Africa Climate Resilient Investment Summit
AFRI-RES	Africa Climate Resilient Investment Facility
AUC	Africa Union Commission
AUDA-NEPAD	African Union Development Agency
CLEWS	Cameroon Land, Energy, and Water Systems Project
CPF	Country Partnership Frameworks
COVID-19	Coronavirus disease
ECRAI	Enhancing the Climate Resilience of Africa's Infrastructure
IDEP	Institute for Economic Development and Planning
NDC	Nationally Determined Contribution
PDO	Project Development Objective
PIA	Project Implementing Agency
PIDA	Program for Infrastructure Development in Africa
PIDA-PAP 2	Second PIDA Priority Action Plan
TOR	Terms of reference
UNECA	United Nations Economic Commission for Africa
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P169051	Africa Climate Resilience Investment Facility
Country	Financing Instrument
Eastern and Southern Africa	Investment Project Financing
Original EA Category	Revised EA Category

Organizations

Borrower	Implementing Agency
United Nations Economic Commission for Africa	United Nations Economic Commission for Africa

Project Development Objective (PDO)

Original PDO

The Project Development Objective is to enable an Africa-based center of technical competence and excellence to raise awareness and build the capacity of government actors, planners and private developers in Africa to integrate climate change in project planning and design, with a view to enhance opportunities for attracting funding from both development and climate finance sources.

FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
Donor Financing			
TF-B0649	754,460	754,460	707,763
Total	754,460	754,460	707,763
Total Project Cost	754,460	754,460	707,763

KEY DATES

Approval	Effectiveness	Original Closing	Actual Closing
28-Jun-2019	17-Mar-2020	30-Sep-2021	30-Jun-2023

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
22-Sep-2021	0.41	Change in Loan Closing Date(s) Change in Implementation Schedule

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Moderately Satisfactory	Moderately Satisfactory	Modest

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	14-Feb-2020	Moderately Satisfactory	Moderately Satisfactory	0.00
02	22-Sep-2021	Moderately Satisfactory	Moderately Satisfactory	0.41
03	15-May-2023	Moderately Satisfactory	Moderately Satisfactory	0.74



ADM STAFF

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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

Context at Appraisal

1. Prior to the development of the Africa Climate Resilient Investment Facility (AFRI-RES), the United Nations Economic Commission for Africa (UNECA), through its African Climate Policy Centre (ACPC), and the World Bank (WB) collaborated on the development of two studies: (i) Enhancing the Climate Resilience of Africa's Infrastructure (ECRAI): The Power and Water Sectors (2015);¹ and (ii) ECRAI: The Roads and Bridges Sector (2016).² Both highlighted how Sub-Saharan Africa's infrastructure – or lack thereof – was a vital yet vulnerable asset in the region's economic development. The effects of climate change on existing and future long-lived infrastructure were shown to be costly. Each report promoted the integration of climate considerations into the design phase of projects to ensure they included strategies for mitigating and adapting to the impacts of climate change as a cost-saving measure over time. This was shown through scenarios created using projects from the African Union Commission's (AUC) Program for Infrastructure Development in Africa (PIDA), which was launched in 2012 to provide a common framework for African stakeholders to build the infrastructure necessary for more integrated transport, energy, information and communication technology, and trans-boundary water networks.
2. To put the recommendations of these reports into practice, the capacities of three key actors – namely project developers, project financiers and the climate science community – needed to be strengthened because the knowledge on what was needed, when in the project cycle and at what cost was fragmented. A demand analysis was carried out among these key actors, which broadly categorized the user interest into two main clusters: (i) support at the project design and preparation stages, including mobilization of technical knowledge to evaluate climate risks and the incremental cost of building projects in a climate-resilient way; and (ii) upstream support in the form of knowledge, guidelines and good practices to inform sector and project planning (See Annex 4).
3. In this context, AFRI-RES was conceived in 2017 as a partnership between WB, UNECA and AUC with a view to strengthen Africa's capacity to systematically integrate climate change considerations into the planning and design of long-lived investments through the establishment of a center of technical competence and excellence that would assist governments, planners and private developers. The initiative was anchored in five pillars: (i) project-level technical assistance; (ii) outreach, dissemination and training; (iii) guidelines, standards and good practice notes; (iv) climate knowledge and data portal; and (v) overall coordination, management and quality assurance. This grant pertains to two of these five components (ii) outreach, dissemination and training, and (iv) climate knowledge and data portal, which were implemented by UNECA (Project Implementation Agency) through its African Climate Policy Centre (ACPC), in collaboration with the African Union Commission, given their comparative advantage in this space.
4. The Grant No. TF0B0649 to UNECA was approved on March 17, 2020. At the time of the grant preparation and appraisal, UNECA served Regional Economic Communities, governments and communities across Africa. It was

¹ Cervigni, Raffaello; Liden, Rikard; Neumann, James E.; Strzepek, Kenneth M.. 2015. Enhancing the Climate Resilience of Africa's Infrastructure: The Power and Water Sectors. Africa Development Forum. Washington, DC: World Bank. <https://openknowledge.worldbank.org/entities/publication/6c6785aa-2f8f-56dc-876a-0daabb0466ee>

² Cervigni, Raffaello; Losos, Andrew Michael; Neumann, James L.; Chinowsky, Paul. Enhancing the climate resilience of Africa's Infrastructure: the roads and bridges sector (English). Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/270671478809724744/Enhancing-the-climate-resilience-of-Africa-s-Infrastructure-the-roads-and-bridges-sector>



actively working with stakeholders and partners to address Africa’s climate challenges and engage high level policy makers, particularly ministers of finance and economic planning, the African Group of Negotiators on climate change, and various other high-level constituencies. This would enable UNECA to deliver training and products customized to meet the specific needs of the end-users located in Africa, ultimately achieving the grant's primary objectives.

5. The grant aligned with the WB’s commitment to the Africa Climate Business Plan (ACBP).³ Drawing on the two ECRAI studies, the ACBP emphasized how proper integration of climate change in the planning and design of infrastructure investments could significantly reduce the risk posed by climate to the physical and economic performance of hydropower and irrigation investments. The grant took the results and methods developed in ECRAI forward and enabled their application in Africa. The proposed grant also contributed to the World Bank’s corporate goals through its focus on strengthening the capacity of African institutions to integrate climate change in project planning and design and its emphasis on fostering environmentally and socially sustainable development in Africa. Moreover, the grant was aligned with WB regional integration objectives to enhance capacity building and support mainstreaming of climate risks into future investments across the region.

Project Development Objectives (PDOs)

6. The Project Development Objective (PDO) is to raise awareness and support government actors, planners and private developers in Africa with tools and capacities to integrate climate change in project planning and design.

Key Expected Outcomes and Outcome Indicators

7. The grant had one outcome: The awareness raised and capacity built within government actors, planners, and private developers in Africa to integrate climate change in project planning and design.
8. The PDO-level indicators were as follows:
 - a. Number of beneficiaries (institutions, agencies, practitioners, including women) with enhanced capacity on climate resilience data and information to inform investment decision-making: AFRI-RES will enhance knowledge and access of quality assured data, information and tools for climate resilient project planning and design.
 - b. Number of region-specific climate datasets, tools or models available through the open access climate portal as a result of support from this project: AFRI-RES will host an updated climate data portal, with open access to all users and available for incorporation of climate change data into investment planning in Africa.

Components

9. Through the following two components, the grant aimed to collect, curate and promote credible climate information that was backed by appropriate modelling tools and guidance and supported by dedicated institutions in order to better inform policy and development planning: (i) outreach, dissemination and training (estimated US\$M 0.53); and (ii) climate knowledge and data portal (estimated US\$M 0.22).

Component 1: Outreach, Dissemination and Training

³ World Bank. 2020. The Next Generation Africa Climate Business Plan: Ramping Up Development-Centered Climate Action. <https://openknowledge.worldbank.org/entities/publication/e44b41cc-9835-5acb-bce5-d5718bccb7bb>

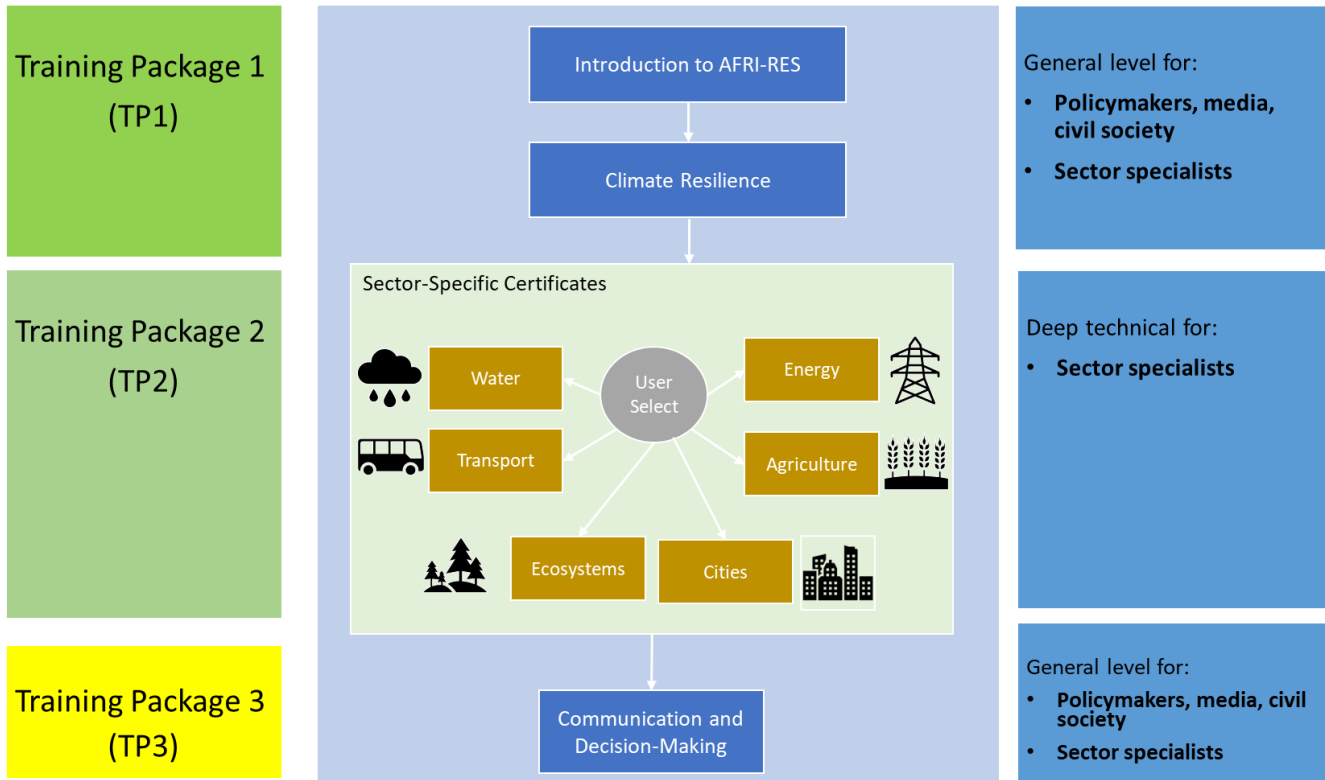


10. Under this component, the Project Implementing Agency (PIA) – UNECA – was meant to undertake activities to encourage behavioral change in climate-resilient investment planning. More specifically, the PIA was to conduct trainings, workshops and seminars with key stakeholders⁴ in various locations across Africa, with a view to identifying sectoral capacity needs, setting up the knowledge base to fulfil capacity needs, delivering targeted communication and outreach materials, as well as establishing and consolidating the client base. These were to include:
- a. Training and learning package on tools for integration of climate resilience in hydropower development.
 - b. Training workshop for decision makers and practitioners on the use and application of tools and methods for climate resilient investments.
 - c. Workshop on climate finance and risk transfer instruments for enhanced resilient investments in key sectors.
 - d. Workshop on integration of climate resilience into projects from the second PIDA Priority Action Plan (PIDA-PAP 2).
 - e. Training workshop for energy planners in African energy institutions.
 - f. Regional workshop to review and validate climate data and models for Africa.
 - g. Partnership framework meeting for data and information sharing for the AFRI-RES portal.
 - h. Leveraging high-level platforms to promote AFRI-RES and paradigm shift for climate resilient investments (e.g., United Nations Framework Convention on Climate Change [UNFCCC] Conference of Parties, UNECA Annual Conference of Ministers of Finance and Planning, Africa Regional Forum on Sustainable Development, African Union Summit).
11. The implementation of this component had to change to adhere to the COVID-19 regulations that were in place at the time. For this reason, a hybrid training programme was developed that incorporated several of the planned workshops and trainings instead of the full range of in-person events that were envisioned at the outset of the grant. The hybrid training programme on climate resilient investments was implemented across three packages:
- a. **Training Package 1** (online delivery) focused on: (i) introduction to the AFRI-RES programme, (ii) introduction to climate modelling, and (iii) understanding climate resilience and the management of climate risks;
 - b. **Training Package 2** (online and in-person delivery) focused on integration of climate resilience in investments in key sectors – agriculture, energy, water, transport, ecosystems, and cities; and
 - c. **Training Package 3** (online delivery) focused on: (i) communicating climate change and resilience, and (ii) understanding climate finance.

⁴ Partners enlisted for collaboration in the delivery of this component include, but are not limited to, UNECAs network of: (i) 54 Member States; (ii) 8 Regional Economic Communities (REC); (iii) African Regional Climate Centres; (iv) River Basin Organizations; (v) AUC; (vi) International Hydropower Association; (vii) Africa Partnership Facility for NDCs; and (viii) NDC Partnership.



Figure 1: Overview of AFRI-RES Hybrid Training Program



12. This programme was done in collaboration with Industrial Economic Inc (the service provider) and UNECA’s Institute for Economic Development and Planning (IDEP) based in Dakar, Senegal. The full training programme was uploaded on IDEP’s eLearning platform: (<https://elearningidep.uneca.org/local/staticpage/view.php?page=nvcours-en>).

Component 2: Climate knowledge and data portal

13. Under this component, the PIA was to develop and maintain an online repository of relevant knowledge, tools and communication products for climate-resilient investment planning and design in Africa. This component covered two main activities: (i) consulting services (e.g., develop conceptual design and detailed workplan for data portal; develop and deploy data portal; prepare pilot datasets and populate data portal; prepare tools and pilot guidelines and populate data portal); and (ii) hosting and maintenance of the AFRI-RES climate and data portal (e.g., operate and maintain data portal; manage and administer climate data sets regularly; manage and administer guidelines regularly; manage and administer information and knowledge products regularly). The portal was also intended to point users to various providers of data and tools – including the Nationally Determined Contributions (NDC) Partnership Knowledge Portal and the WB Climate Change Knowledge Portal – and establish user Communities of Practice with various special interests. The portal would also serve as a communication and promotion channel for AFRI-RES.

II. OUTCOME

Assessment of Achievement of Each Objective/Outcome

14. The PDO indicators, intermediate indicator targets, and their respective degree of achievement are summarized in Table 1.⁵ They reflect the challenging circumstances under which the project became effective, as well as the workarounds that were implemented to reach their actual achievement levels. Overall, the PIA was able to successfully deliver on half of the indicators, overdelivering on two of them. The remaining indicators were partially met, and the reasons for which are outlined in Section III.

Table 1: PDO & Intermediate Indicators with Their Degree of Achievement

INDICATOR	UNIT	BASELINE	TARGET	ACTUAL	DEGREE OF ACHIEVEMENT
PDO Indicators					
Beneficiaries (institutions, agencies, practitioners, including women) with enhanced capacity on climate resilience data and information to inform investment decision-making	Number	0	250	139	56%
Region-specific climate datasets, tools or models available through the open access climate portal as a result of support from this project	Number	0	10	16	160%
Intermediate Indicators					
Delivery of upstream awareness-raising activities intended to enhance understanding of public and private sector decision-makers	Number	0	3	3	100%
Delivery of in-depth technical workshops targeting practitioners and intended to support robust decision-making, access to finance, technology transfer and capacity-building	Number	0	4	3	75%
Communication and outreach materials produced for the capacity building activities	Number	0	6	7	117%
Tools, models and pilot guidelines are prepared and populated in the data portal	Binary	N	Y	Y	100%
Hits to open access climate data portal	Number	0	500	0	0%

⁵ It should be noted that this section of the Implementation Completion Results Report relies on data and information collected and provided by the grant recipient.



Downloads of multi-media knowledge products available in the portal to support climate resilient infrastructure investment planning	Number	0	100	0	0%
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Component 1: Outreach, Dissemination and Training

15. Given that the grant became effective at the height of COVID-19 movement restrictions, the original plan to host in-person trainings had to be adapted to the new reality. A hybrid (2/3 virtual, 1/3 in-person) training programme was developed in its place, allowing the PIA to meet the majority of the PDO and Intermediate indicators associated with this component. The 139 beneficiaries listed in the first PDO indicator reflect the: (i) 70 people that successfully completed the two online portions of the hybrid training package; (ii) 52 people that successfully completed the full hybrid training package; and (iii) 17 people that completed the PIDA-PAP 2 training. The target number of beneficiaries was reached with the initial number of people who signed up to participate in the training programme in addition to those that signed up to participate in the PIDA-PAP 2 training, but a number of them weren't able to complete the training programmes as planned for several reasons. The main one being that the trainings weren't translated into French, which limited participation from the West Africa region. The online training programme was designed as a modular training. Training Package 2 included modules that were sector-specific. Consequently, participants did not have to complete all of them.
16. Through the development of a hybrid training package, the PIA was able to deliver the majority of the agreed upon technical workshops under the second intermediate indicator (i.e., Delivery of in-depth technical workshops targeting practitioners and intended to support robust decision-making, access to finance, technology transfer and capacity-building) except for the training workshop for energy planners in African energy institutions. The latter training was organized by the World Bank after the grant closure in September 2023. Consequently, it was marked as not completed, but the PIA was fully involved in the coordination and selection of participants.
17. The targets set in the intermediate indicators related to AFRI-RES awareness raising and communications materials were either met or surpassed. The PIA delivered three upstream awareness-raising events at the: (i) Seventh PIDA Week; (ii) UNFCCC Conference of Parties; and (iii) Africa Sustainable Development Forum. They also collaborated on the organization of the all the Africa Climate Resilient Investment Summit (ACRIS) events during the implementing period.
18. More communications materials than expected were produced in a variety of formats for awareness-raising events as well as the trainings. The principal communications assets included: (i) four podcasts; (ii) two videos showcasing project achievements; and (iii) one article about the PIDA-PAP 2 training published on the UNECA website.

Climate Resilient Investment Hybrid Training Programme

19. Over 290 French and English-speaking individuals (100 female and 191 male) enrolled in the AFRI-RES training programme. About 70 participants completed over 50 percent of the training programme, while 52 of them (25 female and 27 male) successfully completing the full training covering all three training packages. The in-person component of the second training package was delivered at IDEP in Dakar, Senegal from 10 – 12 October, 2022.

20. The independent evaluation found this to be a highly valued training programme with the potential for long-term impact. Participants consistently noted that the training materials were useful and detailed, and they added that they frequently refer to the resources in the context of their professional engagements. It suggested that there could be potential for scaling-up and developing additional training initiatives given the quality and breadth of the materials, including through partnerships with academic institutions to create new courses.
21. This programme also impacted the decision-making abilities of participants as several noted that they were able to directly apply the teachings. For instance, one participant wrote that they were able to lobby for and participate in the elaboration of a flood response plan in their country, saying: “Last year in November, my team and I developed a scope to tackle the flooding that is always recurrent, and we managed to set aside some emergency response strategies with United Nations Development Programme for our intervention whenever a flood happens. Indeed, it is going well this year, and we are closely monitoring so that our resilience approach can be made effective.” Through this training, the PIA was also able to connect a participant from Cameroon with the Cameroon Land, Energy, and Water Systems (CLEWS) project, who reportedly contributed to proposing a framework for climate adaptation within the initiative and is currently engaged with the CLEWS project team volunteering as an external consultant in data collection engagements for rainfall measurement.

PIDA-PAP 2 Training

22. The ACPC and the Infrastructure Section of the Private Sector Development and Finance Division of UNECA, in collaboration with AUC, African Union Development Agency (AUDA-NEPAD), and IDEP developed and delivered a multiple day, in-person training programme on the integration of climate resilience in PIDA-PAP 2 projects. The training programme consisted of six modules covering the hydropower and transport sectors. The training programme was delivered from 29 November – 1 December, 2022 at IDEP in Dakar, Senegal. The beneficiaries consisted of 17 participants from AUC, AUDA-NEPAD, regional economic communities (RECs), as well as country focal points for PIDA-PAP 2 projects. Although only one participant from this training responded to the independent evaluator’s survey, it should be noted that the overall feedback from the training was positive. An interview with AUDA-NEPAD revealed expectations of diving deeper into practical examples from sectors following the introductory nature of the first two sessions.

Outreach and awareness

23. Prior to the grant becoming effective, the PIA participated in the organization and execution of several high-level events on behalf of the AFRI-RES Programme. Once the grant became effective five outreach events were strategically held to promote the AFRI-RES programme and its outputs. These included high-level side events at the UNFCCC Conference of Parties and important regional climate events, including the Africa Regional Forum for Sustainable Development. A full list of the events mentioned can be found in Table 2. It should also be noted that AFRI-RES was featured prominently in many of the speeches made by the UNECA Executive Secretary throughout the grant period.

Table 2: AFRI-RES Events

PRE-GRANT APPROVAL			
Event name	Date / location	# of attendees	Attendee breakdown
ACRIS I – Whole Event	Addis Ababa, Ethiopia,	245	31



	April 27 – 29, 2015		
ACRIS II – Whole Event	Addis Ababa, Ethiopia, April 20 – 21, 2016	218	30
1 st Specialized Technical Committee on Transport, Infrastructure, Intercontinental and Interregional Infrastructure, Energy and Tourism	March 13 – 17 2017, Lomé, Togo	55	20
UNFCCC Forum of the Standing Committee on Finance	September 6-7, 2017 Rabat, Morocco	75	30
Global Green Growth Week	October 17 – 20 2017, Addis Ababa, Ethiopia	40	15
ACRIS III – Whole Event	Addis Ababa, Ethiopia, Feb 27 – 28, 2018	172	41
Conference of African Ministers of Finance and Planning	May 11 – 15 2018, Addis Ababa, Ethiopia	50	20
2 nd Africa Climate Talks	March 22 – 23 2018, Addis Ababa, Ethiopia	170	40
COP 24 – Side Event	December 2-14, 2018 Katowice, Poland	40	10
ACRIS IV – Whole Event	March 5-7, 2019 Johannesburg, South Africa	164	49
Africa Climate Risks Conference (ACRC) – Side Event	October 7-9, 2019 Addis Ababa, Ethiopia	60	20
DURING GRANT			
Event name	Date / location	# of attendees	Attendee breakdown
7 th PIDA Week	February 28 – March 4, 2021 Nairobi, Kenya	35	10
ACRIS V – Whole Event	June 16-17, 2021	687	192



	Virtual		
COP 26 – Side Event	October 31 – November 12, 2021 Glasgow, Scotland	40	15
Africa Regional Forum on Sustainable Development – Side Event	February 25-28, 2022	45	20
COP 27 – Side Event	November 6-18, 2022 Sharm El-Sheik, Egypt	65	25

24. A communications consultant was hired for the final eight months of the grant to produce communications and knowledge management products to increase the awareness of AFRI-RES, as well as enhance the uptake of its products.

Component 2: Climate knowledge and data portal

25. The PIA was expected to deliver a data portal hosting at least ten climate-related datasets that would receive a minimum of 500 hits and 100 downloads by the end of the project. The portal was completed and made live by the end of the grant (<https://afri-res.uneca.org/>). The IT Team at UNECA worked in collaboration with a consultant who developed specification documents and the conceptual design, as well as collected and curated the data for inclusion. The portal currently contains 16 datasets on various aspects of the AFRI-RES sectors (agriculture, water, transport, energy, ecosystems) for all 54 African countries (i.e., Region-specific climate datasets, tools or models available through the open access climate portal as a result of support from this project). However, the current specifics of the portal do not allow tracking hits and downloads. A post grant evaluation of the web traffic found that there were a total of 19,180 hits (average of 615 per day) between November 26 and December 27, 2023. There were also 533 different documents downloaded.



Overall Outcome Rating

26. **The overall outcome rating is Moderately Satisfactory.** The PIA was able to partially raise awareness and build the capacity of government actors, planners and private developers in Africa to integrate climate change in project planning and design through 3 out of the 4 trainings and workshops (i.e., component #1) before project closure. The remaining training was organized by the World Bank in September 2023 (after the grant closure). The number of beneficiaries with enhanced technical capacities from trainings and workshops was lower than expected yet the awareness raised on the need for considering climate change in project design through events and communications materials was either on target or above it. The portal was completed and made live by the end of the grant (<https://afri-res.uneca.org/>). Although the current specifics of the portal do not allow tracking hits and downloads (the two indicators that were not achieved), a post-grant evaluation of the web traffic found significant activity.

Other Outcomes and Impacts

27. The grant did not achieve additional outcomes or impacts.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

Preparation modality

28. There were delays in the start of the grant as there were difficulties in finding a modality that would allow the WB to transfer funds to UNECA, as well as meet both organizations' requirements. From the WB side, it was noted that one of the main difficulties was that it wasn't clear how funds could be transferred to the PIA because it is a UN agency rather than a company. It was eventually agreed to use the UN Framework Agreement. Afterwards, the grant had to be established as a recipient-executed trust fund, which meant that it had to go through the project cycle and meet environment and social safeguards as well as other standards. This process was also said to have been lengthier than usual since this was not a traditional project given its focus on capacity building and development of knowledge products. Furthermore, the PIA raised several additional exemptions to the framework that required additional time to remedy. These delays shortened the PIAs initial implementing time by half.

Design

29. The PIA terminal evaluation report found the grant's PDO to be highly relevant given the outsized impact of climate change on the Africa region, as well as its alignment with country and regional-level strategic goals like the NDCs, African Union's Agenda 2063 and the Sustainable Development Goals. It also suggested that the indicators selected were mostly appropriate at the project design phase and useful for measuring progress and achievements. However, it was noted that some of the indicators lacked specificity, which negatively impacted their measurability. For instance, the number of beneficiaries in PDO indicator #1 includes entities (institutions, agencies) and human beings (practitioners and women). This issue also appears for the number of region-specific datasets and communication and outreach materials.



COVID-19, procurement and no-cost extensions

30. The grant became effective at the start of the COVID-19 pandemic (June 2020) which affected the delivery of the in-person trainings. The WB and UNECA teams discussed at length how best to take advantage of the opportunity the COVID-19 pandemic provided them and decided to pivot the in-person trainings and technical workshops toward something more innovative. It was agreed in December 2020 at the first implementation support mission to move forward with a blended training program that would deliver most of the trainings online along with a certificate of completion, as well as allow for the possibility of holding in-person workshops should the COVID-19 restrictions change to allow for international travel and larger in-person gatherings.
31. In addition to overcoming COVID-19 restrictions, the PIA also had to resolve internal procurement delays for the climate data portal, as well as with contracting firms and individuals to implement both components.
32. The combination of these challenges in addition to the shortened implementation period made it so that the PIA required additional time to implement the agreed-upon activities, which was estimated to be one year from the original closing date. An additional three months were included as a buffer against any additional delays, taking the new closing date of the project to December 30, 2022. A retroactive, no-cost extension was processed at the start of 2023 to allow the PIA an additional six months to complete and finalize climate data portal. The portal was finalized and made live prior to the end of the grant (<https://afri-res.uneca.org/>).

Exchange rate fluctuation

33. The holding currency for the overall AFRI-RES project is euros, however, this grant was issued in US dollars. During the grant period, the US dollar strengthened against the euro, reaching parity in July 2022. Its position has since weakened slightly. This fluctuation left UNECA with a shortfall of around USD 66,135, which limited their ability to complete some activities. The WB Team conducted a budget review and offered to contract services for one training that was not deployed. The training for energy planners was organized by the World Bank in September 2023 with funds from the other AFRI-RES components.

Partnerships & UNECAs convening power

34. The convening power and brokering function that UNECA offered in the region created entry points for building on the partnership formed through AFRI-RES. The convening power and brokering function were particularly useful in the awareness raising activities, as the PIA was able to easily procure time at high-level events and ensure that events were well-attended. Similarly, UNECAs connection to other regional organizations facilitated the sharing of information, knowledge and skill pooling that allowed for synergies and coherence of some project activities.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

Supervision

35. Over the course of the grant period there were several changes to the core WB team that supported AFRI-RES. The Task Team Leader (TTL) and Financial Management Specialist overseeing the grant's



implementation changed three times. It should be noted that one of the former TTLs continued to support the project but in the capacity of one of the Technical Leads. The Procurement Specialist and part-time support of a short-term consultant remained consistent throughout. While there weren't any major drawbacks to these changes as the handover processes were observed, it potentially affected project coherence.

36. The core WB team conducted virtual implementation support missions with the UNECA team at six-month intervals during the grant period (5 total). In addition to these meetings, there were monthly touch base calls with the PIA between November 2021 and June 2022 with the Procurement and Financial Management specialists. These regular calls were established to help enhance the implementation of the grant by creating a time where the PIA could ask questions about procurement, fiduciary responsibilities, and potential communications collaborations. It was also a time for them to provide an update on the progress that had been made thus far. Nevertheless, the change in Task Team Leader and Procurement Specialist affected the project continuity. As such, **The Bank Performance is rated Moderately Satisfactory.**

Procurement & fiduciary management

37. The grant procured services in accordance with the requirements set forth in the "World Bank Procurement Regulations for IPF Borrowers" dated July 2016, revised November 2017 and August 2018 ("Procurement Regulations"), and the provisions of the Recipient's procurement plan for the Activities ("Procurement Plan") dated March 25, 2019 and revised on February 4, 2020 provided for under Section IV of the Procurement Regulations. Procurement activities were carried out by the African Climate Policy Centre (ACPC), an entity within UNECA (PIA). The project's procurement arrangements consisted mainly of technical assistance consulting services for planning, coordinating and managing training events and workshops, producing communication products from workshops and events, and hosting and maintenance of the AFRI-RES portal for two years.
38. There were moments throughout the grant period where challenges with the established WB procurement and financial reporting processes arose. There were occasional delays in receiving both sets of reports and in the agreed-upon format. On the procurement side, it was noted that the procurement plan wasn't updated regularly and that any TORs must be cleared by the WB before they were issued. In addition, the structure of the interim financial reports (IFR) didn't align with how the PIA documents financial activities and performance. For instance, funds that are committed to a vendor are considered fully disbursed by the PIA. Additional clarification was also required on how program management support was allocated. To mitigate these issues the WB Team requested draft reports be submitted ahead of implementation support missions and they were reviewed directly with the Procurement and Financial Management specialists during that time. The Procurement and Financial Management specialists also met regularly with the PIA through touch base meetings and made themselves available via email for any ad-hoc questions/support.

Environmental and Social (E&S) Safeguards

39. The results of the project included workshops, seminars, communication materials and the data portal. Hence, the project's adverse risks and impacts on human populations and/or the environment were low. The project did not involve activities that have a potential for harming people or the environment as it focused largely on training and outreach, and the development of a climate data portal. The project did not require



further environmental and social assessment following the initial screening. The PIA monitored any potential environmental and social risks and implemented the project in line with the World Bank's E&S Standards. The project did not trigger Legal operational policies.

Monitoring and Evaluation (M&E)

40. In addition to tracking the PDO and intermediate indicators outlined in the results framework, the PIA gathered data on participants engaged in both online and in-person training sessions. However, the PIA did not establish a M&E system to consistently monitor individuals who completed the online training after the grant closure and assess the impacts following the delivery of the training sessions. The PIA prepared an assessment with online and phone interviews with a sample of beneficiaries as part of the PIA terminal evaluation report (28 online surveys were responded by grant beneficiaries and 9 follow up calls were conducted). Consequently, **the M&E Quality is rated Modest.**

V. LESSONS LEARNED AND RECOMMENDATIONS

41. **Choose grant modality beforehand.** With organizations like UNECA, sort out the modality beforehand or involve OPCS earlier in the process to reduce delays. The PIA terminal evaluation report suggested creating a memorandum of understanding, if feasible.
42. **Improved project design.** While the project design was commendably based on robust diagnostics, future projects should place an even greater emphasis on refining the theory of change. This involves establishing clear linkages between activities, outputs, and long-term outcomes and setting forth measurable and specific indicators from the outset.
43. **Flexible design.** The project was able to fully or partially meet its PDO and Intermediate indicators despite COVID-19 hindering its implementation because the team and project design remained open to finding workarounds. The project adjusted to the on-the-ground realities, and the willingness of institutions to collaborate was crucial.
44. **A dedicated and consistent team is essential from both the WB and implementing partner's sides.** There should be seamless transitions for staff within WB teams and implementing agencies. Thoughtful planning, incorporating ample time for transitions, becomes crucial to guaranteeing not only a smooth handover but also ensuring the necessary overlap for effective knowledge transfer and continuity.
45. **WB and PIA teams should allocate enough resources for the categories defined in the grant agreement.** The latter one had two 1) Consulting services, Training, and Workshops, and 2) Operating costs. Reasonable amounts should be allocated to each category to avoid constant overdraw issues during implementation.
46. **Consider training usability and sustainability.** Any future trainings should have both an English and French version available at the start to ensure the maximum number of users can participate. Furthermore, the inclusion of as many practical examples as possible should be considered through the consultations with stakeholders during the preparation of materials. Lastly, there should be a more robust mechanism to follow-up with participants from trainings to increase the sustainability of the project.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Raise awareness and build the capacity of government actors, planners and private developers in Africa to integrate climate change in project planning and design.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of beneficiaries (institutions, agencies, practitioners, including women) with enhanced capacity on climate resilience data and information to inform investment decision-making	Number	0.00 21-Jan-2019	250.00 17-Mar-2020	250.00 17-Mar-2020	139.00 30-Jun-2023

Comments (achievements against targets):

The online training programme was fully developed and successfully implemented: 52 individuals successfully completed the full online training covering all three training packages, 70 individuals completed over 50% of the training programme, and 17 individuals completed the workshop and training on the integration of Climate Resilience in PIDA-PAP 2 projects.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
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Number of region-specific climate datasets, tools or models available through the open access climate portal as a result of support from this project	Number	0.00	10.00	10.00	16.00
		21-Jan-2019	17-Mar-2020	17-Mar-2020	30-Jun-2023

Comments (achievements against targets):

16 databases on various aspects of the AFRI-RES sectors (climate, energy, water, transport, ecosystems) for all 54 African countries were collected and uploaded in the portal. The portal has been completed and is already live <https://afri-res.uneca.org/>

A.2 Intermediate Results Indicators

Component: Outreach, dissemination and training

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Delivery of upstream awareness-raising activities intended to enhance understanding of public and private sector decision-makers	Number	0.00	3.00	3.00	3.00
		21-Jan-2019	17-Mar-2020	17-Mar-2020	30-Jun-2023

Comments (achievements against targets):

The Africa Climate Resilient Investment Summit (ACRIS), AFRI-RES event at COP27, AFRI-RES Development Partner Roundtable on April 11, 2023 undertaken on the sidelines of the World Bank Spring Meetings. UNECA was involved in the organization of various ACRIS. The latter Summit was carried out with financing from other AFRI-RES components that are part of the overall program.



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Delivery of in-depth technical workshops targeting practitioners and intended to support robust decision-making, access to finance, technology transfer and capacity-building	Number	0.00 21-Jan-2019	4.00 17-Mar-2020	4.00 17-Mar-2020	3.00 30-Jun-2023

Comments (achievements against targets):

The full online training programme was completed and accessed by over 290 individuals. The in-person training component of the second training package (TP2) was conducted at IDEP in Dakar, Senegal between October 10 and 12, 2022. The in-depth training on integration of climate resilience in PIDA-PAP 2 projects was successfully delivered from November 29 to December 1, 2022 at IDEP in Dakar, Senegal.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of communication and outreach materials produced for the capacity building activities	Number	0.00 21-Jan-2019	6.00 17-Mar-2020	6.00 17-Mar-2020	7.00 30-Jun-2023

Comments (achievements against targets):

4 podcasts were created, two main videos showcasing project achievements, and one article about the PIDA PAP 2 training published in the UNECA website.

Component: Climate knowledge and data portal



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Tools, models and pilot guidelines are prepared and populated in the data portal	Yes/No	N 01-Apr-2019	Y 17-Mar-2020	Y 17-Mar-2020	Y 30-Jun-2023
Comments (achievements against targets): Data, tools, and guidelines were published in the AFRI-RES portal https://afri-res.uneca.org/					
Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of hits to open access climate data portal	Number	0.00 21-Jan-2019	500.00 17-Mar-2020	500.00 17-Mar-2020	0.00 30-Jun-2023
Comments (achievements against targets): This indicator started to be measure after the grant closed on June 30, 2023. Consequently, it was marked as not achieved. The numbers achieved after the grant closure were included in the ICR.					
Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of downloads of multi-media knowledge products available in the portal to support climate resilient infrastructure investment planning	Number	0.00 21-Jan-2019	100.00 17-Mar-2020	100.00 17-Mar-2020	0.00 30-Jun-2023



Comments (achievements against targets):

This indicator started to be measure after the grant closed on June 30, 2023. Consequently, it was marked as not achieved. The numbers achieved after the grant closure were included in the ICR.



B. ORGANIZATION OF THE ASSESSMENT OF THE PDO

Objective/Outcome 1	
Outcome Indicators	<ol style="list-style-type: none"> 1. Beneficiaries (institutions, agencies, practitioners, including women) with enhanced capacity on climate resilience data and information to inform investment decision-making 2. Region-specific climate datasets, tools or models available through the open access climate portal as a result of support from this project
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. Delivery of upstream awareness-raising activities intended to enhance understanding of public and private sector decision-makers 2. Delivery of in-depth technical workshops targeting practitioners and intended to support robust decision-making, access to finance, technology transfer and capacity-building 3. Communication and outreach materials produced for the capacity building activities 4. Tools, models and pilot guidelines are prepared and populated in the data portal 5. Hits to open access climate data portal 6. Downloads of multi-media knowledge products available in the portal to support climate resilient infrastructure investment planning
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<p>Component 1:</p> <ol style="list-style-type: none"> 1. Climate resilient investment hybrid training programme 2. PIDA PAP 2 training



3. Five awareness raising events

4. Seven communications and outreach materials

Component 2:

1. Climate data and knowledge portal containing 16 distinct datasets



ANNEX 2. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Actual at Project Closing (US\$M)	Percentage of Approval (US\$M)
Outreach, dissemination and training	0.53	0.56	106
Climate knowledge and data portal	0.22*	0.14*	64
Total	0.75	0.70	93

* *Note:* This contains administration costs.



ANNEX 3. RECIPIENT, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

Executive summary of independent evaluation

The United Nations Economic Commission for Africa (UNECA), through its Technology, Climate Change and Natural Resources Management Division (TCND), and under Grant No. TF0B0649 From the Nordic Development Fund, via a World Bank Group Management Trust Fund, designed and implemented the project Africa Climate Resilience Investment Facility to support climate adaptation efforts in African infrastructure investments and policy-making in key sectors such as Energy, Water, Agriculture, Cities, Transport, and Ecosystems. The project cost a total amount of EUR 700,000 and was approved in June 2019, entered into force in June 2020, and was thus implemented from June 2020 to June 2023.

The overall objective of the evaluation is to provide a multidimensional assessment of the project performance against its objectives, and performance indicators, as described in the project document. The evaluation analyzed the intended and unintended results of the intervention. More specifically, the evaluation assessed the project's relevance, coherence, effectiveness, impact (likelihood of), efficiency, and sustainability. In addition, the evaluation reviewed the mainstreaming of relevant issues of gender, human rights, disability inclusion, and environment.

As for the final purpose of the evaluation, the final deliverable focused on accountability and learning and present lessons of experience and recommendations from the key findings collected from various sources of evidence. More particularly, regarding accountability, the evaluation analyzed whether the project was designed to support its goal and adequately managed for results. The final report provides an account of the project activities to the financier and development partner. Moreover, in terms of learning, the evidence from the evaluation will be used for decision-making to improve future project design, implementation, and results.

Evaluation approach

This is a theory-based single-project evaluation of a 3-year intervention using quantitative and qualitative methods and strongly emphasizing triangulation. The theory-based evaluation process was guided by the project's theory of change (ToC). More specifically, the evaluator analyzed this program theory using various data collection points to determine whether the project's theory of change and results chain was realized in practice. More importantly, the evaluation analyzed ToC's underlying assumptions guiding the expected success of the theoretical design. This analysis, throughout the evaluation process, assessed whether those assumptions held in practice and why or why not. The assessment uses a 6-level rating scale from highly unsatisfactory (rating 1) to highly satisfactory (rating 6). The evaluation report is evidence-based – grounded in the analysis of the program theory – and presents the main summary findings from the assessment of the six critical activities implemented to target various beneficiary groups, whether they produced the expected results and change, and why or why not. As an intermediary product, the consultant debriefed the critical stakeholders on preliminary evaluation findings and received feedback and comments. This intermediary process served as a building block for preparing the draft and final reports.

Key findings and conclusions

The relevance of the project is highly satisfactory because it aligns with the priorities of beneficiaries at



various levels. On the continental level, the question of climate adaptation is a priority as the impact of climate change, especially on the most vulnerable, is a major concern to decision-makers. This finding is supported by the high commitment of African countries to implement the Nationally Determined Contributions. On the regional level, the focus of the project on supporting ongoing infrastructure development initiatives such as the African Union Development Agency – New Partnership for Africa’s Development’s (AUDA-NEPAD) Programme for Infrastructure Development in Africa (PIDA) initiative enhanced its relevance to regional entities such as sub-regional organizations engaged in transnational infrastructure projects with expressed interest for built-in resilience, which facilitates financial attractiveness and implementation support. When it comes to high-level strategic documents at continental (AU⁶ Agenda 2063) and global (UN⁷ SDGs⁸ 2030) levels, the project showed alignment with instrumental pillars of those strategies, in particular those regarding the resilience of poverty response efforts, hunger, cities, resilience capacity building, as they include strong climate adaptation orientations. In terms of the project’s relevance of design, the inception activities included efforts to assess the root of the matter, building upon the 2015 diagnostic ECRAI⁹ report drafted assessing the magnitude of the infrastructure gap in Sub-Saharan Africa (SSA), the threat of climate change to the investment efforts made and recommend urgent actions.

Furthermore, the project design developed a relatively strong theory of change underlying the project’s activities, outputs, and outcomes with room for improvement regarding clarifying the linkages from activities to long-term outcomes and distinguishing between the various stages of the intervention. In addition, the project design identified indicators at inception that were mostly appropriate and useful in assessing progress and achievements, with opportunities for improvement harnessed by the consultant to propose strategies to improve specificity and measurability. Finally, the project’s flexibility through continuous policy dialogue and in the face of COVID-19 helped alleviate the enormous risk that was then posed to its successful implementation.

Regarding coherence, the project is moderately satisfactory due to its mobilization capacity internally and externally, with some inefficiencies induced by some confusion from new entrants regarding roles, responsibilities, and scope in the relationship framework. More specifically, the project mobilized various profiles and departments within the ECA and external consultants mandated by the ECA to integrate the organization’s roster during the project. The project also brought together various external stakeholders who joined forces and exploited their complementarities. For example, the World Bank and the Nordic Development Fund (NDF) benefited from the political pulling power and operational experience of the ECA on the continent, especially with the IDEP experience in capacity building and its access to a motivated capacity-building audience – from previous training initiatives - with potential for impact under certain conditions. The efforts to keep dialogue ongoing - through the leadership group meetings and restricted touch base meetings - remain an important highlight of the coherence features of the project, but several stakeholders, especially the consultants and institutional beneficiaries, pointed to some confusion at the inception of collaborations as to the role of certain partners which proved - a bit late in the process - to be

⁶ Africa Union

⁷ United Nations

⁸ Sustainable Development Goals

⁹ Enhancing the Climate Resilience of Africa's Infrastructure



important entities to consider in the decision-making and delivery processes.

The project performance is satisfactory when it comes to effectiveness with the delivery status in terms of capacity building, communication, and portal development. In fact, the project delivered four out of 5 expected outputs across two major awareness-raising and training activity types: the activities targeting primarily decision-makers and those targeting primarily practitioners. In communication, the project was delivered beyond the set expectations despite challenges in measuring effectiveness due to the nature of the indicators selected at inception. In fact, some indicators were too broad, which affected measurability. The weakest performance area concerned the portal development, which was developed as expected but has some core tracking features not yet available and reportedly planned for a second phase. Moreover, the portal has not yet been launched as the development team is still waiting for a final sign-off from the AFRI-RES project team. Furthermore, the achievement of outputs was facilitated by some factors, including the expertise of the legacy training expert and the collaboration with IDEP. Factors that have adversely affected the greasing of the AFRI-RES machinery thus impeding smooth operation and optimal delivery performance, concerned internal coordination vis-à-vis external partners and clarifying work scope and collaboration implications at inception to avoid instability in the implementation process.

Two main lines of evidence support the moderately satisfactory rating of the likelihood of impact of the project. First, the timeframe, despite being too soon for impact assessment, the consultant collected evidence of beneficiaries already acting as agents of change in their respective environments. Second, the quality and breadth of the training materials developed presents a potential for economies of scale with eventual additional training initiatives. One option to make this happen is through partnerships with academic institutions with the development of new courses. However, other lines of evidence regarding impact always display limited certitude regarding translating current hints into practical impact in the future. For example, the changes made by project participants are impressive but circumscribed in terms of scale and political legitimacy.

Another example is the important potential for change with the PIDA component of the initiative, which was also limited in terms of the practicality of the sessions using the PIDA project. The delays encountered, including due to COVID-19, made application to project design during the training sessions no longer relevant. The selected projects that were being designed during AFRI-RES inception entered implementation by the time the PIDA training took place. Also, beyond the capacity-building achievements, the project also impacted the decision-making abilities of the participants, though the key lever for evidence-based decision-making, the portal, has not yet been deployed.

The project displayed flexibility and resilience in the face of important efficiency issues, with a delay of around 175 percent of the initial project duration – moderately unsatisfactory. Regarding project approach and cost-effectiveness, the human and financial resources were used efficiently and appear to have been cost-effectively used with important results delivered despite limited resource mobilization performance. Regarding timeliness, the project initially programmed to last 15 months was completed in 36 months. This delay is due to several endogenous factors, such as negotiations between lawyers and difficulties selecting the PIDA training beneficiaries, and exogenous factors, such as the COVID-19 pandemic.



The project sustainability rating is moderately satisfactory regarding institutional capacity development, financial sustainability, and ownership. More specifically, the project's contribution to enhancing the institutional capacity of institutional beneficiaries remains somewhat unobvious. A detailed examination reveals very little tangible evidence supporting the various institutional beneficiaries' willingness to allocate financial resources towards replicating the provided training and leading complementary efforts that could potentially augment the likelihood of sustainable effects in the long-term impact. Furthermore, while the project did take action to encourage partnerships, those actions seemingly fell short when it came to non-core partners outside the trio WBG-ECA-AUC. Also, institutional beneficiaries such as the PIDA did not feel involved in the project apart from receiving the training, which appeared to have room for alignment regarding AUDA-NEPAD's vision of such a workshop in terms of content. This constraint also affected institutional beneficiaries' sense of ownership despite commendable consultations attempts.

Gender, disability inclusion, and environment

The project addressed issues related to gender and human rights in two main ways. First, this is a climate adaptation project, and this cross-cutting theme aims to address an issue that disproportionately affects the most vulnerable, including women and disabled individuals. Secondly, the project activities involved the participation of both men and women and the reporting frameworks provided gender-disaggregated views. However, there is room for improvement regarding including community-level, gender, and vulnerability content in the legacy training. Finally, the project, by its nature, included the environmental aspects.



ANNEX 4. SUPPORTING DOCUMENTS

Integrating Climate Change Considerations into Infrastructure Planning and Investment Decisions

Executive Summary

The World Bank commissioned this study to inform the design of the Africa Climate Resilient Infrastructure Facility (AFRI-RES); a partnership between the World Bank, the Africa Union Commission, the United Nation Economic Commission for Africa (UNECA), and the African Development Bank (AfDB) with the objective to provide services to Integrate Climate Change considerations into the Planning and Design of long-lived infrastructure (ICCPD services).

This study aims to inform the design of AFRI-RES by analyzing the nature of potential demand for the facility's services and includes a survey of 154 demand-side stakeholders, and direct engagements (through a workshop, panel discussions and key informant interviews) with approximately 200 stakeholders. These draw together a robust sample of expert opinions from across Africa and all the phases of the infrastructure project lifecycle, including financiers, project developers, and engineering and scientific expert communities.

The study also assesses supply-side initiatives that either provide climate-related services for resilient infrastructure or are strategically positioned to supply such services. The study makes provisional recommendations on positioning AFRI-RES in the landscape of existing, related interventions through a desktop analysis of 23 supply side initiatives.

Ten main messages emerged from our analysis and engagement:

- 1. There are encouraging trends for supporting ICCPD services in Africa.** Globally, there is commitment, momentum and examples of a growing ICCPD services field:
 - Major financial institutions are integrating climate change into their financing and operations: At the Paris COP, twenty-six institutions with a combined value of US\$ 11 trillion on their balance sheets, adopted voluntary principles to this end, including a commitment to climate strategies; managing climate risks; promotion of climate smart objectives; improving climate smart performance and accounting for climate action.
 - National governments, notably OECD countries, are generating new data, tools and guidelines, to assess climate risks at national and sectorial levels for their energy, transport and water infrastructure.
 - Major standardization organizations such as the International Standards Organization (ISO) have developed standards for vulnerability assessment, adaptation planning, and adaptation monitoring and evaluation.
 - Development Finance Institutions (DFIs) have pioneered the use of mandatory risk screening with sophisticated screening and decision-support tools.
 - Significant improvements in the scientific understanding of climate variability and change over the African continent are needed to support operational climate services in particular contexts. However, recent breakthroughs such as the first ever simulations with a high-resolution



convection-permitting climate model, are demonstrating radical improvements in skill, which will contribute significantly to decision-relevant, robust climate information products and tools in the medium term.

2. The market for ICCPD services in Africa is big. Prioritize national governments, and Official Development Assistance

The scale of potential demand for infrastructure-related services can be disaggregated and ranked between individual countries and sectors by comparing national infrastructure intensity gaps (where infrastructure is most needed) with national enabling environments (where investments are more likely to be made) by sector. Such disaggregation gives guidance on both the scale and location of potential demand for infrastructure-related services, as well as provisional arguments for prioritization of the most promising opportunities for delivering such services. Table 1 ranks the top five recommended intervention countries per sector assessed. In this study we provide underlying quantitative analysis supporting this summary ranking.

Produced capital intensity	Urban planning and infrastructure	Irrigation infrastructure	Communications
Kenya	Mozambique	Mozambique	Kenya
South Africa	Kenya	Ghana	Mozambique
Mozambique	Tanzania	Tanzania	Zambia
Ghana	Ghana	Ethiopia	Tanzania
Zambia	South Africa	Liberia	
Electricity generation (excl hydro)	Hydropower	Transport	Insurance and social protection
Kenya	Ethiopia	South Africa	South Africa
South Africa	Angola	Namibia	Kenya
Mozambique	Nigeria	Mozambique	Ghana
Ghana	Mozambique	Zambia	Tanzania
Tanzania	Zambia		Zambia

Table 1 Recommended top priority countries for ICCPD activities. Ranking based on infrastructure intensity gaps and enabling environment analysis. Source: Vivid Economics using data from WB, FAO, OECD, IMF, Moody's, UNDESA, PIDA, IEA, and Infrastructure Africa. Note: Refer to Appendix 4 for full sectorial analysis, assumptions and caveats.

African national governments and Official Development Assistance (ODA) are the most substantial sources of investment in African infrastructure, contributing US\$34.5 billion (46%) and US\$27.9 billion (37% of total) in 2014.

This affirms the primacy of national governments (treasuries) and donors in directing infrastructure decisions on the continent and the importance of targeting ICCPD services to national governments, which are likely to be the ultimate investors. However, the relative importance of ODA appears to be decreasing as investment from national governments, China, and the private sector grows.

While the institutions involved in infrastructure decisions vary by sector and country, in most cases national treasury, national planning commissions and certain sector line ministries (e.g. energy, water, and transport) are at the nexus of planning and investment decisions.



3. Large unmet demand exists across Africa for ICCPD services

The research confirms the existence of a broad range of potential users and verifies that demand for ICCPD services exists at scale across most of the continent. 154 participants from institutions conducting work in 53 African countries responded to a survey to assess the nature of demand for ICCPD services. Some of the key messages from this survey are given in below and in Figure 1.

- 88% of respondents have an interest in ICCPD support but only 20% have secured support.
- 83% of the survey respondents indicated one or more projects that would benefit from ICCPD services.
- 67% of the respondents provided further project-specific information on support needed.

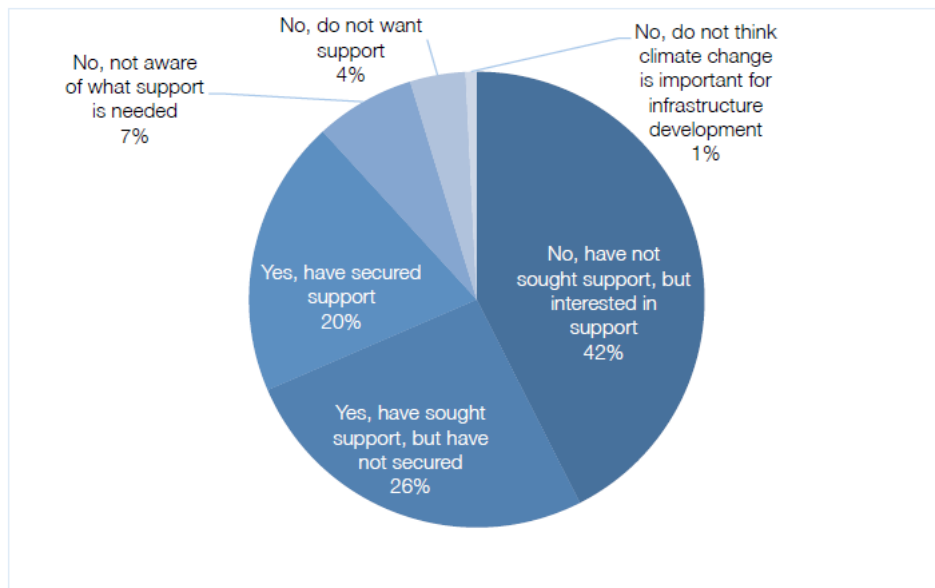


Figure 1 AFRI-RES demand survey: Responses to question: "Have you sought support to integrate climate change considerations into planning and design of long-lived infrastructure?"

The highest demand for support continues to be for readiness and accessing of climate finance.

Financing the incremental costs of adaptation remains a key challenge highlighted by many. Providing a flexible and accessible mechanism for sourcing "top up" concessional finance or ICCPD services to cover the incremental costs can be a key value-added for AFRI-RES and is likely to be in high demand. The provision of methodologies and guidelines, and training and capacity development also rank high on aggregate.

4. Awareness raising is key to establish a nascent industry for ICCPD services



Survey, interview, and stakeholder engagement data from this study confirm that while most project developers could articulate a superficial understanding of climate-related risks to infrastructure, there was generally a lack of understanding of available ICCPD services to manage risks. In many instances stakeholders were unaware of specific services and how and where they integrate with infrastructure planning, investment and design processes.

Some respondents, for instance, confused ICCPD offerings for low carbon development initiatives or did not appear to understand the difference between Environmental Impact Assessments (EIAs) and climate risk screening or adaptation analysis. Awareness raising and capacity development should be an integral early component to promote a nascent industry. Furthermore, in developing its service offering, AFRI-RES needs to consider recipients' current level of understanding and needs and tailor services that are likely to support recipients' development over time towards more complex services.

5. Project preparation facilities offer key entry points for ICCPD services

Project Preparation Facilities (PPFs) present a significant channel for infrastructure investment and hence ICCPD services, potentially accounting for up to 10% of total investment into Africa.

The supply analysis suggests significant variability in the degree to which PPFs are actively engaging the issue of climate change resilience and adaptation and see it as part of their mandate and a central factor that should inform effective project preparation. Only a couple of PPFs surveyed, like Cooperation in International Waters (CIWA) and the Climate Resilient Infrastructure Development Facility (CRIDF), are preparing standardized approaches internally to help prioritize support for projects considered to be 'climate sensitive' and identify how resilience can be built in projects as a response. More commonly, where PPFs are showing evidence of providing support to access climate finance, anecdotal experience suggests that PPFs often consider ICCPD services relatively late in the process of designing projects rather than preparing projects with the specific needs and requirements for 'bankability' of climate finance providers and adaptation in mind.

We suggest that the biggest opportunity for AFRI-RES is to play an important role in helping to nurture and support good practice within leading PPF institutions for integrated climate change risk and information at an early stage in the project life cycle. This can be done via forums such as the Project Preparation Facilities Network (PPFN), currently chaired by the Development Bank of South Africa (DBSA) and by supporting the development of appropriate tools and methodologies.

6. Support for existing African climate change and environmental research and technical assistance initiatives should be prioritized as much as possible.

There are several African climate change and environmental research and technical assistance initiatives producing research and technical assistance broadly around sustainable development, green growth, or climate compatible development. Support for these initiatives may more likely lead to appropriate and sustainable solutions for African infrastructure.

A direct focus on technical ICCPD services for infrastructure seems to be lacking across Africa. Whilst there are project examples of on demand technical assistance for integrating climate change into policy,



planning and design decisions, these are often ad-hoc, fairly small scale and on a project-by-project basis. A clear gap is the lack of sectorial initiatives aimed at catalyzing the market for ICCPD services through development and promotion of design codes and good practice guidelines.

The provision of climate data and tools are central to several existing initiatives, but very few are applying these to infrastructure planning and design contexts. Integrating climate data and research with infrastructure planning and development in Africa is critical to ensure up take of ICCPD services. Where screening or adaptation tools are being developed they tend not to be widely accessible beyond bespoke application projects. There appears to be a significant gap in the provision of ICCPD data and tools for infrastructure development that link the various phases of service delivery from climate information through to risk screening or adaptation analysis, or tools for policy-first approaches to climate resilient planning and investment in infrastructure.

Training and capacity development, as a more general service area, is well-developed for existing academic centers in Africa (such as the Climate Systems Analysis Group at the University of Cape Town), but the analysis did not identify training initiatives narrowly focused on ICCPD service provision for infrastructure.

Existing knowledge networks and platforms surveyed do not currently offer dedicated ICCPD services for infrastructure, tending to focus on raising awareness more generally around green growth or sustainable development. However, the convening power and brokering function of some networks (e.g. Infrastructure Consortium for Africa and 100 Resilient Cities) may offer entry points for awareness raising, capacity building, and identifying technical assistance opportunities.

7. Target AFRI-RES services towards supporting Nationally Determined Contributions (NDCs) via multilateral climate and environment funds

Many of the 48 African Nationally Determined Contributions (NDCs) under the UNFCCC Paris Agreement include long-lived infrastructure related planning and investment components in water, energy, urban, transport, agriculture and coastal zone sectors that will require a range of technical support services to “climate proof”. Climate and environmental funds, such as the Green Climate Fund (GCF) offer opportunities to integrate ICCPD services into the development and financing of proposed projects or additional adaptation components. With the GCF for example, ICCPD services can be offered via the GCF Readiness Programme (which offers financing for project preparation); to support readiness of Nationally Designated Authorities and Focal Points; and as technical assistance to Accredited Entities in the preparation of concept notes and proposals. Support for projects already identified in the NDCs are also critical in supporting the overall development objectives and priorities for many African countries. These should also be aligned with country specific efforts to address the Sustainable Development Goals (SDGs).

8. Facilitate collaboration between financiers, governments, researchers, engineering firms and industry associations to operationalize novel services

Anecdotal evidence suggests that interest from engineering sectors to provide ICCPD services is currently low as these are typically not seen as a priority for implementing critical infrastructure solutions in Africa. New approaches for “climate proofing” design, often piloted within the academic research community,



are not necessarily appropriate for and have not yet seen wide transmission into operational practices within the private sector. In a competitive financing and infrastructure design environment, competitive bidding between financiers and contractors drive down prices and drive firms to do the minimum required to meet advertised terms of reference. This happens at the expense of more costly but innovative, proactive and resilient practices.

There are a number of activities that can support increased uptake of novel ICCPD services, including:

- Supporting collaboration between climate modelers and engineers to generate user-informed climate model outputs applicable for design in Africa
- Providing guidance on minimum standards for “climate proofing”
- Updating design standards and codes that will drive new practices within the private sector and ensure compliance for the development of new infrastructure in Africa
- Awareness raising of risks and opportunities within the engineering sector
- Integrating climate change into “best practice” within the engineering sector
- Providing review and quality assurance services to project developers’ and financiers’ terms of reference (TOR) to ensure engineering firms follow good practice in meeting TOR

9. Prioritize wider strategy and policy decisions for climate resilient development pathways over “fine tuning” of infrastructure design

Within user demands there seems to be an expectation of increasing precision in climate forecasts and improvements in hydro-climatic data, particularly improved predictions of the probability of outcomes of various climate change scenarios. The reality from climate science, however, is one of significant and potentially growing uncertainty. Demand-side expectations need to be managed accordingly and solutions sought that are robust across multiple future scenarios.

In many instances uncertainty in climate information rules out feasibility of informing small design “tweaks” or “fine tuning” of existing designs. However, existing and new evidence can more often enable the comparison of bigger trade-offs and alternative development pathways. These need to be considered at the earliest stages of project preparation or inform wider policies and strategic decisions that embrace the concept of adaptation pathways. Improved monitoring of climate change risks is essential in supporting such adaptive management and needs improving.

10. Demand exists for a community of practice in Africa that draws together financiers, project developers and engineering and scientific experts

Arguably there is a major opportunity for AFRI-RES to help build a ‘community of practice’ in Africa over the short to medium term: i.e. a more effective network of actors to exchange learning, approaches and tools, particularly from practical experiences of ICCPD service provision. This could extend to encouraging the development of ‘network’ or ‘community products’ (such as guidelines and protocols) that are endorsed by a range of institutions, and have additional legitimacy and impact as a result. In the short term a number of preparation facilities including CIWA, CRIDF and the African Water Facility (AWF) should all be able to offer compelling real life examples of how they are integrating climate change issues into infrastructure design.



By starting to document and share these experiences, AFRI-RES can contribute to development of a shared body of evidence and network of practitioners that would allow for an evolution in approaches and greater awareness of ‘how’ to tackle resilient infrastructure challenges in practice. It can also help them communicate the value of building climate resilience as a means to demonstrate proof-of-concept and encourage broader engagement from stakeholders that have yet to focus on climate resilience.

AFRI-RES should consider starting with a short-term focus on “downstream” interventions, such as project-level advisory services for the “core steps” in the project preparation cycle (e.g., project definition, pre-feasibility, and feasibility) and the compilation of learning (both from direct AFRI-RES support and from other programmes). In time this growing body of project-specific experience will support the development of a professional community of practice through networking and coordinating interventions, and eventually inform “upstream” interventions, such as the development of regional guidelines and standards / codes. Considering this two-pronged approach with “upstream” and “downstream” activities, effort in the short term should be more weighted towards downstream activities and gradually shift towards upstream.

Other Supporting documents:

- World Bank. Multiple Years. *Implementation Status and Results (ISR) Africa Climate Resilience Investment Facility (P169051) Missions*. Washington, DC: World Bank Group.
- World Bank. Multiple Years. *Aide Memoires of the Africa Climate Resilience Investment Facility (P169051) Missions*. Washington, DC: World Bank.
- World Bank. 2019. *Project Appraisal Document for Africa Climate Resilience Investment Facility (P169051)*.
- UNECA Strategic Planning, Oversight and Results Division. 2023. *Project Evaluation Africa Climate Resilience Investment Facility*.