



Annexes to the Final Report

2026

Climate information and early warning systems

Independent evaluation of the GCF's approach to and Portfolio of Climate Information and Early Warning System Interventions (CIEWS2025)



GREEN
CLIMATE
FUND

Independent
Evaluation
Unit



TRUSTED EVIDENCE.
INFORMED POLICIES.
HIGH IMPACT.

GREEN CLIMATE FUND
INDEPENDENT EVALUATION UNIT

Independent Evaluation of the GCF's Approach to and Portfolio of Climate Information and Early Warning System Interventions

ANNEXES TO THE FINAL REPORT

03/2026

© 2026 Green Climate Fund Independent Evaluation Unit
175, Art center-daero
Yeonsu-gu, Incheon 22004
Republic of Korea
Tel. (+82) 032-458-6450
Email: ieuc@gcfund.org
<https://ieuc.greenclimate.fund>

All rights reserved.

First Edition

This evaluation is a product of the Independent Evaluation Unit at the Green Climate Fund (GCF/IEU). It is part of a larger IEU effort to provide open access to its research and work and to make a contribution to climate change discussions around the world.

While the IEU has undertaken every effort to ensure the data in this report is accurate, it is the reader's responsibility to determine if any and all information provided by the IEU is correct and verified. Neither the author(s) of this document nor anyone connected with the IEU or the GCF can be held responsible for how the information herein is used.

Rights and Permissions

The material in this work is copyrighted. Copying or transmitting portions all or part of this Report without permission may be a violation of applicable law. The IEU encourages dissemination of its work and will normally grant permission promptly.

The IEU reserves the right to edit text for brevity and clarity in subsequent reprints.

Citation

The citation details for this evaluation are as follows:

Independent Evaluation Unit. *Independent Evaluation of the GCF's Approach to and Portfolio of Climate Information and Early Warning System Interventions*: Annexes to the final report. Independent Evaluation Unit, Green Climate Fund, 2026.

Credits

Head of the GCF Independent Evaluation Unit: Andreas Reumann

Task manager: Aiko Ward, Principal Evaluation Officer, Independent Evaluation Unit

Editing: Toby Pearce

Layout: Giang Pham

Cover photo: ©Evelyn Vargas Carmona, *Especialista en comunicación* (Communication Specialist), IUCN Guatemala Office

Cover design: Therese Gonzaga

A FREE PUBLICATION

Printed on eco-friendly paper

CONTENTS

| | |
|---|----------|
| ANNEXES | 1 |
| Annex 1. Evaluation matrix | 3 |
| Annex 2. List of stakeholders interviewed..... | 10 |
| Annex 3. Methodology for establishing the portfolio of CIEWS projects | 25 |
| Annex 4. List of CIEWS projects..... | 27 |
| Annex 5. AI-assisted pathway classification methodology for CIEWS projects and cluster assessments..... | 34 |
| Annex 6. Imputing investment weights..... | 39 |
| Annex 7. Cluster assessment template | 43 |
| Annex 8. Methodology for EW4All pillar funding allocation..... | 44 |
| Annex 9. List of CIEWS-related readiness grants | 51 |
| Annex 10. List of CIEWS-related PPF grants and approved funding proposals | 55 |
| Annex 11. Data corrections compendium: Impact data quality assurance documentation..... | 57 |
| Annex 12. Evaluability of CIEWS projects | 67 |

TABLES

| | |
|--|----|
| Table A – 1. Overall model evaluation results | 41 |
| Table A – 2. Model performance across 5 cross-validation folds..... | 41 |
| Table A – 3. Comparison of original and fine-tuned regressor..... | 42 |
| Table A – 4. Correction 1.1 | 58 |
| Table A – 5. Correction 1.2 | 59 |
| Table A – 6. Correction 1.3 | 59 |
| Table A – 7. Correction 1.4 | 59 |
| Table A – 8. Correction 1.5 | 60 |
| Table A – 9. Correction 2.1 | 60 |
| Table A – 10. Correction 3.1 | 60 |
| Table A – 11. Correction 4.1 | 61 |
| Table A – 12. Correction 4.2 | 61 |
| Table A – 13. Corrections 5.1–5.10 | 62 |
| Table A – 14. Records corrected..... | 62 |
| Table A – 15. Correction 6.1 | 63 |
| Table A – 16. Correction 7.1 | 63 |
| Table A – 17. Correction 8.1 | 64 |
| Table A – 18. Corrections 9.1–9.2 | 64 |
| Table A – 19. Comparative evaluability analysis of CIEWS versus non-CIEWS projects | 68 |

FIGURES

| | |
|--|----|
| Figure A – 1. Pearson correlation matrix between target and features | 40 |
|--|----|

ABBREVIATIONS

| | |
|----------------|--|
| ADB | Asian Development Bank |
| AE | Accredited entity |
| AfDB | African Development Bank |
| APR | Annual performance report |
| CIEWS | Climate information early warning system |
| CIS | Climate information services |
| CREWS | Climate risk early warning system |
| CSO | Civil society organization |
| DWA | Department of Women Affairs, Bangladesh |
| EWS | Early warning system |
| FGD | Focus group discussion |
| FP | Funding proposal |
| GCF | Green Climate Fund |
| GEF | Global Environment Facility |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| GoB | Government of Bangladesh |
| ICC | Investigación sobre Cambio Climático, Guatemala |
| IDB | Inter-American Development Bank |
| IEU | Independent Evaluation Unit |
| IFAD | International Fund for Agricultural Development |
| IFRC | International Federation of Red Cross and Red Crescent Societies |
| ISCAD | International Strategic Center for Agri-food Department |
| ITU | International Telecommunication Union |
| IUCN | International Union for Conservation of Nature |
| KII | Key informant interview |
| Lao PDR | Lao People's Democratic Republic |
| LGED | Local Government Engineering Department, Bangladesh |
| LLM | Large language model |
| MAGA | Ministerio de Agricultura, Ganadería y Alimentación, Guatemala |
| MDMC | Municipal Disaster Management Committee, Timor-Leste |
| MHEWS | Multi-hazard early warning system |
| NAP | National Adaptation Plan |
| NDA | National Designated Authority |

| | |
|---------------|--|
| NDC | Nationally determined contribution |
| PAP | Proposal approval process |
| PIDACC | Programme for integrated development and adaptation to climate change, Nigeria |
| PPF | Project Preparation Facility |
| RPSP | Readiness and Preparatory Support Programme |
| SOFF | Systematic Observations Financing Facility |
| UNDP | United Nations Development Programme |
| UNEP | United Nations Environment Programme |
| WMO | World Meteorological Organization |

ANNEXES

Annex 1. EVALUATION MATRIX

| SCOPE | GCF EVALUATION CRITERIA | No. | EVALUATION QUESTIONS AND SUBQUESTIONS | METHODS | KEY DATA SOURCES AND LITERATURE | LINKAGE WITH CIEWS ToC |
|----------|-------------------------------|-----|--|--|--|------------------------|
| Approach | Coherence and complementarity | 1 | To what extent has the GCF been able to enhance international cooperation to promote and strengthen CIEWS both within countries and at international forums? | Desk review, KII, FGD | External and GCF data and information sources, and published documents | GCF inputs 3 |
| | | 1.1 | To what extent has the GCF collaborated with key/main global CIEWS actors, such as WMO, UNDRR, ITU, IFRC, CREWS, WB-GFDRR and SOFF, to synergize its support and/or channel finances into CIEWS? | Desk review, benchmarking study, KII and/or FGD with CIEWS actors | External and GCF data sources on CIEWS actors | GCF inputs 3 |
| | | 1.2 | To what extent has the GCF collaborated with climate funds (i.e. Adaptation Fund, CIF, GEF, and FRLD), to promote or strengthen CIEWS within target countries, regionally and globally? | Desk review, benchmarking study, KII and/or FGD with climate funds, United Nations agencies and other stakeholders | External and GCF data sources on CIEWS actors | GCF inputs 3 |
| | | 1.3 | To what extent has the GCF collaborated with international AEs (as implementing/technical agencies) including United Nations agencies (i.e. UNDP, UNEP, WFP, and IFAD) and other international stakeholders (e.g. international NGOs, private sector, meteorological agencies, climate research institutions, and technology providers) to promote or strengthen CIEWS within target countries, regionally and globally? | Desk review, benchmarking study, KII and/or FGD with climate funds, United Nations agencies and other stakeholders | External and GCF data sources on CIEWS actors | GCF inputs 3 |
| | | 1.4 | How has the GCF contributed to the generation and sharing of CIEWS knowledge among CIEWS stakeholders? | Desk review, systematic review, KII with GCF stakeholders | GCF data and published documents | GCF input 3 |

| SCOPE | GCF EVALUATION CRITERIA | No. | EVALUATION QUESTIONS AND SUBQUESTIONS | METHODS | KEY DATA SOURCES AND LITERATURE | LINKAGE WITH CIEWS ToC |
|-------|-------------------------|-----|--|---|--|------------------------|
| | | 1.5 | To what extent and in which way has the GCF contributed to discussions at the UNFCCC COP level on strengthening CIEWS including through the WimExcom? | Desk review, KII and/or FGD with UNFCCC/COP and GCF stakeholders | UNFCCC documents, GCF data and reports to the UNFCCC/COP | GCF inputs 3 |
| | | 1.6 | To what extent have the “pilot GCF SAP—CREWS Scaling-up Framework for early warning” (signed in 2023) and the “Framework for Collaboration between the SOFF and CIF, CREWS initiative, GEF, and GCF” (signed in 2023) demonstrated potential or shown early positive/negative signs for scaling-up or catalysing synergies in CIEWS work? ¹ | Desk review, benchmarking study, KII and FGD with framework stakeholders | External and GCF data and information on these frameworks | GCF inputs 3 |
| | | 1.7 | What are the remaining gaps in coherence and complementary efforts among CIEWS actors? | Desk review, benchmarking study, portfolio data analysis and mapping, KII and FGD with CIEWS stakeholders, policy meta-review | GCF and CIEWS stakeholders, funding/investment data (including OECD database and WMO/UNDRR Global Observatory) | GCF inputs 3 |
| | Efficiency | 2 | To what extent is GCF leveraging its programmatic approaches and funding windows (e.g. RPSP, PPF and PAP versus SAP) to support CIEWS? | Desk review, portfolio analysis, KII and FGD with GCF stakeholders | GCF-funded activities, RPSP, PPF data | GCF inputs 1 and 2 |
| | | 2.1 | To what extent is the GCF leveraging its programmatic approaches, such as DAEs versus IAEs, public versus private sector engagement, single-country versus multi-country programming, and sector-based versus results-area based approaches, to achieve efficiency in attaining CIEWS results? | Desk review, portfolio analysis, KII and FGD with GCF stakeholders | GCF portfolio data on Funded Activities, GCF stakeholders | GCF inputs 1 and 2 |

¹ Systematic Observations Financing Facility, “Signed Framework for Collaboration for enhancing Systematic Observation,” 2023, <https://www.un-soff.org/document/signed-framework-for-collaboration-for-enhancing-systematic-observation/>.

| SCOPE | GCF EVALUATION CRITERIA | No. | EVALUATION QUESTIONS AND SUBQUESTIONS | METHODS | KEY DATA SOURCES AND LITERATURE | LINKAGE WITH CIEWS ToC |
|-------|--|-----------|---|---|---|---|
| | | 2.2 | To what extent does the Readiness Programme, both the previous strategy up to 2023 and the transitional arrangement to the new Readiness Strategy 2024–2027 during 2024–2025, facilitate the creation of an enabling environment for CIEWS programming? | Desk review, qualitative scenario assessment, KII and FGD with RPSP stakeholders (NDA and delivery partners), and RPSP RRMF data analysis | Samples of RPSP grant proposals and APRs, and RPSP stakeholders | GCF input 1 |
| | | 2.3 | To what extent does the PPF window facilitate CIEWS programming? | Desk review, KII and FGD with PPF stakeholders (AEs, and roster of technical consultants), and PPF data analysis | Samples of PPF grant proposals and APRs, and PPF stakeholders | GCF input 1 |
| | | 2.4 | To what extent and how is the “pilot GCF SAP—CREWS scaling-up framework for early warning” helping countries to reduce transaction costs and time to access funding for CIEWS? | Desk review, KII and FGD with SAPCREWS stakeholders, SAP data analysis | SAP pipeline and portfolio data, SAP stakeholders | GCF input 2 |
| | | 2.5 | To what extent and how does the GCF’s new organizational structure along with the “Efficient GCF” initiatives, facilitate efficient support and investment in CIEWS across regions? | KII and FGD with GCF stakeholders | GCF stakeholders | GCF input 1 |
| | | 2.6 | How well are financial and technical resources utilized vis-à-vis intended outcomes? | Desk review, portfolio data analysis, KII and FGD with GCF stakeholders | GCF portfolio and financial data, FPs and APRs | GCF inputs 1 and 2 |
| | | Portfolio | Relevance | 3 | To what extent do CIEWS interventions align to needs and gaps recognized by governments (i.e. national NMHS, NDMA and subnational governments) within target countries? | KII and FGD with GCF stakeholders in target countries |
| 3.1 | To what extent are GCF support and investments in CIEWS aligned with the NDCs and NAPs of the countries being supported? | | | Desk review, external and RPSP data analysis | UNFCCC NDC and NAP registry, NDC tracker, RPSP RRMF data | Short- and medium-term output 1 |
| 3.2 | To what extent are CIEWS interventions meeting the needs of communities? | | | Desk review, KII and FGD with GCF stakeholders, non- | FPs, APRs and GCF stakeholders (AEs and | Short- and medium- |

| SCOPE | GCF EVALUATION CRITERIA | No. | EVALUATION QUESTIONS AND SUBQUESTIONS | METHODS | KEY DATA SOURCES AND LITERATURE | LINKAGE WITH CIEWS ToC |
|-------|-------------------------|-----|---|--|---|---|
| | | | | participatory observations in countries | GCF beneficiaries) in countries | term output 2 |
| | | 3.3 | To what extent are CIEWS interventions meeting the needs of historically underserved populations such as women and Indigenous Peoples, disabled persons? | Desk review, KII and FGD with GCF stakeholders, non-participatory observations in countries | FPs, APRs, interim and final evaluations, and GCF stakeholders (AEs and GCF beneficiaries) in countries | Short- and medium-term outputs 1 and 2 |
| | | 3.4 | How have CIEWS interventions incorporated and leveraged on Indigenous traditional knowledge? | Desk review, KII and FGD with GCF stakeholders, non-participatory observations in countries | FPs, APRs, IEU-IP evaluation data set, GCF LLCA data set, GCF stakeholders (AEs and GCF beneficiaries) in countries, interim and final AE-led evaluations, previous IEU evaluations | Short- and medium-term outputs 1 and 2 |
| | | 3.5 | To what extent are CIEWS interventions locally led (hence relevant to local contexts)? | Portfolio data analysis, KII and FGD with GCF stakeholders, non-participatory observations in countries | LLCA GCF data set, and GCF stakeholders (AEs and GCF beneficiaries) in mission countries | Short- and medium-term outputs 1 and 2 |
| | Effectiveness | 4 | To what extent has the CIEWS portfolio been successful or unsuccessful in terms of: <ul style="list-style-type: none"> • Enhancing or making CIS available to users • Making impact-based MHEWS available, accessible and responsive • Improving and leveraging CIEWS for investments? | Desk review, cluster/thematic study by analytical framework with scorecards, portfolio data analysis, in-country or online-based KII and FGD with GCF stakeholders, and non-participatory observations | FPs, APRs, interim and final AE-led evaluations, and GCF stakeholders | Short- and medium-term outputs 1, 2 and 3 |
| | | 4.1 | What are the key factors that have facilitated or hindered the progress or achievements of the CIEWS interventions by cluster type (i.e. notable common emerging successes/good practice and/or challenges/lessons per cluster)? | Desk review, cluster/thematic study, portfolio data analysis, in-country or online-based KII and FGD with GCF stakeholders; and non- | FPs, APRs, interim and final AE-led evaluations, and GCF stakeholders | Short- and medium-term outputs 2 and 3 |

| SCOPE | GCF EVALUATION CRITERIA | No. | EVALUATION QUESTIONS AND SUBQUESTIONS | METHODS | KEY DATA SOURCES AND LITERATURE | LINKAGE WITH CIEWS ToC |
|-------|--------------------------------------|-----|---|--|--|--|
| | | | | participatory observations | | |
| | | 4.2 | To what extent have there been effective cross-sectoral planning and decision-making mechanisms at regional, national, subnational, and local/community settings to address their climate information and disaster preparedness needs and priorities? | Desk review, cluster/thematic study, portfolio data analysis, in-country or online-based KII and FGD with GCF stakeholders, non-participatory observations | FPs, APRs, and GCF stakeholders | Short- and medium-term output 2 |
| | | 4.3 | How effectively is the GCF portfolio of CIEWS interventions addressing the appropriate range of climate hazards and vulnerabilities? | Desk review, portfolio data analysis and mapping (by climate hazards), KII/FGD with GCF stakeholders | FPs, APRs and GCF stakeholders | Short- and medium-term output 2 |
| | | 4.4 | What are the observable CIEWS-related results? | Portfolio data analysis, KII/FGDs, country missions | FP, APR, interim and final AE-led evaluations, and CIEWS results data reported against PMFs and IRMF | Short- and medium-term outputs 2 and 3 |
| | Impact | 5 | What are the key changes in knowledge and behaviours of individuals within target communities following CIEWS interventions? | Data analysis including impact evaluation, KII and FGD with GCF stakeholders, non-participatory observations in countries | FPs, APRs, interim and final evaluations, baseline, midline and endline household survey data available from IEU LORTA programme, and GCF stakeholders | Long-term outcome 3 |
| | | 5.1 | Have CIEWS interventions enhanced the adaptive capacity of the communities they support? | Desk review, data analysis, KII and FGD with GCF stakeholders in countries, non-participatory observations | FP, APR, interim and final evaluations, LORTA reports on CIEWS projects, GCF stakeholders | Long-term outcomes 1 and 3 |
| | Sustainability and country ownership | 6 | Are the results achieved from GCF-funded CIEWS projects sustainable without reliance on external support? | Desk review, KII and FGD with GCF stakeholders in countries, and non- | FP, APRs, interim and final AE-led evaluations, and GCF stakeholders | Long-term outcome 3 |

| SCOPE | GCF EVALUATION CRITERIA | No. | EVALUATION QUESTIONS AND SUBQUESTIONS | METHODS | KEY DATA SOURCES AND LITERATURE | LINKAGE WITH CIEWS ToC |
|---------------|--|-----|--|--|---|--|
| | | | | participatory observations | | |
| | | 6.1 | What mechanisms, such as national funding, local capacity, and institutional arrangements, have enabled or limited, or have the potential to support the continued operation of CIEWS without external assistance? | Desk review, KII and FGD with GCF stakeholders in countries, and non-participatory observations | FP, APR, interim and final AE-led evaluations, and GCF stakeholders | Long-term outcomes 1, 2 and 3 |
| | Gender equity | 7 | To what extent have CIEWS interventions fostered women's participation and leadership? What key factors have driven gender equality results? | Desk review, KII and FGD with GCF stakeholders, and non-participatory observations | FP, APR, interim and final AE-led evaluations, and GCF stakeholders | Long-term outcome 3 |
| | Replication and scalability | 8 | Are there indications that the results achieved from GCF-funded CIEWS projects are, or will be scalable or replicated beyond intervention locations and stakeholder groups? | Desk review, KII and FGD with GCF stakeholders in countries, and non-participatory observations | FP, APR, interim and final evaluations, and GCF stakeholders | Long-term outcome 2 |
| | Unexpected results, both positive and negative | 9 | What are some unexpected positive and negative results observed in CIEWS interventions? | Desk review, cluster/thematic study, KII and FGD with GCF stakeholders, non-participatory observations | FP, APR, interim and final evaluations, and GCF stakeholders | Short- and medium-term outputs and long-term outcomes |
| | | 9.1 | Are there examples within the GCF portfolio where CIEWS projects have contributed to addressing non-climate-related hazards (e.g. epidemic or conflict)? | Desk review, cluster/thematic study, KII and FGD with GCF stakeholders, non-participatory observations | FP, APR, interim and final AE-led evaluations, and GCF stakeholders | Short- and medium-term outputs and long-term outcomes |
| Cross-cutting | Innovativeness | 10 | Have CIEWS interventions supported by the GCF leveraged on innovative approaches, practices and technologies? | Desk review, KII and FGD with GCF stakeholders in countries, non-participatory observations | FP, APR, interim and final AE-led evaluations, GCF stakeholders | Cross-cutting across GCF inputs and short-term/medium-term outputs |

| SCOPE | GCF EVALUATION CRITERIA | No. | EVALUATION QUESTIONS AND SUBQUESTIONS | METHODS | KEY DATA SOURCES AND LITERATURE | LINKAGE WITH CIEWS ToC |
|-------|-------------------------|------|---|---|---|----------------------------------|
| | | 10.1 | To what extent has the GCF de-risked private investments in CIEWS (e.g. the deployment of financial instruments)? | Desk review, KII and FGD with GCF stakeholders (CIEWS and private sector experts) | FP, APR, interim and final AE-led evaluations, GCF stakeholders | GCF inputs 1, 2 and 3 |
| | | 10.2 | Have there been examples of blending the returns from public benefits (availability of climate information, EWS) and private income streams to increase or strengthen CIEWS (e.g. increased revenues from climate-informed financial products)? | Desk review, KII and FGD with GCF stakeholders (CIEWS and private sector experts), non-participatory observations | FP, APR, interim and final AE-led evaluations, GCF stakeholders | Short- and medium-term output 2 |
| | | 10.3 | Have there been advanced technologies (e.g. AI, remote sensing, data analytics) being applied or transferred to target countries to increase efficiency and reduce costs in CIEWS? | Desk review, KII and FGD with GCF stakeholders, non-participatory observations | FP, APR, interim and final AE-led evaluations, and GCF stakeholders | Short- and medium-term outputs 3 |
| | | 10.4 | Have nature-based solutions been applied to promote or strengthen CIEWS? | Desk review, KII and FGD with GCF stakeholders, non-participatory observations | FP, APR, interim and final AE-led evaluations, and GCF stakeholders | Short- and medium-term output 3 |

Source: CIEWS approach paper.

Notes: GCF = Green Climate Fund; CIEWS = climate information and early warning system; ToC = theory of change; KII = key informant interview; FGD = focus group discussion; CIS = climate information services; WMO = World Meteorological Organization; UNDRR = United Nations Office for Disaster Risk Reduction; ITU = International Telecommunication Union; IFRC = International Federation of Red Cross and Red Crescent Societies; CREWS = Climate Risk and Early Warning Systems; WB-GFDRR = World Bank Global Facility for Disaster Reduction and Recovery; SOFF = Systematic Observations Financing Facility; CIF = Climate Investment Funds; GEF = Global Environment Facility; FRLD = Fund for Responding to Loss and Damage; UNDP = United Nations Development Programme; UNEP = United Nations Environment Programme; WFP = World Food Programme; IFAD = International Fund for Agricultural Development; NGO = non-governmental organization; UNFCCC = United Nations Framework Convention on Climate Change; COP = Conference of the Parties; SAP = simplified approval process; OECD = Organisation for Economic Cooperation and Development; RPSP = Readiness and Preparatory Support Programme; MHEWS = multi-hazard early warning system; PPF = Project Preparation Facility; PAP = proposal approval process; DAE = direct access entity; IAE = international accredited entity; NDA = National Designated Authority; RRMF = readiness results management framework; APR = annual performance report; AE = accredited entity; FP = funding proposal; NMHS = national meteorological and hydrological services; NDMA = national disaster management authority; NDC = nationally determined contribution; NAP = national adaptation plan; IP = Indigenous Peoples; LLCA = locally led climate adaptation; IEU = Independent Evaluation Unit; PMF = performance measurement framework; IRMF = integrated results management framework; LORTA = Learning-Oriented Real-Time Impact Assessment Programme; AI = artificial intelligence.

Annex 2. LIST OF STAKEHOLDERS INTERVIEWED

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|---------------|-----------------|--|---|
| Abedin | Joynal | Safeguard Specialist | United Nations Development Programme (UNDP Bangladesh), GCF project |
| Abilio Nunez | Nelson | Staff | Municipal Disaster Management Committee (MDMC), Baucau (Timor-Leste) |
| Adaje | Patience | Senior Officer, Nature-Based Solutions | International Federation of Red Cross and Red Crescent Societies (IFRC Nigeria) |
| Agaltseva | Natalya | Head, Department of Climate Monitoring and International Projects | Uzhydromet, Department for the Study of Foreign Experience and Development of Scientific Research |
| Agboma | Patrick | Consultant, Agricultural and Agro-industry Department | African Development Bank (AfDB) |
| Ahmed | Moheuddin | Deputy Director | Department of Women Affairs (DWA) (Bangladesh) |
| Aihounton | Ghislain | Monitoring and Evaluation Specialist, Programme for integrated development and adaptation to climate change (PIDACC) Nigeria Project | AfDB (Nigeria) |
| Akter | Mosammat Hasina | Deputy Secretary of Government of Bangladesh (GoB) | Maritime Organisation of West and Central Africa (Bangladesh) |
| Akut | Stephanie | Chief of Staff to the Directors-General | National Council on Climate Change (Nigeria) |
| Alegría | Rafael | Field Staff | Agriteq (Guatemala) |
| Álvarez | Antonio | Technical Staff | Palo Blanco (Guatemala) |
| Amaral | Basilio | Chief of Department | Autoridade Protesaun Civil (Timor-Leste) |
| Amirakieva | Elvira | Secretary-General | IFRC (Uzbekistan) |
| Ammour | Tania | Regional Direction Senior Advisor | International Union for Conservation of Nature (IUCN Guatemala) |
| Araujo Duarte | Felisberto | President | Nationally Designated Authority (Timor-Leste) |
| Araya | Kanokpan | Country Director | Asian Development Bank (ADB Uzbekistan) |
| Arkantayeva | Diana | Environmental Specialist | International Strategic Center for Agri-food Department (ISCAD Uzbekistan) |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|----------------|---------------|---|---|
| Asaduzzaman | Sarder M. | Assistant Resident Representative | UNDP (Bangladesh) |
| Asturias | Jorge | Readiness Project Coordinator | Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ Guatemala) |
| Asvakittimakul | Bojara | Oceanographer | RIMES (Timor-Leste) |
| Avazov | Shokhrukh | National Water, Infrastructure and Climate Change Program Officer | Embassy of Switzerland in Uzbekistan |
| Awa | Mercy | Head, Climate Change Unit | Nigeria Hydrological Services Agency (Nigeria) |
| Awojemila | Kunle | Deputy Director, Flood Forecasting Monitoring | Ministry of Environment (Nigeria) |
| Ayodeji | Falemu | Assistant Chief Scientific Officer, Climate Finance | National Council on Climate Change (Nigeria) |
| Barbosa | Clementino P. | Director, MDMC | Baucau (Timor-Leste) |
| Barillas | Alejandro | Technical Staff | INSIVUMEH (Guatemala) |
| Beedassy | Shaki | GCF Coordinator, Climate Change and Green Growth Department | AfDB |
| Bekchanova | Lola | International Relations and Marketing Division | Ministry of Construction and Housing and Communal Services (Uzbekistan) |
| Belo | Abreu | Chief of Department of Planning Disaster Equipment, MDMC | Baucau (Timor-Leste) |
| Belo | Leao F. | Staff, MDMC | Baucau (Timor-Leste) |
| Bentinck | Johan | Strategic Project Planning Specialist, Department of Monitoring, Evaluation, and Learning | GCF Secretariat |
| Bogdanova | Anna-Maria | Disaster Risk Management Specialist | World Bank |
| Bomay | Evelyn | Technical Staff | INSIVUMEH (Guatemala) |
| Braz | Januario | Chief of Department of Dissemination, MDMC | Baucau (Timor-Leste) |
| Cáceres | Sergio | Technical Staff | Agriteq (Guatemala) |
| Calin | Ramona | Locally led Climate Action Specialist, Chief Investment Officer (CIO-FO) | GCF Secretariat |
| Cangarife | Manuel | Technical Staff | Palo Blanco (Guatemala) |
| Cap | Mariano | Early Warning System Coordinator | IUCN (Guatemala) |
| Caravantes | Alan | Technical Staff | Ministerio de Agricultura, |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|----------------|------------------|---|--|
| | | | Ganadería y Alimentación (MAGA) (Guatemala) |
| Castellanos | Edwin | Vice Minister | Ministry of Environment and Natural Reso (Guatemala) |
| Chakrabarti | Tonmoy | Assistant Engineer, Climate Resilient Infrastructure Mainstreaming (CRIMP) | Local Government Engineering Department (LGED) (Bangladesh) |
| Chaponda | Moyenda | Head, Resource Mobilization and Partnerships | WMO |
| Chimdiga | Evans | Director of Engineering Hydrology | Nigeria Hydrological Services Agency (Nigeria) |
| Chonoko | Ishaya | Director, DRR | National Emergency Management Agency (Nigeria) |
| Chowdhuri | Prakash Kanti | Joint Secretary of GoB | Maritime Organisation of West and Central Africa (Bangladesh) |
| Chunga | Chitembo Kawimbe | Lead, Climate Smart Cities Program | CIF |
| Coballes | Kathleen | Climate Change Specialist | ADB (Uzbekistan) |
| Cojom | José | | FAO Petén (Guatemala) |
| Corzo | Elmer | Technical Staff | Instituto Privado de Investigación sobre Cambio Climático (ICC Guatemala) |
| Cruz | Juan | Manager Cooperative Tecpán | FUNDEA (Guatemala) |
| Da Conceicao | Carlos | Director | National Directorate for Climate Change (Timor-Leste) |
| Da Costa | Sebastiao | Chief of the Department of Water Resources | National Directorate of Water and Sanitation Resources (Timor-Leste) |
| Da Costa | Severino | Technical Analysis of DRR | Associsaun Protesaun Civil-Dili (Timor-Leste) |
| Da Costa Moniz | Terencio | Director | National Directorate for Meteorology and Geophysics, Ministry of Transport and Communication (Timor-Leste) |
| Da Silva | Valentino | IT Officer | RIMES (Timor-Leste) |
| Da Silva Moniz | Felisberta | Head of Unit for Climate Change and Environment | UNDP (Timor-Leste) |
| Dagurkuden | Burcu | Technical and Portfolio Management Specialist for National Adaptation Plans | UNDP |
| Dankano | Jamil | Principal Administrative Officer | Federal Minister of Finance (Nigeria) |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|-----------------|------------------|--|--|
| Dayaratne | Sonali | Deputy Resident Representative | UNDP (Bangladesh) |
| De Aquino | Tito | National Programme Officer for Climate Change | World Health Organisation (Timor-Leste) |
| De Carvalho | Tiago | Chief of Department of Risk | Autoridade Protesaun Civil (Timor-Leste) |
| De Fatima | Esperansa | Finance and Admin Support | Autoridade Protesaun Civil (Timor-Leste) |
| De Jesus C Belo | Marculino | Director | National Directorate of Water and Sanitation Resources (Timor-Leste) |
| De Sousa | Dario | National Programme Officer | UN Women (Timor-Leste) |
| De Sousa | Rui | | National Directorate of Water and Sanitation Resources (Timor-Leste) |
| Dedabaev | Ulugbek | Project Manager | UNDP in Uzbekistan |
| Díaz | Cynthia | Soils and Water Unit | MAGA (Guatemala) |
| Dickinson | Chris | Senior Climate Change Specialist | ADB (Uzbekistan) |
| Domínguez | Dafne | Monitoring Specialist | IUCN (Guatemala) |
| Dorigo | Martina | Program Management Coordinator with the Results, Impact and Knowledge Team | Adaptation Fund |
| Dorji | Tshewang | Senior Climate Change Specialist | Global Environment Facility (GEF) |
| Dos Reis | Juliao | Consultant | Partnership for Inclusive Prosperity (PROSIVU), NDA (Timor-Leste) |
| Duarte | Carlos | Researcher | University Rafael Landívar (Guatemala) |
| Dustmatov | Khurshidbek | Deputy Head | Kosonsoy District Department for Emergency Situations (Uzbekistan) |
| Effiwatt | Adesola Olatunde | Assistant Chief Scientific Officer | National Council on Climate Change (Nigeria) |
| Ehrhart | Charles | Chief Strategy and Impact Officer, Office of the Chief Strategy and Impact Officer | GCF Secretariat |
| Ejiofor | Benny | Chief Scientific Officer and Lead, Climate Finance | National Council on Climate Change (Nigeria) |
| Ekram | Anam | Manager, Green Climate Fund | Infrastructure Development Company Limited (IDCOL) (Bangladesh) |
| F da Costa | Emeliana | Admin and finance support, MDMC | Baucau (Timor-Leste) |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|----------------|--------------|--|---|
| Fakhruddin | Bapon | Water Resources Management Senior Specialist, Department of the Asia and the Pacific Region | GCF Secretariat |
| Famiya | Oluwole | Teitope Akinyemi Technical Advisor | Federal Minister of Finance (Nigeria) |
| Farah | Al Taher | Technical Focal Point D.C. | Inter-American Development Bank (IDB Guatemala) |
| Fatima | Martinho | Chief of Department | Associsaun Protesaun Civil-Dili (Timor-Leste) |
| Ferdous | Jannatul | Research Officer | DWA (Bangladesh) |
| Fernández | Andrea | External Cooperation Director | MARN (Guatemala) |
| Fernández | Leandro | Midterm Evaluator | FUNDEA (Guatemala) |
| Figueroa | Gerberth | Technical Staff | INSIVUMEH (Guatemala) |
| Fink | Andrin | Deputy Head of the Mission, Head of Cooperation | Embassy of Switzerland in Uzbekistan |
| Fonseca | Juviano | Meteorologist | Associsaun Protesaun Civil-Dili (Timor-Leste) |
| Fujii | Akiko | President Representative | UNDP (Uzbekistan) |
| Galván | Alan | Project Coordinator | FUNDEA (Guatemala) |
| Gampp | Lisa Marina | Regional Water and Climate Change Advisor | Embassy of Switzerland in Uzbekistan |
| Gavrilenko | Nadejda | Project Manager, “Climate Change and Resilience in CA” project (former Project Manager of the NAP project) | UNDP in Uzbekistan |
| Gonzaga | Elvis Miquel | Chief of Human Resources | Autoridade Protesaun Civil (Timor-Leste) |
| Gonzales | Marculino | Meteorologist | FAO (Timor-Leste) |
| González | Henry | [Former] CIO-FO | [Former] GCF Secretariat |
| González | Óscar | Project Coordinator | ICC (Guatemala) |
| Gramajo | Eva | Technical Staff | INSIVUMEH (Guatemala) |
| Gray | Vanessa | Head, Division for Environment and Emergency Telecommunications, Telecommunication Development Bureau | International Telecommunication Union (ITU) |
| Grijalva | Agustín | Technical Staff | Palo Blanco (Guatemala) |
| Guerra | Alex | Director | ICC (Guatemala) |
| Gulamov | Mirzo | Country Office Head | ADB (Uzbekistan) |
| Guterres Nunes | Shobari | Project Manager | UNEP (Timor-Leste) |
| Hannan | Abdul | National Project Manager | UNDP (Bangladesh), GCF Project |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|-----------|-----------------|---|---|
| Haque | Mohammad Rezaul | Programme Associate | UNDP (Bangladesh) |
| Harris | Matthew William | Results Specialist, Resilience and Nature | Climate Investment Funds (CIF) |
| Harun | Abdullah Al | Monitoring and Evaluation Specialist | UNDP (Bangladesh), GCF Project |
| Hengst | Johannes | Project Manager | KfW Development Bank (Bangladesh) |
| Heureux | Ana | Programme Management Officer, SOFF Secretariat | WMO |
| Honoré | Cyrille | Director, DRR/EW4All, MHEWS Office and Public Services Division | WMO |
| Horsburgh | Kevin | Climate Science Lead, Office of the Chief Strategy and Impact Officer | GCF Secretariat |
| Hosen | Babul | Accountant, Gender-responsive Coastal Adaptation Project | UNDP (Bangladesh) |
| Hossain | Anowar | Additional Chief Engineer and Project Director, Climate Resilient Local Infrastructure Centre | LGED (Bangladesh) |
| Hossain | Kabir | Senior Assistant Secretary of GoB, Economic Relations Division | Ministry of Finance (Bangladesh) |
| Hossain | Saddam | Senior Assistant Engineer, CRIMP | LGED (Bangladesh) |
| Humtsoe | Christina | Data Management Officer, Department of Monitoring, Evaluation, and Learning | GCF Secretariat |
| Hurtarte | Vanessa | Grants Coordinator | IUCN (Guatemala) |
| Ibragimov | Firuz | Project Manager | UNDP, Green Climate Fund Project (Timor-Leste) |
| Ibrahim | Umar | General Director | Nigeria Hydrological Services Agency (Nigeria) |
| Ijampy | James | Assistant General Manager, Technical Assistant to the DG | Nigeria Meteorological Agency (Nigeria) |
| Ikramov | Izatio | Head, Department for the Introduction of Information and Communication Technologies and Digitalization in the Agricultural Sector | Ministry of Agriculture (Uzbekistan) |
| Inatov | Ibratio | Executive Secretary | National Center for Climate Change, Ministry of Ecology, Environmental Protection and |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|---------------|------------------|--|--|
| | | | Climate Change (Uzbekistan) |
| Intsiful | Joseph | Senior Climate Information and Early Warning Systems Specialist, Department of the Africa Region | GCF Secretariat |
| Islam | Mohammad Razibul | Joint Secretary of GoB, ERD | Ministry of Finance (Bangladesh) |
| Islam | S. M. Monirul | Deputy Chief Executive Officer (CEO) and Chief Financial Officer (CFO) | IDCOL (Bangladesh) |
| Islam | Shahidul | Climate Change Specialist, CReLIC | LGED (Bangladesh) |
| Islamov | Shakhzod | Head, Department for Transition to Green Economy and Development Adaptation | Ministry of Economy and Finance (Uzbekistan) |
| Islomova | Nargiza | Lead Specialist, Technical Standardization Department | Ministry of Construction and Housing and Communal Services (Uzbekistan) |
| Ixcamparij | Joel | Technical Staff | INSIVUMEH (Guatemala) |
| J. | Elena | Civil society organization (CSO) member | Asociación Xayá Akich (Guatemala) |
| Jabo | Steven | Technical Advisor | Hydrological Services Agency (Nigeria) |
| Jop | Amilcar | | Municipality of Tecpán (Guatemala) |
| Juárez | Mariel | Technical Focal Point D.C. | IDB (Guatemala) |
| Jujpuc | Brian | Technical Staff | Foundation for the Conservation of Natural Resources and the Environment (Guatemala) |
| Juraboev | Muslimbek | Hydraulic Engineer | Namangan Hydrometeorology Center (Uzbekistan) |
| Kadian | Rashmi | Operations Safeguards Lead, Office of the Chief Investment Officer | GCF Secretariat |
| Kamoldinov | Umidjon | Chief Specialist | Namangan Hydrometeorology Center (Uzbekistan) |
| Kashem | Abul | Training Specialist, CReLIC | LGED (Bangladesh) |
| Khabibullayev | Ravshan | Head, International Relations Division | Ministry of Construction and Housing and Communal Services (Uzbekistan) |
| Khabirov | Abdulfarrukh | Senior Project Officer, Energy Sector Office | ADB Uzbekistan Resident Mission |
| Khaleque | Abdul | Project Director, CRIMP | LGED (Bangladesh) |
| Kohli | Rohini | Head, Climate Change | UNDP |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|--------------------|---------------------------|--|---|
| | | Adaptation – Policy | |
| Krishnamurthy | Krishna | Climate Impact Specialist, Department of the Latin America and the Caribbean Region | GCF Secretariat |
| Kull | Daniel | Director, Development Partnerships Office | WMO |
| Laguillo-Gutierrez | Emilio | Portfolio Management Specialist (Funded Activities), Department of the Latin America and the Caribbean Region | GCF Secretariat |
| Larroquette | Benjamin | Regional Technical Advisor for Climate Change Adaptation | UNDP |
| Latheef | Aishath Thimma | Team Lead for Climate Change and Environment Health | World Health Organisation (Timor-Leste) |
| López | Rafael | Director, Dirección de Información Geográfica, Estratégica y Gestión de Riesgos (DIGEGR) | MAGA (Guatemala) |
| Louiszoon | Sandra | Senior Policy Adviser (Alternate GCF Board Member) | Ministry of Foreign Affairs, the Netherlands |
| Macasil | Maria Lourdes Kathleen | Senior Programme Officer/ CREWS Secretariat | WMO |
| Mahmud | Abdul Hye | National Project Director | DWA (Bangladesh) |
| Majekodunmi | Tenioye | Director General | National Council on Climate Change (Nigeria) |
| Makhmudov | Abdujalil | Lead Specialist, Green Technology Support Division | Ministry of Economy and Finance (Uzbekistan) |
| Makhmudov | Bobur | Head, International Relations Department | Central Asian Green University (Uzbekistan) |
| Makhsudov | Bobomurod | Head, Department for the Implementation of Agrospace Technologies | Ministry of Agriculture (Uzbekistan) |
| Makhtuma | Usmonova | Mahalla Women’s Activist | <i>Mahalla</i> [neighbourhood] Committee (Uzbekistan) |
| Maksud | Sultonov | Head, Division for Coordination of the Interests of Persons with Disabilities in Urban Planning, Energy Efficiency, and Environmental Diplomacy | Ministry of Construction and Housing and Communal Services (Uzbekistan) |
| Mamadzhanov | Alisher | Multilateral Governance Senior Specialist, Office of | GCF Secretariat |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|-----------------|----------------|--|--|
| | | Governance Affairs | |
| Maman | Abdou El Hadji | Regional Monitoring and Evaluation Specialist | Niger Basin Authority |
| Manuel da Silva | Antonio | Vice Coordinator | IFRC Timor-Leste, Manatuto branch |
| Marcal da Costa | Pedro | Ex-NDA President/UNDP project Coordinator | UNDP (Timor-Leste) |
| Marques | Eldita | Fund Management and Procurement Officer | UNEP (Timor-Leste) |
| Marques | Filomena | Local Health Coordinator | RIMES (Timor-Leste) |
| Marufuzzaman | K. M. | Manager, Environment and Climate Change | PKSF (Bangladesh) |
| Mashrabaliyev | Ibrohimbek | Vice Rector | Central Asian Green University (Uzbekistan) |
| Matazu | Ibrahim | Deputy Director | Federal Minister of Finance (Nigeria) |
| Mejía | Mario | Sub-Director | INSIVUMEH (Guatemala) |
| Mercar | Eddie | Beneficiary | ICC (Guatemala) |
| Migraine | Jean-Baptiste | Head of Unit, Technical Coordination and GFCS support | WMO |
| Mirdjaparov | Mirdjakhongir | Task Manager on Early Warning Systems | UNDP (Uzbekistan) |
| Mirshina | Olga | Expert on Hygiene and Environmental Protection | Committee for Sanitary and Epidemiological Welfare and Public Health (Uzbekistan) |
| Mohammed | Ishak | Project Officer, Project Preparation Facility, Department of Investment Services | GCF Secretariat |
| Monterroso | Otoniel | Project Coordinator | IUCN (Guatemala) |
| Montoya | Miguel | Manager | Palo Blanco (Guatemala) |
| Morales | Óscar | Technical Staff | Foundation for the Conservation of Natural Resources and the Environment (Guatemala) |
| Moreira | Alejandra | External Cooperation Advisor | MARN (Guatemala) |
| Morshed | Alamgir | Executive Director | IDCOL (Bangladesh) |
| Mujica | Nadia | GEF/GCF Portfolio Manager | IUCN (Guatemala) |
| Mukhammadaminov | Azizbek | Head, Carbon Trading Division | Ministry of Economy and Finance (Uzbekistan) |
| Mutavaliyev | Mullakhuja | Head, Namangan Hydrometeorology Center | Namangan Hydrometeorology Center (Uzbekistan) |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|---------------|--------------|---|--|
| Mutinsunglire | Kachullu | Project Lead | FAO (Timor-Leste) |
| Mux | César | Farmer | Beneficiary (Guatemala) |
| Narzikulov | Temur | Director, Project Office of the Green Economy Projects Center | Ministry of Economy and Finance (Uzbekistan) |
| Nazarova | Iroda | Lead Specialist, Department of Climate Monitoring and International Projects | Uzhydromet, Department for the Study of Foreign Experience and Development of Scientific Research (Uzbekistan) |
| Negussie | Seblewongel | Gender and Social Specialist, Office of the Chief Strategy and Impact Officer | GCF Secretariat |
| Nifesimi | Ogunkua | Climate Change Specialist | FAO (Nigeria) |
| Nomanov | Avaz | Project Manager | ISCAD/World Bank (Uzbekistan) |
| Noor | Abdur | Institutional Development Specialist | LGED (Bangladesh) |
| Nuruzzaman | Akm | General Manager, Environment and Climate Change | PKSF (Bangladesh) |
| Ogungboye | Adefolarin | Assistant Director, Climate Change Department | Federal Ministry of Water Resources (Nigeria) |
| Onyegule | Glory | Director, Applied Meteorological Services | Nigeria Meteorological Agency (Nigeria) |
| Ordóñez | Ricardo | Farmer | Beneficiary (Guatemala) |
| Ovalle | Andrea | Technical Staff | MAGA (Guatemala) |
| Palao | Leo | Climate Change Officer | ADB Uzbekistan Resident Mission |
| Palasuwan | Thiti | Procurement and Administration Officer | RIMES (Timor-Leste) |
| Paluaniyazov | Bakhadur | Head of Environment and Climate Action Cluster | UNDP in Uzbekistan |
| Parada | Luciano | Staff, MDMC | Baucau (Timor-Leste) |
| Pardayev | Mukhammadjon | Monitoring Specialist | ISCAD / World bank (Uzbekistan) |
| Park | Hansol | Climate Policy Specialist, Office of Governance Affairs | GCF Secretariat |
| Parra | Edgar | BID LAB officer LAC | IDB (Guatemala) |
| Pascoela | Maria | Programme Manager for Disaster Management | IFRC Timor-Leste (CVTL) |
| Paul | Arpan | Assistant Engineer, CReLIC | LGED (Bangladesh) |
| Pavel | Enamul Karim | Head of Renewable Energy | IDCOL (Bangladesh) |
| Peiro Espi | Mario | Partnership Officer, SOFF | WMO |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|------------|-------------------|--|--|
| | | Secretariat | |
| Pérez | Edgar | CEO | Agriteq (Guatemala) |
| Pérez | Fermín | Regional Supervisor | FUNDEA (Guatemala) |
| Perlin | Anna | Partnerships and Resource Mobilization Officer | ITU |
| Perpetua | Maria | Admin and Finance Support | Ministry of Agriculture and Fisheries (Timor-Leste) |
| Prasongsuk | Putcharaporn | Project Administrative Assistant | RIMES (Timor-Leste) |
| Pritul | Afifa Sultana | Assistant Engineer, CReLIC | LGED (Bangladesh) |
| Puac | Marvin | Technical Staff | IUCN (Guatemala) |
| Qodilov | Jamoliddin | Chief Specialist, Department for the Implementation of Modern Irrigation Agrotechnologies | Ministry of Agriculture (Uzbekistan) |
| Qudratilla | Juraev | Chairperson | <i>Mahalla</i> [Neighbourhood] Committee (Uzbekistan) |
| Raimundo | Elías | Relieve Project Coordinator | FAO (Guatemala) |
| Rakhimov | Utkirbek | Head, Department for Ecological Diplomacy and Development of Organic Farming in the Context of Global Climate Change | Ministry of Agriculture (Uzbekistan) |
| Rakhmanov | Nizomiddin | Climate Change Officer | ADB Uzbekistan Resident Mission |
| Rakhmanov | Zafar | Head, DM Department | IFRC (Uzbekistan) |
| Ramírez | Franklin | Project Coordinator | Agriteq (Guatemala) |
| Ramírez | Orsibal | Technical Coordinator | IUCN (Guatemala) |
| Repnik | Markus | Director, SOFF Secretariat | WMO |
| Reyes | Claudia | Technical Staff | Palo Blanco (Guatemala) |
| Ribeiro | Jose | Chief of Department of Hydrology | National Directorate of Water and Sanitation Resources (Timor-Leste) |
| Ribeiro | Nilton | Head, Department of Agriculture and Land Use Geographic Information System (ALGIS) | Ministry of Agriculture and Fisheries (Timor-Leste) |
| Rodar | Ogden | Coordinator | FAO (Guatemala) |
| Rodríguez | Estefania Jimenez | Climate Change Specialist, Programming and Innovation | Adaptation Fund |
| Rodríguez | José María | Technical Staff | INSIVUMEH (Guatemala) |
| Rodríguez | Rebeca | Technical Staff | INSIVUMEH (Guatemala) |
| Rodrigues | Nativadade | Country Coordinator | RIMES (Timor-Leste) |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|--------------|------------|--|---|
| Rojas | Edwin | Director | INSIVUMEH (Guatemala) |
| Rozikhodjaev | Bakhodir | Project Officer | ADB Uzbekistan Resident Mission |
| Rubio | Andrés | BID LAB Officer | IDB (Guatemala) |
| S. | Luis | Technical Staff | Renacimiento (Guatemala) |
| Sabitov | Timur | Head, Investment Promotion and Project Management Department | National Center for Climate Change, Ministry of Ecology, Environmental Protection and Climate Change (Uzbekistan) |
| Safarov | Firuz | Advisor to the Director of the Hydrometeorological Service Agency on Digital Technology Development | Agency of Hydrometeorological Service, Ministry of Ecology, Environmental Protection and Climate Change – Uzhydromet (Uzbekistan) |
| Safronov | Viktor | Chief Specialist, Kamchik Pass Station | Namangan Hydrometeorology Center (Uzbekistan) |
| Santos | Elmer | Technical Staff | FUNDEA (Guatemala) |
| Sardor | Elamonov | Deputy Head, Division for Coordination of the Interests of Persons with Disabilities in Urban Planning, Energy Efficiency, and Environmental Diplomacy | Ministry of Construction and Housing and Communal Services (Uzbekistan) |
| Sattorov | Farrukh | Director | National Center for Climate Change, Ministry of Ecology, Environmental Protection and Climate Change (Uzbekistan) |
| Sattorov | Oydin | Advisor, “Development of a Regional GCF Project in the AFOLU in Central Asia” | GIZ (Uzbekistan) |
| Sawant | Mitesh | Project Manager | RIMES (Timor-Leste) |
| Saywack | Mahendra | Portfolio Management Specialist – Readiness, Department of the Latin America and the Caribbean Region | GCF Secretariat |
| Serech | German | Project Coordinator | ICC (Guatemala) |
| Seyni | Seydou | Regional Coordinator | AfDB, Niger Basin Authority |
| Shahjahan | Kazi | Joint Secretary of GoB, Economic Relations Division | Ministry of Finance (Bangladesh) |
| Sidibe | Moussa | Disaster Risk Management Specialist | World Bank |
| Sigüenza | Raquel | Country Representative | IUCN (Guatemala) |
| Silungwe | Yappy | Principal Natural Resources Management Officer | PIDACC NB Nigeria |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|--------------------|---------------|--|---|
| Silvestre | L. | Technical Staff | ICC (Guatemala) |
| Simón | Pablo | Project Director | Renacimiento (Guatemala) |
| Siquez | Daniela | CSO member | Asociación Teresa (Guatemala) |
| Soares | Bersiana M. | Admin and Finance Support | Ministry of Agriculture and Fisheries (Timor-Leste) |
| Soares | Felisberto | Chief of Department of Extension, Manatuto | Ministry of Agriculture and Fisheries (Timor-Leste) |
| Soares | Maria | Extension Officer Suco Aiteas | Ministry of Agriculture and Fisheries (Timor-Leste) |
| Soares Carvalho | Domingos | Extension Officer Suco Mabaat | Ministry of Agriculture and Fisheries (Timor-Leste) |
| Soares da Silva | Afonso | Commandant, Manatuto | Autoridade Protesaun Civil (Timor-Leste) |
| Soares de Carvalho | Abel | Chief of Department | Autoridade Protesaun Civil (Timor-Leste) |
| Sosa | Aymé | Climate Change Specialist | IDB (Guatemala) |
| Soto | Freddy | Project Specialist Simplified Approval Process, Office of the Chief Investment Officer | GCF Secretariat |
| Speck | Stephanie | Head of Special Initiatives, Office of the Chief Strategy and Impact Officer | GCF Secretariat |
| Spensley | Jason | Senior Climate Change Specialist | Global Environment Facility (GEF) |
| Subramanian | Pattabiraman | Senior Readiness Specialist, Department of Investment Services | GCF Secretariat |
| Sultana | Nahid | Assistant Project Director | Department of Public Health Engineering (DPHE) (Bangladesh) |
| Sumser-Hellstern | Michale | Country Director | KfW Development Bank, Dhaka Office (Bangladesh) |
| Taishi | Yusuke | Head of Climate Change Adaptation Programming | UNDP |
| Talukder | Humayun Kabir | Programme Analyst | UNDP (Bangladesh) |
| Tanimoun | Bachir | Hydrology Expert | Niger Basin Observatory |
| Telesguario | Delia | CSO Member | Asociación Teresa (Guatemala) |
| Tijjani | Unknown | Disaster Risk Reduction Officer | National Emergency Management Agency (Nigeria) |
| Toj | Sabrina | Farmer | Beneficiary (Guatemala) |
| Umirbekov | Pishebay | Programme Analyst on Resilience Building, Europe | UNDP (Uzbekistan) |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|---------------|---------------|---|---|
| | | and Central Asia (ECA) Cluster | |
| Umulisa | Consoloe | Monitoring and Evaluation Officer | UNEP (Timor-Leste) |
| Urista | Rasec | Evaluation Analyst | GEF |
| Us | Rodrigo | IT Coordinator | INSIVUMEH (Guatemala) |
| Vargas | Evelyn | Communications Specialist | IUCN (Guatemala) |
| Vásquez | Jenny | Finance and Climate Governance Advisor | GIZ (Guatemala) |
| Viana Freitas | Fransisco | Coordinator/Commandant, Baucau | <i>Autoridade Protessaun Civil</i> (Timor-Leste) |
| Viggh | Anna | Senior Evaluation Officer | GEF |
| Volkov | Pyotr | Head, Department for ICT Implementation, Digitalization, and Information Security | Ministry of Emergency Situations (Uzbekistan) |
| Voorde | Willem van de | Ambassador Special Envoy for Climate and Environment (Alternate GCF Board Member) SOFF Co-chair | Foreign Affairs, Foreign Trade, and Development Cooperation, Belgium |
| Wasti | Nazeem | Project Preparation Facility and Technical Assistance Specialist, Department of Investment Services | GCF Secretariat |
| White | Ivan Lawrence | Portfolio Management Specialist Funded Activities, Department of the Asia and the Pacific Region | GCF Secretariat |
| Ximenes | Agustinho | Director of Agriculture, Baucau | Ministry of Agriculture and Fisheries (Timor-Leste) |
| Xolmurzayev | Elbek | Lead Specialist, Department for Coordination of the Management and Operation System of the Multi- Apartment Housing Fund and Consolidation of Renovation Projects | Ministry of Construction and Housing and Communal Services (Uzbekistan) |
| Xtasinov | Nuriddin | Head, Division for ICT Implementation, Digitalization, and Information Security | Ministry of Emergency Situations (Uzbekistan) |
| Yuldasheva | Sanobar | School Principal | Secondary school #23 (Uzbekistan) |
| Zabala | Rafael | Country Representative | FAO (Guatemala) |
| Zamirajon | Qorabayeva | Deputy School Principal | Secondary school #23 (Uzbekistan) |

| LAST NAME | FIRST NAME | POSITION/TITLE | AFFILIATION |
|-----------|------------|------------------------------|--|
| Zinsou | Didier | Director | AfDB Niger Basin Observatory |
| [Unknown] | Carla | CSO Member | Asociación Teresa (Guatemala) |
| [Unknown] | Isa | Desk Officer, Climate Change | National Emergency Management Agency (Nigeria) |
| [Unknown] | John | PIDACC Desk Officer | Nigeria Hydrological Services Agency (Nigeria) |
| [Unknown] | [Unknown] | Staff | Radio San Juan (Guatemala) |
| [Unknown] | [Unknown] | Staff | Asociación Supervivencia Cultural (Guatemala) |
| [Unknown] | [Unknown] | Staff | Radio la Niña (Guatemala) |

Annex 3. METHODOLOGY FOR ESTABLISHING THE PORTFOLIO OF CIEWS PROJECTS

To conduct a comprehensive portfolio evaluation, establishing a definitive list of CIEWS projects and programmes was essential. This annex describes the systematic approach used to identify and validate the CIEWS portfolio for this evaluation.

Initial framework and Secretariat classification

The GCF Secretariat has conducted a comprehensive exercise to classify and tag existing GCF projects and programmes according to the paradigm-shifting pathways outlined in each sectoral guide. This tagging work, technically overseen by sectoral experts in the CIEWS sector, is described in an internal Secretariat working document titled “How to tag approved portfolios under 10 sectors and allocate sectoral percentages to generate sectoral data analysis”.

During the inception phase, the evaluation team conducted an extensive desk review of the CIEWS data created by the Secretariat, along with other available documents, to assess the data’s completeness and usability for this evaluation. This review revealed that while the Secretariat’s list provided a good foundation, additional analysis was needed to capture the full scope of CIEWS interventions across the portfolio.

Comprehensive portfolio identification process

The evaluation team employed a multi-step approach to establish a comprehensive list of CIEWS projects:

- **Integration of existing Secretariat exercises:** The evaluation team identified that the Secretariat had undertaken several exercises to identify and tag CIEWS-related projects up to B.34. Through reviewing the Secretariat’s work, three additional data sets were discovered: agriculture projects (CIS) and insurance, insurance projects in the agricultural sector, and a data insurance dashboard. Analysis of these files yielded 13 additional projects requiring review for CIEWS components.
- **Complementary AI-assisted analysis:** To address inherent challenges in identifying cross-cutting CIEWS interventions across multiple results areas, the evaluation team conducted a comprehensive analysis of the entire GCF portfolio using the institutional GPT-4o API. For projects approved after B.34 (not covered in the Secretariat’s tagging supplementary exercise) and a review of the pre-B.34 portfolio, the team applied the CIEWS definition developed for this evaluation² with a temperature setting of 0 to ensure consistent and deterministic results. This analysis focused specifically on project outputs and outcomes, identifying 19 additional projects with CIEWS elements (including FP192 from the pre-B.34 portfolio).
- **Human verification and validation:** The combined analysis yielded the final 141 projects containing CIEWS components (100 from the Secretariat’s original identification, 41 based on additional review by the evaluation team). A final human verification process was conducted to validate each project’s CIEWS relevance.

² A set of systems designed to understand, anticipate and manage risks related to the effects of climate change with the aim of protecting lives, livelihoods, assets and investment. For populations, communities, governments, and both public and private organizations, CIEWS rely on the collection, monitoring, and analysis of weather and climate data to enable understanding of historical and present trends and prediction of future conditions (i.e. CIS), as well as warning, communication and dissemination networks (i.e. EWS). These systems facilitate the making and sharing of evidence-based decisions that lead to preparedness and timely actions to reduce climate risks and increase adaptive capacity to climate change.

Final portfolio composition

Through this comprehensive methodology, the evaluation team established a final list of 141 projects containing substantive CIEWS components. This validated portfolio formed the basis for all data analyses presented in Chapter 3 of the final report. The complete list of the 141 CIEWS-tagged projects is provided in Annex 4.

Annex 4. LIST OF CIEWS PROJECTS

| APPROVED REFERENCE | PROJECT NAME | BOARD MEETING | CIEWS WEIGHT |
|--------------------|--|---------------|--------------|
| FP002 | Scaling up the use of Modernized Climate information and Early Warning Systems in Malawi | B.11 | 0.5000 |
| FP004 | Climate Resilient Infrastructure Mainstreaming (CRIM) | B.11 | 1.0000 |
| FP012 | Africa Hydromet Program – Strengthening Climate Resilience in Sub-Saharan Africa: Mali Country Project | B.13 | 0.5000 |
| FP013 | Improving the resilience of vulnerable coastal communities to climate change related impacts in Viet Nam | B.13 | 0.4600 |
| FP016 | Strengthening the resilience of smallholder farmers in the Dry Zone to climate variability and extreme events through an integrated approach to water management | B.13 | 0.1150 |
| FP018 | Scaling-up of Glacial Lake Outburst Flood (GLOF) risk reduction in Northern Pakistan | B.14 | 0.3700 |
| FP021 | Senegal Integrated Urban Flood Management Project | B.14 | 0.2100 |
| FP024 | Empower to Adapt: Creating Climate-Change Resilient Livelihoods through Community-Based Natural Resource Management (CBNRM) in Namibia | B.14 | 0.2600 |
| FP026 | Sustainable Landscapes in Eastern Madagascar | B.14 | 0.3438 |
| FP034 | Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda | B.15 | 0.3500 |
| FP035 | Climate Information Services for Resilient Development Planning in Vanuatu (Van-CIS-RDP) | B.15 | 0.1600 |
| FP037 | Integrated Flood Management to Enhance Climate Resilience of the Vaisigano River Catchment in Samoa | B.15 | 0.0700 |
| FP041 | Simiyu Climate Resilient Project | B.16 | 0.4040 |
| FP048 | Low Emissions and Climate Resilient Agriculture Risk Sharing Facility | B.18 | 0.2690 |
| FP049 | Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4) | B.18 | 0.4373 |
| FP050 | Bhutan for life | B.18 | 0.1614 |
| FP053 | Enhancing climate change adaptation in the North coast and Nile Delta Regions in Egypt | B.18 | 1.0000 |
| FP056 | Scaling up climate resilient water management practices for vulnerable communities in La Mojana | B.18 | 0.1100 |
| FP066 | Pacific Resilience Project Phase II for RMI | B.19 | 0.5900 |
| FP067 | Building climate resilience of vulnerable and food insecure communities through capacity strengthening and livelihood diversification in mountainous regions of Tajikistan | B.19 | 0.6348 |
| FP068 | Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia | B.19 | 0.4850 |
| FP069 | Enhancing adaptive capacities of coastal communities, especially women, to cope with climate change induced salinity | B.19 | 0.4900 |

| APPROVED REFERENCE | PROJECT NAME | BOARD MEETING | CIEWS WEIGHT |
|--------------------|---|---------------|--------------|
| FP072 | Strengthening climate resilience of agricultural livelihoods in Agro-Ecological Regions I and II in Zambia | B.19 | 0.2000 |
| FP073 | Strengthening Climate Resilience of Rural Communities in Northern Rwanda | B.19 | 0.1300 |
| FP074 | Africa Hydromet Program – Strengthening Climate Resilience in Sub-Saharan Africa: Burkina Faso Country Project | B.19 | 0.4000 |
| FP075 | Institutional Development of the State Agency for Hydrometeorology of Tajikistan | B.19 | 1.0000 |
| FP076 | Climate-friendly Agribusiness Value Chains Sector Project | B.19 | 0.2365 |
| FP078 | Acumen Resilient Agriculture Fund (ARAF) | B.19 | 0.3495 |
| FP087 | Building livelihood resilience to climate change in the upper basins of Guatemala's highlands | B.21 | 0.4300 |
| FP089 | Upscaling climate resilience measures in the dry corridor agroecosystems of El Salvador (RECLIMA) | B.21 | 0.2722 |
| FP092 | Programme for integrated development and adaptation to climate change in the Niger Basin (PIDACC/NB) | B.21 | 0.2600 |
| FP094 | Ensuring climate resilient water supplies in the Comoros Islands | B.21 | 0.2000 |
| FP101 | Resilient Rural Belize (Be-Resilient) | B.22 | 0.5150 |
| FP107 | Supporting Climate Resilience and Transformational Change in the Agriculture Sector in Bhutan | B.23 | 0.5000 |
| FP108 | Transforming the Indus Basin with Climate Resilient Agriculture and Water Management | B.23 | 0.2500 |
| FP109 | Safeguarding rural communities and their physical and economic assets from climate induced disasters in Timor-Leste | B.23 | 0.7500 |
| FP112 | Addressing Climate Vulnerability in the Water Sector (ACWA) in the Marshall Islands | B.23 | 0.1900 |
| FP113 | TWENDE: Towards Ending Drought Emergencies: Ecosystem Based Adaptation in Kenya's Arid and Semi-Arid Rangelands | B.23 | 0.5000 |
| FP114 | Program on Affirmative Finance Action for Women in Africa (AFAWA): Financing Climate Resilient Agricultural Practices in Ghana | B.23 | 0.1932 |
| FP124 | Strengthening Climate Resilience of Subsistence Farmers and Agricultural Plantation Communities residing in the vulnerable river basins, watershed areas and downstream of the Knuckles Mountain Range Catchment of Sri Lanka | B.25 | 0.3300 |
| FP125 | Strengthening the resilience of smallholder agriculture to climate change-induced water insecurity in the Central Highlands and South-Central Coast regions of Vietnam | B.25 | 0.5000 |
| FP127 | Building Climate Resilience of Vulnerable Agricultural Livelihoods in Southern Zimbabwe | B.25 | 0.5000 |
| FP133 | Resilience to hurricanes in the building sector in Antigua and Barbuda | B.26 | 0.2500 |
| FP139 | Building resilience in the face of climate change within traditional rain-fed agricultural and pastoral systems in Sudan | B.26 | 0.3357 |

| APPROVED REFERENCE | PROJECT NAME | BOARD MEETING | CIEWS WEIGHT |
|--------------------|--|---------------|--------------|
| FP141 | Improving Adaptive Capacity and Risk Management of Rural communities in Mongolia | B.27 | 0.3800 |
| FP145 | RELIVE – REsilient LIVELihoods of vulnerable smallholder farmers in the Mayan landscapes and the Dry Corridor of Guatemala | B.27 | 0.5200 |
| FP147 | Enhancing Climate Information and Knowledge Services for resilience in 5 island countries of the Pacific Ocean | B.27 | 1.0000 |
| FP157 | Coastal Resilience to Climate Change in Cuba through Ecosystem Based Adaptation – “MI COSTA” | B.28 | 0.1100 |
| FP160 | Monrovia Metropolitan Climate Resilience Project | B.28 | 1.0000 |
| FP161 | Building Regional Resilience through Strengthened Meteorological, Hydrological and Climate Services in the Indian Ocean Commission (IOC) Member Countries | B.28 | 1.0000 |
| FP162 | The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW) | B.28 | 0.5200 |
| FP165 | Building Climate Resilient Safer Islands in the Maldives | B.29 | 0.7500 |
| FP170 | Enhancing climate resilience in Thailand through effective water management and sustainable agriculture | B.30 | 0.4859 |
| FP171 | Enhancing Early Warning Systems to build greater resilience to hydro-meteorological hazards in Timor-Leste | B.30 | 0.5000 |
| FP175 | Enhancing community resilience and water security in the Upper Athi River Catchment Area, Kenya | B.30 | 0.3000 |
| FP179 | Tanzania Agriculture Climate Adaptation Technology Deployment Programme (TACATDP) | B.30 | 0.4765 |
| FP182 | Climate-smart initiatives for climate change adaptation and sustainability in prioritized agricultural production systems in Colombia (CSICAP) | B.31 | 0.0900 |
| FP183 | Inclusive Green Financing Initiative (IGREENFIN I): Greening Agricultural Banks & the Financial Sector to Foster Climate Resilient, Low Emission Smallholder Agriculture in the Great Green Wall (GGW) countries - Phase I | B.31 | 0.0400 |
| FP184 | Vanuatu community-based climate resilience project (VCCRP) | B.32 | 0.0900 |
| FP185 | Climate change: The new evolutionary challenge for the Galapagos | B.32 | 0.0100 |
| FP192 | The R's (Reduce, Reuse and Recycle) for Climate Resilience Wastewater Systems in Barbados (3R-CReWS) | B.34 | 0.4375 |
| FP197 | Green Guarantee Company (“GGC”) | B.34 | 0.1667 |
| FP199 | Public-Social-Private Partnerships for Ecologically-Sound Agriculture and Resilient Livelihood in Northern Tonle Sap Basin (PEARL) | B.35 | 0.3000 |
| FP201 | Adapting Philippine Agriculture to Climate Change (APA) | B.35 | 0.2500 |
| FP202 | Upscaling Ecosystem Based Climate Resilience of Vulnerable Rural Communities in the Valles Macro-region of the Plurinational State of Bolivia (RECEM-Valles) | B.35 | 0.1500 |

| APPROVED REFERENCE | PROJECT NAME | BOARD MEETING | CIEWS WEIGHT |
|--------------------|--|---------------|--------------|
| FP203 | Heritage Colombia (HECO): Maximizing the Contributions of Sustainably Managed Landscapes in Colombia for Achievement of Climate Goals | B.35 | 0.0200 |
| FP205 | Infrastructure Climate Resilient Fund (ICRF) | B.35 | 1.0000 |
| FP206 | Resilient Homestead and Livelihood support to the vulnerable coastal people of Bangladesh (RHL) | B.36 | 0.6300 |
| FP207 | Recharge Pakistan: Building Pakistan's resilience to climate change through Ecosystem-based Adaptation (EbA) and Green Infrastructure for integrated flood risk management | B.36 | 0.5000 |
| FP214 | Thai Rice: Strengthening Climate-Smart Rice Farming | B.37 | 0.1525 |
| FP215 | Community Resilience Partnership Program | B.37 | 0.1300 |
| FP216 | Scaling up climate resilient flood risk management in Bosnia and Herzegovina | B.37 | 0.0800 |
| FP217 | Building Resilience of Vulnerable Communities to Climate Variability in Rwanda's Congo Nile Divide through Forest and Landscape Restoration | B.37 | 0.2188 |
| FP219 | Staple Crops Processing Zone (SCPZ): Promoting Sustainable Agricultural Value Chains | B.37 | 0.1421 |
| FP222 | Renewable Energy Performance Platform (REPP 2) | B.37 | 0.1000 |
| FP223 | Project GAIA ("GAIA") | B.37 | 0.0350 |
| FP227 | Increase Resilience to Climate Change of Smallholders Receiving the Services of the Inclusive Agricultural Value Chains Programme (DEFIS +) | B.38 | 0.2164 |
| FP228 | Cambodian Climate Financing Facility | B.38 | 0.2860 |
| FP232 | Jordan Integrated Landscape Management Initiative (JILMI) | B.39 | 0.1992 |
| FP233 | Community-based Agriculture Support Programme "plus" (CASP+) | B.39 | 0.2554 |
| FP234 | Tonga Coastal Resilience | B.39 | 0.5000 |
| FP236 | Basin Approach for Livelihood Sustainability through Adaptation Strategies (BALSAS) | B.39 | 0.2500 |
| FP238 | Ecosystems-based Adaptation for resilient Watersheds and Communities in Malawi (EbAM) | B.39 | 0.1496 |
| FP239 | Building Climate Resilience for Food and Livelihoods in the Horn of Africa (BREFOL) | B.39 | 0.1521 |
| FP240 | Collaborative R&DB Programme for Promoting the Innovation of Climate Technopreneurship | B.39 | 0.1310 |
| FP242 | Caribbean Net-Zero and Resilient Private Sector | B.39 | 0.2500 |
| FP244 | Climate Resilient Health and Well-Being for Rural Communities in southern Malawi (CHWBRC) | B.40 | 0.3687 |
| FP246 | Climate Resilient Agriculture in Somalia (Ugbaad) | B.40 | 0.1680 |
| FP247 | Local Climate Adaptive Living Facility Plus (LoCAL+) – West Africa (Burkina Faso, Ivory Coast, Mali and Niger) | B.40 | 0.6250 |

| APPROVED REFERENCE | PROJECT NAME | BOARD MEETING | CIEWS WEIGHT |
|--------------------|---|---------------|--------------|
| FP249 | Strengthening climate Resilience of Vulnerable Agriculture Livelihoods in Iraq (SRVALI) | B.40 | 0.8946 |
| FP250 | Achieving emission reduction in the Central Highlands and South Central Coast of Viet Nam to support National REDD+ Action Programme goals (RECAF) | B.40 | 0.1466 |
| FP252 | Acumen Resilient Agriculture Fund II | B.40 | 0.3328 |
| FP255 | Transforming Livelihoods through Climate Resilient, Low Carbon, Sustainable Agricultural Value Chains in the Lake Region Economic Bloc, Kenya | B.41 | 0.3450 |
| FP256 | Intensification of Agriculture and Agroforestry Techniques (IAAT) for Climate Resilient Food and Nutrition Security: Tombouctou, Gao, Mopti, Koulikoro and Segou regions of Mali | B.41 | 0.2071 |
| FP258 | Multi-country Project Advancing Early Warnings for All (EW4All) | B.41 | 0.7123 |
| FP259 | Adapting Tuna-Dependent Pacific Island Communities and Economies to Climate Change | B.41 | 0.3330 |
| FP261 | Improving Climate Resilience by Increasing Water Security in the Amazon Basin | B.41 | 0.0800 |
| FP262 | Green Climate Finance Facility for Fostering Climate-Smart Agriculture in Senegal | B.41 | 0.2047 |
| FP267 | Scaling up ecosystem-based approaches to managing climate-intensified disaster risks in vulnerable regions of South Africa (“Eco-DRR”) | B.42 | 0.5000 |
| FP268 | Scaling-Up Resilience in Africa’s Great Green Wall (SURAGGWA) | B.42 | 0.3330 |
| FP270 | Climate Adaptive Irrigation and Sustainable Agriculture for Resilience (CAISAR) in Cambodia | B.42 | 0.0667 |
| FP272 | Protecting livelihoods and assets at risk from Glacial Lake Outburst Floods (GLOFs) and climate change-induced flooding in glacial river basins of Nepal | B.42 | 0.5000 |
| FP276 | GCF’s investment into the Global Green Bond Initiative (GGBI) (previously known as Green and Resilience Debt Platform (GRDP)) | B.42 | 0.0330 |
| FP279 | Enhancing Climate Resilience in Flood-Prone Areas in Northwestern South Sudan (ECRF) | B.43 | 0.3459 |
| FP283 | Glaciers to Farms (G2F) Regional Program: Advancing Climate Resilience & Sustainable Development in Central and West Asia | B.43 | 0.1334 |
| SAP001 | Improving rangeland and ecosystem management practices of smallholder farmers under conditions of climate change in Sesfontein, Fransfontein, and Warmquelle areas of the Republic of Namibia | B.19 | 0.5000 |
| SAP002 | Climate services and diversification of climate sensitive livelihoods to empower food insecure and vulnerable communities in the Kyrgyz Republic | B.21 | 0.8000 |
| SAP003 | Enhancing climate resilience of the water sector in Bahrain | B.21 | 0.3435 |

| APPROVED REFERENCE | PROJECT NAME | BOARD MEETING | CIEWS WEIGHT |
|--------------------|--|---------------|--------------|
| SAP007 | Integrated Climate Risk Management for Food Security and Livelihoods in Zimbabwe focusing on Masvingo and Rushinga Districts | B.23 | 0.6000 |
| SAP008 | Extended Community Climate Change Project-Flood (ECCCP-Flood) | B.24 | 0.5000 |
| SAP010 | Multi-Hazard Impact-Based Forecasting and Early Warning System for the Philippines | B.24 | 1.0000 |
| SAP011 | Climate-resilient food security for women and men smallholders in Mozambique through integrated risk management | B.24 | 0.5593 |
| SAP018 | Enhancing Climate Information Systems for Resilient Development in Liberia (Liberia CIS) | B.27 | 1.0000 |
| SAP020 | Climate resilient food security for farming households across the Federated States of Micronesia (FSM) | B.28 | 0.4500 |
| SAP022 | Enhancing Multi-Hazard Early Warning System to increase resilience of Uzbekistan communities to climate change induced hazards | B.28 | 1.0000 |
| SAP025 | Adaptation of agricultural production systems in Coastal Areas of Northwest Guinea-Bissau | B.34 | 0.3941 |
| SAP026 | Extended Community Climate Change Project-Drought (ECCCP-Drought) | B.36 | 0.2891 |
| SAP027 | Solomon Islands Knowledge-Action-Sustainability for Resilient Villages (SOLKAS) Project | B.36 | 0.5000 |
| SAP028 | Women-Adapt: Enhancing the climate change adaptive capacity of smallholder farmer communities in the Poro Region, focusing on vulnerable women and youth | B.36 | 0.6000 |
| SAP030 | Strengthening Climate Resilience of the Lao People's Democratic Republic (PDR) Health System | B.37 | 0.2500 |
| SAP033 | Enhancing Climate Information Systems for Resilient Development in Sierra Leone | B.37 | 0.1000 |
| SAP034 | Akamatutu'anga To Tatou Ora'anga Meitaki (ATOM): Building a healthy and resilient Cook Islands Community – one block at a time | B.38 | 0.6667 |
| SAP036 | Sierra Leone Coastal Resilience Project (SLCRP) | B.38 | 0.3265 |
| SAP038 | Climate Adaptation, Resilience and Engagement in Local Governments (CARE-LG) | B.39 | 0.1250 |
| SAP039 | Integrated climate risk management for strengthened resilience to climate change in Buner and Shangla Districts of Khyber Pakhtunkhwa Province, Pakistan | B.39 | 0.5000 |
| SAP040 | Climate Adaptation and Resilience in Thua Thien Hue Province Vietnam (CARE Hue) | B.39 | 0.2000 |
| SAP041 | ALBAdapt – Climate Services for a Resilient Albania | B.39 | 0.5000 |
| SAP042 | Building climate resilience by linking climate adaptation and social protection through decentralised planning in Mozambique (LINK) | B.39 | 0.3855 |
| SAP043 | Upscaling “Naatangue” integrated family and village farms for a resilient agriculture in Senegal | B.39 | 0.2951 |

| APPROVED REFERENCE | PROJECT NAME | BOARD MEETING | CIEWS WEIGHT |
|--------------------|--|---------------|--------------|
| SAP046 | Strengthening Climate Information and Multi-Hazard Early Warning Systems for Increased Resilience in Azerbaijan | B.40 | 0.7000 |
| SAP048 | Strengthening the resilience of vulnerable communities within high climatic and disaster risk areas in Togo | B.41 | 0.9000 |
| SAP049 | Sustainable Communities for Climate Action in the Yucatán Peninsula (ACCIÓN) | B.41 | 0.3000 |
| SAP050 | Toward Risk-Aware and Climate-resilient communities (TRACT) - Strengthening climate services and impact-based multi-hazard early warning in Maldives | B.42 | 1.0000 |
| SAP051 | Increasing resilience to the health risks of climate change in the Federated States of Micronesia | B.42 | 0.3000 |
| SAP055 | Strengthening the Health Resilience of Communities Vulnerable to Climate Change in Benin's ABD (Adjohoun, Bonou and Dangbo) Zone | B.43 | 0.6630 |
| SAP056 | Climate Resilience in the Guiriko Region | B.43 | 0.3500 |
| SAP058 | Local Governments and Climate Change III (LGCC-3) | B.43 | 0.7500 |
| SAP060 | Promoting Climate Resilient Livelihoods for Food Insecure People in Southern Iraq | B.43 | 0.3000 |
| SAP062 | Dominica Community Resilience Enhancement Project (DOMCREP) | B.43 | 0.3000 |
| SAP063 | Scaling up of Caribbean Hydrometeorological and Multi-hazard Early Warning Services (CREWS) in Belize and Trinidad and Tobago | B.43 | 0.7211 |
| SAP065 | Harnessing Insurance for Climate Resilience in Indian Agriculture | B.43 | 0.4395 |

Source: As categorized and compiled by the evaluation team as per the methodology explained in the final report.

Annex 5. AI-ASSISTED PATHWAY CLASSIFICATION METHODOLOGY FOR CIEWS PROJECTS AND CLUSTER ASSESSMENTS

1. Executive summary

This annex describes the technical methodology employed for classifying CIEWS projects into three paradigm-shifting pathways. The classification system utilizes OpenAI's GPT-4o (version: GPT-4o via Azure OpenAI Service, API version 2025-01-01-preview) in a structured, multi-stage approach with arithmetic consensus mechanisms and human verification to ensure accuracy and consistency.

2. Pathway classification framework

2.1. CIEWS definition

The evaluation adopted the following definition for CIEWS “A set of systems designed to understand, anticipate, and manage risks related to the effects of climate change with the aim of protecting lives, livelihoods, assets and investments.”

2.2. Three paradigm-shifting pathways

2.2.1. Pathway 1: Strengthening climate information services

- *Focus:* Generating science-based climate information for policy and investment decisions
- *Key components:* Implementation of the Global Framework for Climate Services and its sectoral applications (agriculture, water, health, energy)
- *Primary beneficiaries:* government institutions, sectoral decision makers

2.2.2. Pathway 2: Promoting impact-based MHEWS and early action

- *Focus:* People-centred early warning systems and community preparedness
- *Key components:* Four pillars of MHEWS (risk knowledge, detection/monitoring, preparedness, warning dissemination)
- *Primary beneficiaries:* Vulnerable communities, local populations

2.2.3. Pathway 3: Improving CIEWS for investment and financial decisions

- *Focus:* Climate information for financial sector and investment decisions
- *Key components:* Risk transfer mechanisms, investment analysis, financial instruments
- *Primary beneficiaries:* Financial sector, insurance industry, investment planners

3. Technical methodology

3.1. Data-processing pipeline

The classification system employed a three-stage pipeline:

3.1.1. Stage 1: Data extraction

- *Source:* Raw project descriptions extracted from funding proposals

- *Format*: Plain text files (.txt) containing detailed project information
 - *Processing*: UTF-8 encoding with error handling for special characters
- 3.1.2. Stage 2: AI-powered analysis
- *Rationale generation*: Each project underwent 2–4 iterations of comprehensive analysis using GPT-4o with temperature setting of 0.3 for consistency
 - *Pathway testing*: Independent evaluation against each pathway definition with 5–10 voting iterations at temperature 0.2 for deterministic results
 - *Consensus-building*: Arithmetic (non-large language model (LLM)) aggregation of votes to determine final classification
- 3.1.3. Stage 3: Quality assurance
- Automatic flagging of edge cases (consensus below 70 per cent)
 - AI verification with Claude Opus 4 for quality assurance
 - Human verification of flagged projects
 - Cross-validation through multiple independent runs

3.2. **Consensus mechanism**

The methodology implemented an arithmetic consensus approach rather than LLM-based consensus. For each project:

- 3.2.1. Generate multiple independent classifications (5–10 iterations)
- 3.2.2. Count votes for each pathway
- 3.2.3. Calculate formula: $consensus\ percentage = \left(\frac{max_votes}{total_votes}\right) \times 100$
- 3.2.4. Determine confidence level:
 - High: ≥ 80 per cent consensus with majority high-confidence votes
 - Medium: 60–79 per cent consensus
 - Low: < 60 per cent consensus
- 3.2.5. Flag for review if consensus < 70 per cent or confidence is low

3.3. **Classification rules and thresholds**

- 3.3.1. Primary pathway selection
 - Projects classified based on primary purpose and main activities
 - Pathway 1 and 2 require 4/5 votes (80 per cent) for positive classification
 - Pathway 3 requires 5/5 votes (100 per cent) due to its specialized nature
 - Projects DO NOT need to meet all criteria of a pathway, only demonstrate clear alignment with core objectives
- 3.3.2. Secondary pathway identification
 - Enabled identification of multiple pathways per project
 - Stricter thresholds applied to avoid over-classification

- Each pathway evaluated independently to identify all relevant components

3.4. Subsector classification (Pathway 1)

For projects classified under Pathway 1, an additional subsector analysis was performed:

- Agriculture and food security
- Water resources
- Health systems
- Energy infrastructure

Each subsector underwent three independent evaluations with majority voting determining final classification.

4. Implementation details

4.1. Technical parameters

4.1.1. API configuration

- Model: GPT-4o (Azure OpenAI Service)
- Max tokens: 8,000 per request
- Temperature: 0.2–0.3 (optimized for consistency)
- Top-p: 1.0
- Frequency penalty: 0
- Presence penalty: 0

4.1.2. Processing controls

- Retry logic: Maximum three retries with exponential backoff
- Rate limiting: 0.3–0.5 second delays between API calls
- Error handling: Comprehensive exception management with fallback mechanisms

4.2. Adaptive voting system

The system implemented an intelligent voting mechanism:

- Initial voting round (5 iterations)
- Early stopping if unanimous high-confidence consensus achieved
- Expansion to 10 votes if disagreement detected
- Rationale caching to ensure consistency across multiple runs

5. Quality control and validation

5.1. Multi-run validation

Three independent classification runs were performed with comparison analysis:

- Inter-run agreement rate calculated
- Projects with differing classifications flagged for review
- Combined vote tallies used for final determination

5.2. Human verification process

5.2.1. Verification criteria

- All projects flagged by the algorithm (consensus <70 per cent)
- Projects with pathway disagreements across runs
- Random sample of 10 per cent high-confidence classifications

5.2.2. Verification process

- Expert review of project description
- Assessment against pathway definitions
- Validation or correction of AI classification
- Documentation of decision rationale

5.3. *Edge case management*

Projects identified as edge cases received additional scrutiny:

- Split decisions (e.g. equal votes for multiple pathways)
- Low confidence classifications
- Projects with no clear pathway alignment
- Projects potentially fitting multiple pathways equally

6. Results and performance metrics

6.1. *Classification distribution*

The methodology successfully classified projects across all three GCF sectoral guide pathways, with Pathway 1 (climate information services) and Pathway 2 (MHEWS and early action) representing the majority of operational climate projects, while Pathway 3 (investment and financial decisions) captured specialized financial instruments as expected.

6.2. *Consensus metrics*

- Average consensus percentage: >75 per cent across all classifications
- High-confidence classifications: Approximately 65 per cent of projects
- Projects requiring human review: 15–20 per cent of total portfolio

6.3. *Consistency measures*

The use of low temperature settings (0.2–0.3) and rationale caching resulted in:

- High reproducibility across multiple runs
- Consistent classifications for identical inputs
- Reduced variability in edge cases

7. Methodological advantages

- *Transparency*: All voting records preserved for audit
- *Scalability*: Capable of processing large project portfolios efficiently
- *Consistency*: Arithmetic consensus eliminates LLM-based variability
- *Adaptability*: Thresholds and parameters adjustable based on requirements
- *Human-in-the-loop*: Critical decisions verified by domain experts

8. Limitations and considerations

- *Pathway overlap*: Some projects naturally span multiple pathways; the methodology captures this through secondary pathway identification

- *Context dependency*: Classification accuracy depends on quality and completeness of project descriptions
- *Threshold sensitivity*: Results sensitive to voting thresholds, particularly for Pathway 3
- *Language limitations*: Analysis limited to English-language project descriptions

9. Recommendations for future application

- *Continuous refinement*: Regular updating of pathway definitions based on evolving climate finance landscape
- *Expanded validation*: Increase human verification sample size for high-stakes decisions
- *Cross-validation*: Compare AI classifications with independent expert assessments
- *Performance monitoring*: Track classification accuracy over time to identify improvement opportunities

10. Conclusion

The AI-assisted pathway classification methodology provides a robust, scalable, and transparent approach to categorizing CIEWS projects. The combination of GPT-4o's analytical capabilities, arithmetic consensus mechanisms, and other AI models such as Claude Opus 4 and human verification ensures both efficiency and accuracy in project classification. This approach successfully balances automation with human oversight, making it suitable for large-scale portfolio analysis while maintaining the nuance required for complex climate finance projects.

The methodology's emphasis on primary purpose classification, strict thresholds for specialized pathways, and comprehensive quality control measures ensures that projects are appropriately categorized according to their core objectives and activities, supporting evidence-based decision-making in climate finance evaluation.

Annex 6. IMPUTING INVESTMENT WEIGHTS

We evaluated three modelling approaches to predict missing CIEWS weights for 41 projects:

1. Budget quantiles model (Baseline model): The projects were divided into four groups according to quantiles of total GCF funding (in USD million):

- Quantile 1: *Budget* \in (5, 17.76]
- Quantile 2: *Budget* \in (17.76, 25.22]
- Quantile 3: *Budget* \in (25.22, 40.86]
- Quantile 4: *Budget* \in (40.86, 253.76]

For each group, **the average project weight** in the training set was calculated and then assigned to the corresponding target projects.

2. Probability-based classifier: All training projects were divided into three groups based on CIEWS weight:

- Group 1, “Low” CIEWS: *Weight* \in (0,0.25]
- Group 2, “Medium” CIEWS: *Weight* \in (0.25,0.5]
- Group 3, “High” CIEWS: *Weight* \in (0.5,1.0]

A classifier model is trained to predict the probability that a project belongs to each group. The final predicted weight for a project is then computed as a **weighted sum of the class probabilities multiplied by the group average weights**:

$$w_{pred} = \sum_{g=1}^3 p_g \cdot \bar{w}_g$$

where:

w_{pred} - predicted weight for a project

p_g - predicted probability that the project belongs to group g

\bar{w}_g - average weight of group g

3. Non-linear regression model (CatBoost regressor) predicting continuous weights directly, rather than classifying into groups.

3.1. Feature selection

We prepared a training data set consisting of **100 CIEWS-related projects** tagged by the Secretariat. After removing less informative features, only the following remained to train models #2 (classifier) and #3 (regressor):

- **RA_VC:** Score of *ARA1: Livelihoods of people and communities* result area, sourced from GCF Projects API.
- **RA_HW:** Score of *ARA2: Health, food and water security* result area, sourced from GCF Projects API.
- **RA_IB:** Score of *ARA3: Infrastructure and built environment* result area, sourced from GCF Projects API.
- **NormTermCount:** A normalized text-based metric calculated from each project’s FP document:

$$NormTermCount = \frac{TermsOccurrenceCount}{WordsCount} \times 1000$$

where:

TermsOccurrenceCount – the number of words in the document matching any of the following terms: [“early warning systems”, “ews”, “ciews”, “climate information”, “climate data”, “forecasting”, “multihazard”].

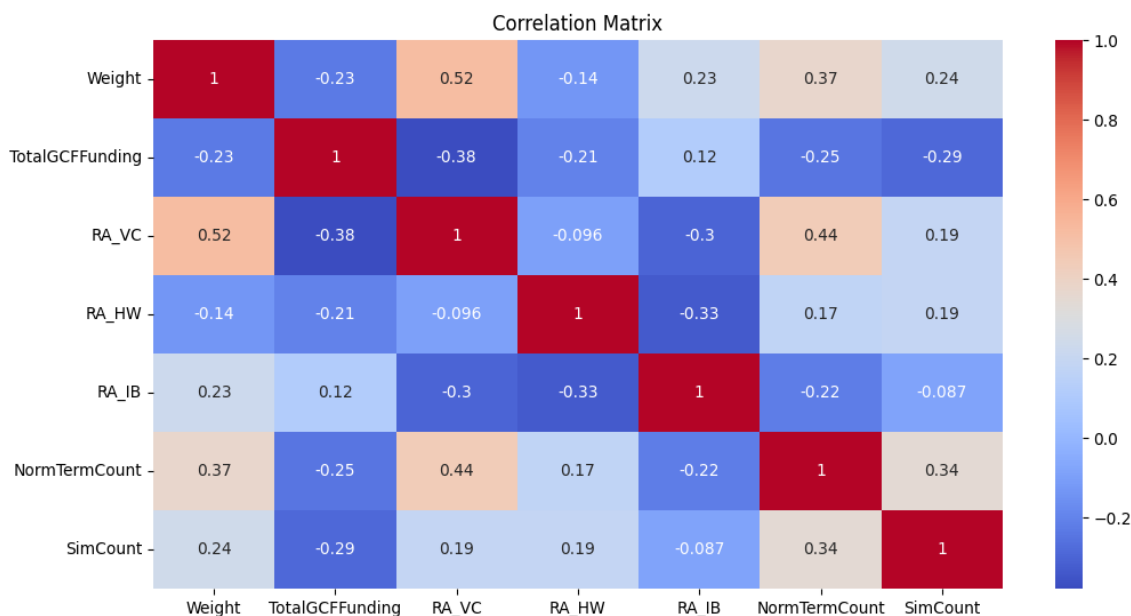
WordsCount – the total number of words in the document.

- **SimCount:** A semantic similarity metric based on the *ProjectTags* table from the *FundedActivities General* semantic model, which contains taxonomy of project-related tags. Each tag was embedded using the *all-mpnet-base-v2* sentence-transformer model. The cosine similarity between each tag and the reference phrase “early warning systems and climate information services” was computed. **SimCount** is defined as the number of tags with similarity score > 0.4.
- **AccessModality:** A categorical feature indicating the project’s access modality, identifying whether a project is an FP or SAP.

Additionally, the variable **TotalGCFFunding** was sourced from the GCF Projects API and used exclusively in Model #1 (Baseline).

The figure below shows the Pearson correlation coefficients between the target variable and each feature, providing an overview of their linear relationships.

Figure A – 1. Pearson correlation matrix between target and features



Source: Funded activity semantic model and the author's elaboration.

3.2. Model evaluation

We evaluated the models using three widely used regression metrics:

Mean absolute error (MAE) – average absolute difference between predictions and true values:

$$MAE = \frac{1}{n} \sum |y_i - \hat{y}_i|$$

Lower values indicate more accurate predictions.

Root mean squared error (RMSE) – measures the square root of the average squared differences between predicted and actual values:

$$RMSE = \sqrt{\frac{1}{n} \sum (y_i - \hat{y}_i)^2}$$

RMSE penalizes larger errors more heavily than MAE.

Coefficient of determination (R^2) – indicates the proportion of variance in the target variable explained by the model:

$$R^2 = 1 - \frac{SS_{res}}{SS_{tot}}$$

where:

SS_{res} = variance not explained by the model

SS_{tot} = total variance in the data

An R^2 value close to 1 indicates strong explanatory power, while values near 0 mean little to no explanatory strength

Table A – 1 summarizes the evaluation results for all three models. Results are reported as the average across a **5-fold cross-validation** procedure, where the training data set is split into five equally sized folds. In each iteration, four folds are used for training and one fold for validation, rotating until every fold has been used once. This approach reduces sensitivity to random splits and provides a more reliable estimate of model performance.

Table A – 1. Overall model evaluation results

| MODEL | MAE | RMSE | R^2 |
|------------|--------|--------|--------|
| Baseline | 0.2129 | 0.2669 | 0.0560 |
| Classifier | 0.1938 | 0.2427 | 0.2243 |
| Regressor | 0.1578 | 0.2012 | 0.4244 |

Source: Compiled by the evaluation team.

Additionally, Table A – 2 presents results across all individual folds for models #2 and #3.

Table A – 2. Model performance across 5 cross-validation folds

| FOLD | MAE | | RMSE | | R^2 | |
|------|--------|--------|--------|--------|--------|--------|
| | Class. | Regr. | Class. | Regr. | Class. | Regr. |
| 1 | 0.2482 | 0.1272 | 0.2910 | 0.1549 | 0.2683 | 0.7926 |
| 2 | 0.1755 | 0.1971 | 0.2282 | 0.2451 | 0.2313 | 0.1131 |
| 3 | 0.1653 | 0.1492 | 0.2298 | 0.2037 | 0.1826 | 0.3580 |
| 4 | 0.1770 | 0.1177 | 0.2028 | 0.1377 | 0.1882 | 0.6258 |
| 5 | 0.2031 | 0.1978 | 0.2615 | 0.2648 | 0.2512 | 0.2326 |

Source: Compiled by the evaluation team.

The baseline model performs worse on all three metrics. It shows larger errors ($MAE = 0.2129$, $RMSE = 0.2669$) and explains almost no variance in the data ($R^2 = 0.0560$). This confirms that both the classifier and the regressor models provide a substantial improvement over the baseline. Between the two, the regressor demonstrates more consistent performance across different folds, suggesting stronger generalization capability. On average, it also outperforms the classifier on all key metrics and in nearly every fold. For this reason, the regressor was selected as the final model. As the final step, the regressor model was fine-tuned to further improve its performance. Table A – 3 shows the comparison between the original model and its tuned version.

Table A – 3. Comparison of original and fine-tuned regressor

| FOLD | MAE | | RMSE | | R ² | |
|------|--------|------------|--------|------------|----------------|------------|
| | Orig. | Fine-tuned | Orig. | Fine-tuned | Orig. | Fine-tuned |
| 1 | 0.1272 | 0.1380 | 0.1549 | 0.1615 | 0.7926 | 0.7747 |
| 2 | 0.1971 | 0.1831 | 0.2451 | 0.2272 | 0.1131 | 0.2377 |
| 3 | 0.1492 | 0.1543 | 0.2037 | 0.1998 | 0.3580 | 0.3824 |
| 4 | 0.1177 | 0.1207 | 0.1377 | 0.1461 | 0.6258 | 0.5791 |
| 5 | 0.1978 | 0.1870 | 0.2648 | 0.2484 | 0.2326 | 0.3248 |
| Mean | 0.1578 | 0.1566 | 0.2012 | 0.1966 | 0.4244 | 0.4598 |

Source: Compiled by the evaluation team.

The improvements are small but consistent: all three evaluation metrics have shifted in the right direction. This indicates that hyperparameter tuning successfully contributed to better predictive performance.

3.3. Interpretation of fine-tuned model results

On average, the tuned regression model explains about 46 per cent of the variance in project weights ($R^2 = 0.4598$).

In the best fold, it explained up to 77 per cent of the variance ($R^2 = 0.7747$).

The mean absolute error ($MAE = 0.1566$) indicates that, on average, predicted weights are off by about ± 0.157 from the true values on the [0,1] scale.

The root mean squared error ($RMSE = 0.1966$) suggests that no extreme outliers dominate the errors.

Further improvements are likely only achievable through additional feature engineering or better data.

Finally, the missing weights for the 41 non-tagged projects were imputed using the fine-tuned regression model.

Annex 7. CLUSTER ASSESSMENT TEMPLATE

Synopsis

Aim: to compile lessons and good practices for each cluster to inform future refinements and promotion of CIEWS in GCF.

Categorization: The final set of CIEWS projects identified for this evaluation will be categorized into three clusters based on paradigm-shifting pathways, determined by the project's primary objective. The evaluation team will use AI to categorize the list of CIEWS projects. Following this, the lists of samples for each pathway will be selected, explaining the criteria and process/methodology.

Application of analytical framework and assessment: FP samples for each cluster will be analysed using approved nested frameworks tailored to the specific pathway. Total sample size for each cluster should be 15–20 FPs. The components of each nested analytical framework will serve as indicators to evaluate the effectiveness of the interventions, through the examination of proposals, APRs and other documents available per case. Each FP will receive a score.

Gap filling – additional online interviews with AEs: To be conducted as needed to fill missing information on sampled FPs.

Extraction of lessons and synthesis: The assessment will enable the team to extract preliminary lessons and good practices for each cluster/theme. The team will produce a synthesis of findings, triangulated with field observations and additional data/information gathered in country missions.

Steps for each cluster

1. Assign one evaluator per cluster.
2. Compile the documents from the sample (produced in categorization above).
3. Use the cluster analysis sheets below to conduct/structure the desk phase of the pathway assessment.
4. Score each FP individually after reviewing each.
5. Update and refine the analysis, confirm gaps.
6. If there are important gaps, conduct interviews with AEs.
7. Write up a synthesis in a five-page report with technical annexes.
8. Curate key assessment findings into the main evaluation report and use them to help inform the recommendations.

Annex 8. METHODOLOGY FOR EW4ALL PILLAR FUNDING ALLOCATION

OVERVIEW OF METHODOLOGY³

This analysis employs a weighted allocation methodology to distribute the total portfolio funding of USD 6,520 million (M) across five EWS pillars, accounting for the reality that projects often address multiple pillars simultaneously. The methodology addresses a fundamental challenge in climate finance analysis: the attribution problem – when a project addresses multiple objectives, how should its funding be allocated across those objectives?

DATA FOUNDATION

Primary data points

Total portfolio: 381 unique projects with USD 6,520M in EWS funding

Pillar coverage: Each project is tagged with one or more of five pillars (P1 – P4 and cross-pillar)

Project complexity categories:

- Exclusive projects (97 total): Address only one pillar
- Comprehensive projects (62 total): Address all five pillars
- Multi-pillar projects (222 total): Address two to four pillars

Known funding anchors

Reported pillar sums: Total funding reported against each pillar (with overlaps):

- P1: USD 5,743M (293 projects)
- P2: USD 5,443M (282 projects)
- P3: USD 3,965M (145 projects)
- P4: USD 4,365M (161 projects)
- CP: USD 4,007M (133 projects)

ALLOCATION METHODOLOGY

Three-tier allocation framework

The methodology employs differentiated allocation weights based on project complexity.

Tier 1: Exclusive projects (single pillar)

Allocation weight: 100 per cent of project funding to the single pillar

Calculation: For each pillar, exclusive projects × average funding per project

Tier 2: Comprehensive projects (All five pillars)

Allocation weight: 20 per cent to each pillar (equal distribution)

Rationale: Projects addressing all pillars are assumed to distribute effort/funding relatively evenly

Calculation: 62 projects × average funding × 0.20 per pillar

³ This methodology represents a pragmatic approach to a complex attribution challenge. While imperfect, it provides actionable insights for readers seeking to optimize EWS investments. Future research should focus on obtaining project-level pillar budgets to validate and refine these estimates.

Tier 3: Multi-pillar projects (two to four pillars)

Allocation weight: 33 per cent average (assuming typical project addresses three pillars)

Calculation: (total projects in pillar – exclusive – comprehensive) × average funding × 0.33

Note: This is a simplification; actual distribution varies by project.

Mathematical framework and calculations

Notation and variables

Portfolio-level variables:

- T = Total portfolio funding = USD 6,520M
- N = Total number of projects = 381
- P = Set of pillars = {P1, P2, P3, P4, CP}

For each pillar $i \in P$:

- N_i = Total number of projects addressing pillar i
- R_i = Reported funding sum for pillar i (with overlaps)
- E_i = Number of exclusive projects for pillar i
- C = Number of comprehensive projects (all five pillars) = 62
- S_i = Number of shared projects = $N_i - E_i - C$

Allocation weights:

- $w_{exclusive}$ = 1.00 (100 per cent allocation)
- $w_{comprehensive}$ = 0.20 (20 per cent allocation per pillar)
- w_{shared} = 0.33 (33 per cent allocation, assuming three pillars average)

Step-by-step calculation process

Step 1: Calculate average funding per project for each pillar

For each pillar i :

$$AFP_i = R_i / N_i$$

where:

AFP_i = average funding per project in pillar i

R_i = reported sum for pillar i

N_i = number of projects in pillar i

Example for P1: $AFP_{P1} = \text{USD } 5,743.29\text{M} / 293 = \text{USD } 19.60\text{M}$ per project

Step 2: Calculate funding from exclusive projects

For each pillar i :

$$F_{exclusive}(i) = E_i \times AFP_i \times w_{exclusive}$$

Example for P1:

$$F_{exclusive}(P1) = 32 \times \text{USD } 19.60\text{M} \times 1.00 = \text{USD } 627.20\text{M}$$

Step 3: Calculate funding from comprehensive projects

For each pillar i :

$$F_{comprehensive}(i) = C \times AFP_i \times w_{comprehensive}$$

where $C = 62$ for all pillars

Example for P1:

$$F_comprehensive(P1) = 62 \times \text{USD } 19.60\text{M} \times 0.20 = \text{USD } 243.04\text{M}$$

Step 4: Calculate funding from shared multi-pillar projects

For each pillar i :

$$S_i = N_i - E_i - C$$

$$F_shared(i) = S_i \times AFP_i \times w_shared$$

Example for P1:

$$S_P1 = 293 - 32 - 62 = 199$$

$$F_shared(P1) = 199 \times \text{USD } 19.60\text{M} \times 0.33 = \text{USD } 1,287.34\text{M}$$

Step 5: Sum components for initial allocation

For each pillar i :

$$A_initial(i) = F_exclusive(i) + F_comprehensive(i) + F_shared(i)$$

Example for P1:

$$A_initial(P1) = \text{USD } 627.20\text{M} + \text{USD } 243.04\text{M} + \text{USD } 1,287.34\text{M} = \text{USD } 2,157.58\text{M}$$

Normalization procedure

Step 6: Calculate total initial allocation

$$T_initial = \sum_{i \in P} A_initial(i)$$

Example: $T_initial = \text{USD } 2,157.58\text{M} + \text{USD } 1,516.09\text{M} + \dots = \text{USD } 7,259.47\text{M}$

Step 7: Calculate scaling factor

$$\lambda = T/T_initial$$

where:

λ (lambda) = scaling factor

T = known total funding (USD 6,520M)

$T_initial$ = sum of initial allocations

Example: $\lambda = \text{USD } 6,520\text{M} / \text{USD } 7,259.47\text{M} = 0.8982$

Step 8: Apply scaling to get final allocations

For each pillar i :

$$A_final(i) = A_initial(i) \times \lambda$$

$$Percentage(i) = (A_final(i)/T) \times 100\%$$

Example for P1:

$$A_final(P1) = \text{USD } 2,157.58\text{M} \times 0.8982 = \text{USD } 1,938.54\text{M}$$

$$Percentage(P1) = (\text{USD } 1,938.54\text{M} / \text{USD } 6,520\text{M}) \times 100\% = 29.7\%$$

Confidence bounds calculation

Lower bound (conservative estimate):

For each pillar i :

$$L_i = F_exclusive(i) + (N_i - E_i) \times AFP_i \times w_min$$

where:

$w_min = 0.15$ (15 per cent minimum allocation for shared projects)

Upper bound (optimistic estimate):

For each pillar i :

$$U_i = \min(R_i \times 0.90, F_{\text{exclusive}}(i) + (N_i - E_i) \times AFP_i \times w_{\text{max}})$$

where:

$w_{\text{max}} = 0.50$ (50 per cent maximum allocation for shared projects)

0.90 factor prevents unrealistic allocations

Normalized bounds:

$$L_{\text{final}}(i) = L_i \times \lambda$$

$$U_{\text{final}}(i) = U_i \times \lambda$$

Verification checks

Sum constraint:

$$\sum A_{\text{final}}(i) = T$$

where:

T must equal USD 6,250M within rounding error

Bounds constraint for all i :

$$L_{\text{final}}(i) \leq A_{\text{final}}(i) \leq U_{\text{final}}(i)$$

Percentage check:

$$\sum \text{Percentage}(i) = 100\% \text{ (within 0.1\% rounding)}$$

Complete example: P3 calculation

Given data for P3:

- $N_{P3} = 145$ projects
- $R_{P3} = \text{USD } 3,965.33\text{M}$
- $E_{P3} = 3$ exclusive projects
- $C = 62$ comprehensive projects
- $S_{P3} = 145 - 3 - 62 = 80$ shared projects

Calculations:

$$AFP_{P3} = \text{USD } 3,965.33\text{M} / 145 = \text{USD } 27.35\text{M}$$

$$F_{\text{exclusive}}(P3) = 3 \times \text{USD } 27.35\text{M} \times 1.00 = \text{USD } 82.05\text{M}$$

$$F_{\text{comprehensive}}(P3) = 62 \times \text{USD } 27.35\text{M} \times 0.20 = \text{USD } 339.14\text{M}$$

$$F_{\text{shared}}(P3) = 80 \times \text{USD } 27.35\text{M} \times 0.33 = \text{USD } 722.04\text{M}$$

$$A_{\text{initial}}(P3) = \text{USD } 82.05\text{M} + \text{USD } 339.14\text{M} + \text{USD } 722.04\text{M} = \text{USD } 1,143.23\text{M}$$

$$A_{\text{final}}(P3) = \text{USD } 1,143.23\text{M} \times 0.8982 = \text{USD } 1,026.89\text{M}$$

$$\text{Percentage}(P3) = (\text{USD } 1,026.89\text{M} / \text{USD } 6,520\text{M}) \times 100 \text{ per cent} = 15.8 \text{ per cent}$$

GCF-specific adjustments

For GCF portfolio, the same methodology applies with:

$$T_{\text{GCF}} = \text{USD } 2,209.25\text{M}$$

$$N_{\text{GCF}} = 85 \text{ projects}$$

$$E_{\text{GCF}} = \{P1, P2, P3, P4, CP\}$$

$$C_{\text{GCF}} = 17 \text{ comprehensive projects}$$

The calculation follows identical steps with GCF-specific parameters.

Sensitivity analysis formula

To test robustness, vary w_{shared} from 0.25 to 0.40:

$$\Delta A(i) = S_i \times AFP_i \times (w_{shared_new} - w_{shared_base}) \times \lambda$$

This shows how allocation changes with different assumptions about multi-pillar project weights.

Additional note on formula interpretation

Key insight: The fundamental challenge this methodology addresses is the decomposition problem:

$$R_i = \sum_{j \in Projects_i} Budget_j \times Allocation_{j,i}$$

where:

$Budget_j$ = total budget of project j

$Allocation_{j,i}$ = unknown fraction of project j allocated to pillar i

Since $Allocation_{j,i}$ is unknown, we estimate it using project complexity classes:

- If j is exclusive to i: $Allocation_{j,i} = 1.00$
- If j is comprehensive: $Allocation_{j,i} = 0.20$
- If j is multi-pillar: $Allocation_{j,i} \approx 0.33$

This transforms an underdetermined system (more unknowns than equations) into a solvable estimation problem with quantifiable uncertainty bounds.

Normalization process

Since the sum of allocated amounts typically does not equal the known total (USD 6,520M), a proportional scaling factor is applied:

$$Scaling_factor = \frac{USD\ 6,520M}{\sum Initial_allocation}$$

$$Final_allocation[pillar] = Initial_allocation[pillar] \times Scaling_factor$$

Confidence bounds

Minimum bound assumes conservative allocation from shared projects (15 per cent weight).

Maximum bound assumes generous allocation from shared projects (50 per cent weight) but capped at 90 per cent of reported sum.

KEY ASSUMPTIONS

Equal distribution for comprehensive projects assumes projects addressing all five pillars distribute funding equally (20 per cent each). Reality may vary based on project specifics.

Average pillar count for multi-pillar projects assumes multi-pillar projects typically address three pillars (33 per cent allocation each). Actual distribution is two to four pillars with varying combinations.

Uniform funding within categories uses average funding per project within each pillar. Actual project sizes vary significantly.

Additive allocation assumes funding can be cleanly separated by pillar. In practice, many activities serve multiple pillars simultaneously (e.g. a monitoring system that also disseminates warnings).

LIMITATIONS AND CAVEATS

Data limitations

Overlap challenge: Projects do not report pillar-specific budget breakdowns, only total project funding tagged to relevant pillars.

Reporting inconsistency: Institutions may use different criteria for pillar tagging.

Temporal factors: Analysis is cross-sectional. It does not account for multi-year funding profiles.

Methodological limitations

Simplified weights: The 33 per cent allocation for multi-pillar projects is an approximation; actual allocations likely follow a power law distribution.

Independence assumption: The methodology treats pillars as independent, though synergies and dependencies exist.

Scale effects: The methodology does not account for economies of scale in multi-pillar projects.

Quality versus quantity: The analysis focuses on funding amounts, not implementation quality or outcomes.

Interpretive caveats

“Shared projects” column: Represents projects addressing this pillar plus others (not exclusively), calculated as residual after accounting for exclusive and comprehensive projects.

Ranking sensitivity: Small changes in allocation weights can shift relative rankings, particularly for P3, P4, and CP which have similar funding levels.

GCF comparison: Differences between GCF and portfolio may reflect strategic choices or portfolio maturity rather than gaps.

VALIDATION AND SENSITIVITY

Internal validation

Sum constraint: Verified that allocations sum to exactly USD 6,520M (portfolio) and USD 2,209M (GCF).

Bounds check: All allocations fall within calculated minimum/maximum bounds.

Sensitivity analysis

The analysis tested allocation weights of 25 per cent – 40 per cent for multi-pillar projects:

- Results robust for upstream/downstream gap (varies by ± 3 percentage points).
- P1 consistently receives highest allocation.
- P3 and P4 consistently underfunded relative to P1 and P2.

IMPLICATIONS FOR INTERPRETATION

This methodology provides directionally accurate estimates suitable for:

- Identifying systematic patterns (e.g. upstream/downstream imbalance)
- Comparing institutional portfolios
- Highlighting critical gaps (e.g. few P3/P4 exclusive projects)

The estimates should not be interpreted as:

- Exact funding amounts per pillar

- Prescriptive targets for future allocation
- Performance metrics for individual projects

METHODOLOGICAL CONTRIBUTION

This approach advances climate finance analysis by:

- Explicitly addressing the multi-objective attribution problem
- Using actual project-level data rather than top-down estimates
- Providing transparent, replicable calculations
- Quantifying uncertainty through confidence bounds
- Enabling systematic comparison across institutions

The methodology could be refined with:

- Project-level budget breakdowns by pillar
- Machine learning classification of project documents
- Time series analysis of funding flows
- Outcome-based weighting schemes

Annex 9. LIST OF CIEWS-RELATED READINESS GRANTS

| # | AGREEMENT REFERENCE | PROJECT TITLE | APPROVED DATE | READINESS TYPE | COUNTRY |
|----|---------------------|--|---------------|--------------------|---------------|
| 1 | AFR-RS-011 | Strengthening the institutional capacities of the African Island States Climate Commission (AISCC) member states to manage climate risks and bolster resilience | 30/03/24 | Standard Readiness | Seychelles |
| 2 | AGO-RS-002 | Strengthening Institutional Information Services to support decision-making for Climate Change in the AFOLU sector in Angola | 15/12/20 | Standard Readiness | Angola |
| 3 | ARG-RS-003 | Readiness for the National Adaptation Plan Process | 04/12/18 | NAP | Argentina |
| 4 | ARG-RS-006 | Innovation for climate resilience of Patagonian grasslands of Argentina: minimizing climate vulnerability of rural inhabitants, increasing capacities for range and soil regeneration, and conserving biodiversity | 20/04/22 | Standard Readiness | Argentina |
| 5 | BHS-RS-005 | Developing a climate resilient health system in The Bahamas | 21/12/20 | Standard Readiness | Bahamas |
| 6 | BTN-RS-006 | Strengthening capacities and enhancing climate data and services in Bhutan to scale-up climate financing from multiple sources | 29/11/23 | Standard Readiness | Bhutan |
| 7 | COM-RS-002 | Support The Union of Comoros to enhance access to Climate Finance under the Green Climate Fund (GCF): enhancing the decision-making process through better mainstreaming science-based information | 09/11/22 | Standard Readiness | Comoros (the) |
| 8 | CPV-RS-001 | Enhance capacities of Cabo Verde in addressing the effects of climate change in key sectors of the Blue Economy | 03/12/21 | Standard Readiness | Cabo Verde |
| 9 | ETH-RS-003 | Building Capacity to Facilitate the Integration of the National Adaptation Planning Process in Ethiopia | 21/05/21 | NAP | Ethiopia |
| 10 | GIN-RS-002 | Supporting the Achievement of National Development Policies by Building Climate Adaptive Capacity and Planning in Guinea | 02/03/20 | NAP | Guinea |
| 11 | GIN-RS-003 | Strengthening technical and institutional capacity of NDA and national stakeholders for climate finance and enhancing the Country Programming process in Guinea | 30/12/21 | Standard Readiness | Guinea |

| # | AGREEMENT REFERENCE | PROJECT TITLE | APPROVED DATE | READINESS TYPE | COUNTRY |
|----|---------------------|---|---------------|--------------------|-----------------------|
| 12 | JOR-RS-004 | Enhancing the resilience of Jordan's most vulnerable communities through strengthening capacity to understand and project the impact of climate change related hazards on the most vulnerable, on water resources, and on water and sanitation services | 31/12/21 | Standard Readiness | Jordan |
| 13 | KAZ-RS-003 | Institutionalization of adaptation planning and integration of climate risks into Kazakhstan's development planning processes to enable implementation of adaptation measures as part of coherent National Adaptation Planning (NAP) policies | 21/11/23 | NAP | Kazakhstan |
| 14 | KNA-RS-004 | Capacity Building to Facilitate Climate Resilience in Disaster Risk Management and Private Sector Access to Climate Financing in St. Kitts and Nevis | 25/02/22 | Standard Readiness | Saint Kitts and Nevis |
| 15 | LAC-RS-006 | CDEMA Early Warning Systems Readiness Proposal | 24/12/19 | Standard Readiness | Antigua and Barbuda |
| 16 | LAC-RS-017 | Strategic Actions for advancing climate action in CARICOM Member States | 30/12/21 | Standard Readiness | Jamaica |
| 17 | LAO-RS-010 | Enhancing Lao PDR National Capacity and Coordination in Health and Climate Change | 11/12/21 | Standard Readiness | Lao PDR |
| 18 | LBR-RS-005 | Develop a renewable energy investment framework and conceptualization of a funding proposal to increase the share of renewable energy-based electricity generation to achieve Liberia's NDC commitments | 02/09/22 | Standard Readiness | Liberia |
| 19 | LCA-RS-004 | Improving the Capacity of the Fisheries Sector in Saint Lucia to build/enhance resilience to Climate Change | 03/11/21 | NAP | Saint Lucia |
| 20 | LKA-RS-002 | Strengthen the Process and Capacity of Implementation of National Adaptation Plan of Sri Lanka | 31/07/20 | NAP | Sri Lanka |
| 21 | MDV-RS-003 | Advancing the National Adaptation Plan of the Maldives | 23/09/22 | NAP | Maldives |
| 22 | MKD-RS-006 | Support the decarbonization process of North Macedonia through integrated management of forest fires and strengthening climate information sharing | 19/03/25 | Standard Readiness | North Macedonia |
| 23 | MUL-RS-003 | Scaling-up public private co-investments for climate action in agrifood systems | 28/03/24 | Standard Readiness | Zambia |

| # | AGREEMENT REFERENCE | PROJECT TITLE | APPROVED DATE | READINESS TYPE | COUNTRY |
|----|---------------------|---|---------------|--------------------|----------------------|
| 24 | MUS-RS-005 | Strengthening science-based and climate-informed decision-making processes in Mauritius climate-sensitive sectors for impactful and cost-effective climate change programming | 04/11/22 | Standard Readiness | Mauritius |
| 25 | NIU-RS-002 | Niue GCF Readiness 2 - Strengthening of the NDA and Niue's Access to Climate Finance | 31/12/21 | Standard Readiness | Niue |
| 26 | OMN-RS-002 | Building Resilient Environment and Sustainable Agriculture and Water | 22/11/21 | Standard Readiness | Oman |
| 27 | PER-RS-007 | Development of an effective governance framework for the implementation of a multi-hazard early warning system in Peru | 09/02/24 | Standard Readiness | Peru |
| 28 | PER-RS-009 | Integrating key stakeholders for the effective implementation of a multi-hazard early warning system in Peru | 01/12/24 | Standard Readiness | Peru |
| 29 | PRY-RS-003 | Readiness Support for Paraguay's Enhanced Access to Climate Finance | 03/12/20 | Standard Readiness | Paraguay |
| 30 | PRY-RS-008 | Strengthening the National Designated Authority, Candidate Direct Access Entity, National Programming Process and Development of Strategic Frameworks for Low Carbon Development in Paraguay | 17/03/25 | Standard Readiness | Paraguay |
| 31 | PSE-RS-006 | Building a climate-resilient and low carbon health system in Palestine | 02/03/23 | Standard Readiness | State of Palestine |
| 32 | RWA-RS-003 | National Adaptation Readiness and Preparatory Support for Building Flood Resilience Capacities in Rwanda | 26/01/20 | NAP | Rwanda |
| 33 | SLE-RS-002 | Enhancing the Resilience of Health Systems to Climate Change and Emerging Outbreak/Pandemics in Sierra Leone | 31/05/23 | Standard Readiness | Sierra Leone |
| 34 | SLE-RS-003 | Accelerating Action Towards Effective Climate Risk Management in Key Sectors in Sierra Leone | 30/05/25 | NAP | Sierra Leone |
| 35 | SYR-RS-003 | Strengthening the capacity of the Water, Sanitation and Hygiene WASH sector to assess and address the impacts of climate change on the provision of water and sanitation services and to build the project pipeline for water and sanitation projects in the Syrian Arab Republic | 31/03/23 | Standard Readiness | Syrian Arab Republic |
| 36 | THA-RS-010 | Enhancing Thailand's Capacity for Climate Adaptation through Risk-informed Anticipatory Actions to Flood and Drought | 19/02/25 | Standard Readiness | Thailand |

| # | AGREEMENT REFERENCE | PROJECT TITLE | APPROVED DATE | READINESS TYPE | COUNTRY |
|----|---------------------|--|---------------|--------------------|---------------------|
| 37 | TJK-RS-005 | Strengthening Tajikistan's capacity to manage the climate finance process and prepare quality projects | 20/01/23 | Standard Readiness | Tajikistan |
| 38 | TLS-RS-006 | Development of capacity to implement a national climate change plan and strategy in Timor-Leste | 21/03/24 | Standard Readiness | Timor-Leste |
| 39 | TTO-RS-004 | Building climate resilience into Trinidad and Tobago's Healthcare System | 30/12/20 | Standard Readiness | Trinidad and Tobago |
| 40 | TUV-RS-002 | Development of Tuvalu's National Adaptation Plan (NAP) to advance medium and long-term adaptation planning | 18/01/21 | NAP | Tuvalu |
| 41 | UGA-RS-002 | Strengthening Adaptation Planning in Uganda | 22/06/21 | NAP | Uganda |
| 42 | YEM-RS-006 | Building Capacity for the National Adaptation Planning Process in Yemen | 15/04/25 | NAP | Yemen |

Source: Compiled by the evaluation team.

Annex 10. LIST OF CIEWS-RELATED PPF GRANTS AND APPROVED FUNDING PROPOSALS

| FP | PPF | PROJECT NAME | ENTITY |
|--------|--------|--|---|
| FP073 | PPF001 | Strengthening Climate Resilience of Rural Communities in Northern Rwanda | Ministry of Environment, Rwanda |
| FP171 | PPF002 | Enhancing Early Warning Systems to build greater resilience to hydro-meteorological hazards in Timor-Leste | UNEP |
| FP160 | PPF007 | Monrovia Metropolitan Climate Resilience Project | UNDP |
| FP232 | PPF011 | Jordan Integrated Landscape Management Initiative (JILMI) | UNEP |
| FP182 | PPF020 | Climate-smart initiatives for climate change adaptation and sustainability in prioritized agricultural production systems in Colombia (CSICAP) | Corporación Andina de Fomento (CAF) |
| FP192 | PPF022 | The R's (Reduce, Reuse and Recycle) for Climate Resilience Wastewater Systems in Barbados (3R-CReWS) | Caribbean Community Climate Change Centre (CCCCC) |
| FP217 | PPF030 | Building Resilience of Vulnerable Communities to Climate Variability in Rwanda's Congo Nile Divide through Forest and Landscape Restoration | Ministry of Environment, Rwanda |
| FP207 | PPF034 | Recharge Pakistan: Building Pakistan's resilience to climate change through Ecosystem-based Adaptation (EbA) and Green Infrastructure for integrated flood risk management | World Wildlife Fund |
| FP179 | PPF036 | Tanzania Agriculture Climate Adaptation Technology Deployment Programme (TACATDP) | CRDB Bank Plc. |
| FP183 | PPF038 | Inclusive Green Financing Initiative (IGREENFIN I): Greening Agricultural Banks & the Financial Sector to Foster Climate Resilient, Low Emission Smallholder Agriculture in the Great Green Wall (GGW) countries - Phase I | IFAD |
| SAP034 | PPF039 | Akamatutu'anga To Tatou Ora'anga Meitaki (ATOM): Building a healthy and resilient Cook Islands Community – one block at a time | Ministry of Finance and Economic Management, Cook Islands |
| FP240 | PPF042 | Collaborative R&DB Programme for Promoting the Innovation of Climate Technopreneurship | Korea Development Bank (KDB) |
| SAP051 | PPF043 | Increasing resilience to the health risks of climate change in the Federated States of Micronesia | Pacific Community (SPC) |

| FP | PPF | PROJECT NAME | ENTITY |
|--------|-----------|--|--|
| FP199 | PPF044 | Public-Social-Private Partnerships for Ecologically-Sound Agriculture and Resilient Livelihood in Northern Tonle Sap Basin (PEARL) | FAO |
| FP197 | PPF045 | Green Guarantee Company (“GGC”) | MUFG Bank |
| FP267 | PPF046 | Scaling up ecosystem-based approaches to managing climate-intensified disaster risks in vulnerable regions of South Africa (“Eco-DRR”) | South African National Biodiversity Institute |
| FP259 | PPF049 | Adapting tuna-dependent Pacific Island communities and economies to climate change | Conservation International Foundation |
| FP205 | PPF050 | Infrastructure Climate Resilient Fund (ICRF) | Africa Finance Corporation |
| FP262 | PPF052 | Green Climate Finance Facility for Fostering Climate-Smart Agriculture in Senegal | La Banque Agricole |
| SAP049 | PPF053 | Sustainable Communities for Climate Action in the Yucatán Peninsula (ACCIÓN) | Fondo Mexicano para la Conservación de la Naturaleza A.C. |
| FP276 | PPF061 | GCF’s investment into the Global Green Bond Initiative (GGBI) (previously known as Green and Resilience Debt Platform (GRDP)) | European Investment Bank |
| SAP058 | PPF063 | Local Governments and Climate Change III (LGCC-3) | National Committee for Sub-National Democratic Development |
| FP258 | PPF071 | Multi-country Project Advancing Early Warnings for All (EW4All) | UNDP |
| SAP050 | PPF081 | Toward Risk-Aware and Climate-resilient communities (TRACT) - Strengthening climate services and impact-based multi-hazard early warning in Maldives | UNEP |
| FP283 | PPF091 | Glaciers to Farms (G2F) Regional Program: Advancing Climate Resilience & Sustainable Development in Central and West Asia | ADB |
| SAP025 | PPF-TA001 | Adaptation of agricultural production systems in Coastal Areas of Northwest Guinea-Bissau | Sahara and Sahel Observatory |
| SAP043 | PPF-TA010 | Upscaling “Naatangué” integrated family and village farms for a resilient agriculture in Senegal | Centre de Suivi Écologique |

Source: Compiled by the evaluation team.

Annex 11. DATA CORRECTIONS COMPENDIUM: IMPACT DATA QUALITY ASSURANCE DOCUMENTATION

Overview

This annex documents corrections made to the APR result data set during the data validation process. All corrections are traceable to original source documents and can be verified against the referenced APR reports.

Scope:

- Reporting years: CY2020–CY2024
- Total corrections: 27
- Projects affected: 11

Summary of all corrections

| # | PROJECT | INDICATOR | REPORT YEAR | ORIGINAL VALUE | CORRECTED VALUE | CORRECTION TYPE |
|----|---------|--------------------------|-------------|-------------------------|-----------------|--------------------------|
| 1 | FP012 | A1.1 Economic Cumulative | 2024 | 356,280,000 | 4,080,000 | Calculation error |
| 2 | FP012 | A1.1 Economic Cumulative | 2022 | 360,000,000 | 360,000 | Transcription error |
| 3 | FP012 | A1.1 Economic Baseline | 2020 | [Baseline] | 0 | Ex-ante removal |
| 4 | FP012 | A1.1 Economic Cumulative | 2020 | [Reported] | 0 | Empty source field |
| 5 | FP012 | A1.1 Economic Cumulative | 2020 Hist. | [Reported] | 0 | Empty source field |
| 6 | FP012 | A7.1 Unit | 2021 Hist. | Businesses | Individuals | Unit reclassification |
| 7 | FP016 | A7.1 Unit | 2021 Hist. | Households | Individuals | Unit reclassification |
| 8 | FP035 | A1.1 Persons Cumulative | 2024 | [Deaths counted in APR] | 0 | Indicator misapplication |
| 9 | FP069 | A7.1 Unit | 2021 Hist. | Households | Individuals | Unit reclassification |
| 10 | FP069 | A7.1 Cumulative | 2020 Hist. | 57,737 | 0 | Double-count removal |
| 11 | FP074 | A1.1 Persons Cumulative | 2021 | 1,750,000 | 0 | Ex-ante removal |
| 12 | FP074 | A1.1 Economic Cumulative | 2021 | 1,300,000,000 | 0 | Ex-ante removal |
| 13 | FP074 | A1.1 Persons Cumulative | 2021 Hist. | 1,750,000 | 0 | Ex-ante removal |
| 14 | FP074 | A1.1 Economic Cumulative | 2021 Hist. | 1,300,000,000 | 0 | Ex-ante removal |

| # | PROJECT | INDICATOR | REPORT YEAR | ORIGINAL VALUE | CORRECTED VALUE | CORRECTION TYPE |
|----|---------|--------------------------|-------------|-------------------|-----------------|--------------------------|
| 15 | FP074 | A1.1 Persons Cumulative | 2022 | 1,750,000 | 0 | Ex-ante removal |
| 16 | FP074 | A1.1 Economic Cumulative | 2022 | 1,300,000,000 | 0 | Ex-ante removal |
| 17 | FP074 | A1.1 Persons Cumulative | 2023 | 1,750,000 | 0 | Ex-ante removal |
| 18 | FP074 | A1.1 Economic Cumulative | 2023 | 1,300,000,000 | 0 | Ex-ante removal |
| 19 | FP074 | A1.1 Persons Cumulative | 2024 | 1,750,000 | 0 | Ex-ante removal |
| 20 | FP074 | A1.1 Economic Cumulative | 2024 | 1,300,000,000 | 0 | Ex-ante removal |
| 21 | FP078 | A7.1 Unit | 2021 Hist. | Businesses | Individuals | Unit reclassification |
| 22 | FP133 | A1.1 Economic Cumulative | 2024 | 6,600,000,000 | 0 | Ex-ante removal |
| 23 | FP165 | A1.1 Economic Cumulative | 2024 | [Estimate in APR] | 0 | Indicator misapplication |
| 24 | SAP022 | A1.1 Economic Annual | 2024 | [Baseline in APR] | 0 | Ex-ante removal |
| 25 | SAP022 | A1.1 Economic Cumulative | 2024 | [Baseline in APR] | 0 | Ex-ante removal |

Source: Compiled by the evaluation team.

Note: Hist. = Historical.

Detailed correction records

1) FP012

Table A – 4. Correction 1.1

| FIELD | DETAIL |
|-----------------|--|
| Variable | 2.4.2 impact ind-a1.1-unit economic-cumulative |
| Source document | Annual performance report CY2024 |
| Original value | 356,280,000 |
| Corrected value | 4,080,000 |
| Error type | Calculation error |

Source: Compiled by the evaluation team.

Basis for correction:

- CY2023 cumulative value: 360,000
- CY2024 annual reporting value: 3,720,000
- Correct cumulative: 360,000 + 3,720,000 = 4,080,000

- Original value appears to represent programme duration total rather than incremental cumulative

Table A – 5. Correction 1.2

| FIELD | DETAIL |
|-----------------|--|
| Variable | 2.4.2 impact ind-a1.1-unit economic-cumulative |
| Source document | Annual performance report CY2022 |
| Original value | 360,000,000 |
| Corrected value | 360,000 |
| Error type | Transcription error |

Source: Compiled by the evaluation team.

Basis for correction: Value inconsistent with APR CY2021 (360,000) and APR CY2023 (360,000). The factor of 1,000 discrepancy indicates transcription error.

Table A – 6. Correction 1.3

| FIELD | DETAIL |
|-----------------|--|
| Variable | 2.4.2 impact ind-a1.1-unit economic-baseline |
| Source document | Annual performance report CY2020 |
| Original value | [Baseline figure in APR] |
| Corrected value | 0 |
| Error type | Ex-ante data removal |

Source: Compiled by the evaluation team.

Basis for correction: Baseline data incorrectly entered as achieved result.

Table A – 7. Correction 1.4

| FIELD | DETAIL |
|------------------|---|
| Variable | 2.4.2 impact ind-a1.1-unit economic-cumulative |
| Source documents | Annual performance report CY2020; CY2020 historical ex-post results |
| Original value | [Reported figure in APR] |
| Corrected value | 0 |
| Error type | Empty source field |

Source: Compiled by the evaluation team.

Basis for correction: Verification against original APR2020 document confirmed the cumulative field was empty.

Table A – 8. Correction 1.5

| FIELD | DETAIL |
|-----------------|---|
| Variable | 2.4.2 outcome ind-a7.1-unit num businesses-cumulative |
| Source document | Annual performance report CY2021 historical ex-post results |
| Original value | 36,199 |
| Original unit | Businesses |
| Corrected unit | Individuals |
| Error type | Unit reclassification |

Source: Compiled by the evaluation team.

Basis for correction: APR narrative states: “In 18 villages SCAP-RU, with 36,199 inhabitants, have been put in place for the dissemination of early warning information.” The term “inhabitants” denotes individuals, not businesses.

2) FP016

Table A – 9. Correction 2.1

| FIELD | DETAIL |
|-----------------|---|
| Variable | 2.4.2 outcome ind-a7.1-unit num households-cumulative |
| Source document | Annual performance report CY2021 historical ex-post results |
| Original value | 568,558 |
| Original unit | Households |
| Corrected unit | Individuals |
| Error type | Unit reclassification |

Source: Compiled by the evaluation team.

Basis for correction: APR states: “Current value: 568,558 (of which women are 285,643).” Gender disaggregation indicates individual-level measurement; households cannot be disaggregated by gender.

3) FP035

Table A – 10. Correction 3.1

| FIELD | DETAIL |
|-----------------|--|
| Variable | 2.4.2 impact ind-a1.1-unit persons-cumulative |
| Source document | Annual performance report CY2024 |
| Original value | [Number of deaths from natural disasters in APR] |
| Corrected value | 0 |
| Error type | Indicator misapplication |

Source: Compiled by the evaluation team.

Basis for correction: APR reported deaths caused by natural disasters. Indicator A1.1 measures reduction in loss of life (lives saved), not total deaths. The reported value represents the inverse of the indicator definition.

4) FP069

Table A – 11. Correction 4.1

| FIELD | DETAIL |
|-----------------|---|
| Variable | 2.4.2 outcome ind-a7.1-unit num households-cumulative |
| Source document | Annual performance report CY2021 historical ex-post results |
| Original value | 57,737 |
| Original unit | Households |
| Corrected unit | Individuals |
| Error type | Unit reclassification |

Source: Compiled by the evaluation team.

Basis for correction: APR states: “Baseline: 57,737 (50.2 per cent women)” and references “245,516 direct (50.2 per cent of whom are female)” as final target. Gender percentage breakdown confirms individual-level measurement.

Table A – 12. Correction 4.2

| FIELD | DETAIL |
|-----------------|---|
| Variable | 2.4.2 outcome ind-a7.1-unit num households-cumulative |
| Source document | Annual performance report CY2020 historical ex-post results |
| Original value | 57,737 |
| Corrected value | 0 |
| Error type | Double-count removal |

Source: Compiled by the evaluation team.

Basis for correction: Identical figure (57,737) appears in both CY2020 historical (households) and CY2024 reports (individuals). To avoid double-counting in aggregation, the earlier entry was set to zero.

5) FP074

Table A – 13. Corrections 5.1–5.10

| FIELD | DETAIL |
|------------------|---|
| Variables | 2.4.2 impact ind-a1.1-unit persons-cumulative |
| | 2.4.2 impact ind-a1.1-unit economic-cumulative |
| Source documents | APR CY2021, CY2021 Historical, CY2022, CY2023, CY2024 |
| Original values | 1,750,000 (persons); 1,300,000,000 (economic) |
| Corrected value | 0 (all instances) |
| Error type | Ex-ante data removal |

Source: Compiled by the evaluation team.

Basis for correction: Review of the 2022 interim evaluation established that reported values represent model-based projections, not verified achievements.

From interim evaluation (p. 16):

“A partial update of the model indicated a (model simulated) reduction of 2.5% of the population affected by drought. This results in a yet incomplete model-based analysis, whereas evidence-based feedback on the effectiveness of the agrometeorological services is not yet available.”

From interim evaluation (p. 14):

“Due to the volatile security situation in Burkina Faso a detailed baseline survey was not conducted at the inception phase of the project and instead proxy data were used. While an operational flood forecasting system has not yet been established...”

From interim evaluation (p. 19):

“A model-based analysis was prepared in 2020 on which the data are based... However, the results for the population affected by floods are not yet viable...”

Conclusion: Data represents ex-ante model projections from 2020, not measured impact.

Table A – 14. Records corrected

| REPORT | PERSONS ORIGINAL | PERSONS CORRECTED | ECONOMIC ORIGINAL | ECONOMIC CORRECTED |
|--------------|------------------|-------------------|-------------------|--------------------|
| CY2021 | 1,750,000 | 0 | 1,300,000,000 | 0 |
| CY2021 Hist. | 1,750,000 | 0 | 1,300,000,000 | 0 |
| CY2022 | 1,750,000 | 0 | 1,300,000,000 | 0 |
| CY2023 | 1,750,000 | 0 | 1,300,000,000 | 0 |
| CY2024 | 1,750,000 | 0 | 1,300,000,000 | 0 |

Source: Compiled by the evaluation team.

6) FP078

Table A – 15. Correction 6.1

| FIELD | DETAIL |
|-----------------|---|
| Variable | 2.4.2 outcome ind-a7.1-unit num businesses-cumulative |
| Source document | Annual performance report CY2021 historical ex-post results |
| Original value | 203,020 |
| Original unit | Businesses |
| Corrected unit | Individuals |
| Error type | Unit reclassification |

Source: Compiled by the evaluation team.

Basis for correction: APR describes: “Number of farmers reporting increased adaptive capacity (or means to it e.g. reduced risk, more stable incomes).” These are individual farmers, not business entities.

7) FP133

Table A – 16. Correction 7.1

| FIELD | DETAIL |
|-----------------|--|
| Variable | 2.4.2 impact ind-a1.1-unit economic-cumulative |
| Source document | Annual performance report CY2024 |
| Original value | 6,600,000,000 |
| Corrected value | 0 |
| Error type | Ex-ante data removal |

Source: Compiled by the evaluation team.

Basis for correction:

From APR2024:

“Midterm targeted reduction in losses of lives and economic assets of US\$1.5 billion calculated as a percentage of total baseline losses of US\$6.6 billion = 22.7%”
 “Final targeted reduction in losses of lives and economic assets of US\$3.34 billion calculated as a percentage of total baseline losses of US\$6.6 billion = 50.6%”
 “Midterm target not met as project has experienced implementation delays which have affected the project timeline.”

The reported value (USD 6.6 billion) represents baseline losses, not achieved reduction. APR confirms targets were not met.

8) FP165

Table A – 17. Correction 8.1

| FIELD | DETAIL |
|-----------------|--|
| Variable | 2.4.2 impact ind-a1.1-unit economic-cumulative |
| Source document | Annual performance report CY2024 |
| Original value | [Baseline/target/10-year estimate in APR] |
| Corrected value | 0 |
| Error type | Indicator misapplication |

Source: Compiled by the evaluation team.

Basis for correction: The APR uses baseline values, final targets, and 10-year period estimates as cumulative achievement. The methodology reports current losses rather than losses avoided. This reflects a misunderstanding of indicator A1.1, which measures reduction in losses attributable to project interventions.

9) SAP022

Table A – 18. Corrections 9.1–9.2

| FIELD | DETAIL |
|-----------------|--|
| Variables | 2.4.2 impact ind-a1.1-unit economic-annual |
| | 2.4.2 impact ind-a1.1-unit economic-cumulative |
| Source document | Annual performance report CY2024 |
| Original value | [Baseline figures] |
| Corrected value | 0 (both) |
| Error type | Ex-ante data removal |

Source: Compiled by the evaluation team.

Basis for correction: Baseline values were entered as both annual and cumulative achievement figures. No supporting evidence of actual achievement in APR.

Error classification summary

By error type

| ERROR TYPE | COUNT | DESCRIPTION |
|--------------------------|-------|---|
| Ex-ante data removal | 14 | Model projections, baselines, or targets reported as achievements |
| Unit reclassification | 5 | Incorrect measurement unit (households/businesses versus individuals) |
| Calculation error | 2 | Arithmetic errors in cumulative totals |
| Indicator misapplication | 2 | Fundamental misunderstanding of indicator definition |
| Empty source field | 2 | Data reported but source document field was blank |
| Double-count removal | 1 | Same value reported across multiple periods |
| Transcription error | 1 | Data entry error (magnitude discrepancy) |

Source: Compiled by the evaluation team.

By indicator

| INDICATOR | CORRECTIONS |
|----------------------------|-------------|
| A1.1 Economic (Cumulative) | 16 |
| A1.1 Persons (Cumulative) | 6 |
| A1.1 Economic (Annual) | 1 |
| A1.1 Economic (Baseline) | 1 |
| A7.1 (Unit corrections) | 5 |

Source: Compiled by the evaluation team.

By reporting year

| REPORT YEAR | CORRECTIONS |
|---------------------------|-------------|
| CY2024 | 10 |
| CY2023 | 2 |
| CY2022 | 3 |
| CY2021 | 2 |
| CY2021 historical ex-post | 6 |
| CY2020 | 2 |
| CY2020 historical ex-post | 2 |

Source: Compiled by the evaluation team.

Variable reference

| VARIABLE CODE | DESCRIPTION |
|--|---|
| 2.4.2 impact ind-a1.1-unit persons-cumulative | Change in expected losses of lives (cumulative) |
| 2.4.2 impact ind-a1.1-unit persons-annual | Change in expected losses of lives (annual) |
| 2.4.2 impact ind-a1.1-unit economic-cumulative | Change in expected losses of economic assets (cumulative) |
| 2.4.2 impact ind-a1.1-unit economic-annual | Change in expected losses of economic assets (annual) |
| 2.4.2 impact ind-a1.1-unit economic-baseline | Baseline economic losses |
| 2.4.2 outcome ind-a7.1-unit num businesses-cumulative | Number of physical assets strengthened (businesses) |
| 2.4.2 outcome ind-a7.1-unit num households-cumulative | Number of physical assets strengthened (households) |
| 2.4.2 outcome ind-a7.1-unit num individuals-cumulative | Number of physical assets strengthened (individuals) |

Source: Compiled by the evaluation team.

Source document reference

All corrections can be verified against the following source documents:

| PROJECT | SOURCE DOCUMENTS |
|---------|--|
| FP012 | APR CY2020, CY2021, CY2022, CY2023, CY2024; CY2020 historical ex-post; CY2021 historical ex-post |
| FP016 | APR CY2021 historical ex-post results |
| FP035 | APR CY2024 |
| FP069 | APR CY2020 historical ex-post; CY2021 historical ex-post |
| FP074 | APR CY2021, CY2022, CY2023, CY2024; CY2021 historical ex-post; 2022 interim evaluation |
| FP078 | APR CY2021 historical ex-post results |
| FP133 | APR CY2024 |
| FP165 | APR CY2024 |
| SAP022 | APR CY2024 |

Source: Compiled by the evaluation team.

Annex 12. EVALUABILITY OF CIEWS PROJECTS

This annex provides a summary of evaluability analysis done for CIEWS-tagged projects. The evaluability analysis examined the extent to which the CIEWS portfolio is designed to credibly measure and report on its results. The evaluation team conducted a comparative evaluability analysis between the available 118 CIEWS-tagged projects and 168 non-CIEWS projects,⁴ across four key dimensions: theory of change quality, measurement of causal change, implementation fidelity, and data-collection and reporting.

Overall, CIEWS projects demonstrate stronger evaluability characteristics compared to non-CIEWS projects, **performing better in 70 per cent of the assessment areas** (14 out of 20 questions analysed). The average risk differential across all dimensions was **4.1 percentage points lower for CIEWS projects**, suggesting that the CIEWS portfolio is generally better positioned to credibly report on its impacts and effectiveness.

Theory of change quality: CIEWS projects show notably stronger performance in articulating their theories of change, with an average risk differential of **9.6 percentage points lower than non-CIEWS projects**. Particularly significant improvements were observed in the identification of unintended consequences (14.1 percentage points lower risk) and the robustness of causal linkages informed by high-quality evidence (11.5 percentage points lower risk).

Measurement of causal change: CIEWS projects also demonstrate stronger measurement frameworks, with an average risk differential of **5.6 percentage points lower than non-CIEWS projects**. Notably, CIEWS proposals were more likely to provide additional impact indicators beyond standard GCF requirements (10.5 percentage points lower risk), indicating greater attention to capturing the specific outcomes relevant to early warning and climate information services.

Implementation fidelity: While CIEWS projects perform marginally better overall in this dimension (0.4 percentage points lower risk), this area reveals important challenges. CIEWS projects show higher risk in measuring paradigm shift potential (3.3 percentage points higher) and impact potential (2.8 percentage points higher).

Data-collection and reporting: This dimension shows the smallest differential between CIEWS and non-CIEWS projects (0.7 percentage points lower risk for CIEWS). Notably, CIEWS projects face slightly higher risk regarding the potential quality of data for impact evaluations (2.5 percentage points higher).

⁴ Data as of 31 December 2024. See Baek et al., “The Fourth Evaluability Assessment of the Green Climate Fund's Funding Proposals,” Independent Evaluation Unit, Green Climate Fund, 2026, <https://ieu.greenclimate.fund/sites/default/files/document/fourth-evaluability-assessment.pdf>.

Table A – 19. Comparative evaluability analysis of CIEWS versus non-CIEWS projects

| EVALUATION DIMENSION | AVERAGE RISK DIFFERENTIAL | KEY STRENGTHS (CIEWS) | KEY CHALLENGES (CIEWS) |
|-------------------------------|---------------------------|--|---|
| Theory of change | -9.6 pp | Identification of unintended consequences (-14.1 pp) Robustness of causal linkages (-11.5 pp) Quality of programme logic (-9.6 pp) | — |
| Measurement of causal change | -5.6 pp | Additional impact indicators beyond GCF requirements (-10.5 pp) | — |
| Implementation fidelity | -0.4 pp | Eligibility and targeting criteria (-8.9 pp) Efficiency criteria (-5.5 pp) | Paradigm shift measurability (+3.3 pp); Impact potential measurability (+2.8 pp) |
| Data-collection and reporting | -0.7 pp | M&E requirements for evaluations (-5.6 pp) | Data quality for impact evaluations (+2.5 pp) |
| Overall | -4.1 pp | 14 of 20 areas (70%) | 6 of 20 areas (30%) |

Source: Baek et al., “The Fourth Evaluability Assessment.” FPs as of 31 December 2024.

Note: N = 286 projects. Negative values (–) indicate CIEWS projects perform better (lower risk or higher evaluability); positive values (+) indicate non-CIEWS projects perform better. pp = percentage points.

These evaluability findings have several implications for the GCF’s CIEWS portfolio. First, the stronger theoretical foundations of CIEWS projects provide a solid basis for results-based management and adaptive learning during implementation. Second, the challenges in measuring paradigm shift and impact potential suggest a need for more sophisticated evaluation approaches that can capture systemic changes in early warning capabilities over time. Third, the relatively weaker data-collection characteristics indicate opportunities for strengthening monitoring and evaluation frameworks specifically tailored to CIEWS interventions, particularly for capturing outcomes at the community level.