United Nations Environment Programme

Terminal evaluation of the GEF project 3679

Economic Analysis of Adaptation Options

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Evaluation Office

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Table of Contents

Table 1. Project summary.

GEF project ID:	3679	**IMIS number:**	GFL/4A56
Focal Area(s):	Climate Adaptation	**GEF OP #:**	GFL/3679
GEF Strategic Priority/Objective:	Climate Change Adaptation	**GEF approval date:**	9th February, 2009
Approval date:	July 2008	**First Disbursement:**	11th May, 2009
Actual start date:	July 2008	**Planned duration:**	24 months
Intended completion date:	December 2010	**Actual or Expected completion date:**	December 2010
Project Type:	MSP	**GEF Allocation:**	1,000,000
PDF GEF cost:	N/A	**PDF co-financing:**	N/A
Expected MSP/FSP Co-financing:	USD$3,500,000	**Total Cost:**	US$4,500,000
Mid-term review/eval. (planned date):	July 2009	**Terminal Evaluation (actual date):**	May 2012
Mid-term review/eval. (actual date):	July 2009	**No. of revisions:**	One
Date of last Steering Committee meeting:	July 10, 2009 at Zurich Summit Meeting	**Date of last Revision*:**	24th November, 2009
Disbursement as of 30 June 2010 (UNEP):	GEF- US$900,000 EU - US$255,814	**Actual expenditures reported as of 30 June 2010:**	GEF – US$970,000 EU - US$255,814
Total co-financing realized as of 30 June 2010:	US$3,500,000	**Leveraged financing:**	Additionally, European Union: $0.2m provided financing in June 2009 in preparation for Zurich Summit and roll-out

Source: Information provided by UNEP/GEF

Acronyms

BSP	Bali Strategic Plan
CBA	Cost benefit analysis
CGE	Computable General Equilibrium model
CEO	Chief Executive Officer
DA	Development Alternatives
DEPI	Division of Environmental Policy Implementation, UNEP
DEWA	Division of Early Warning and Assessment, UNEP
DFID	Department for International Development, UK
ECA	Economics of Climate Adaptation
ECAWG	Economics of Climate Adaptation Working Group
GEF	Global Environment Facility
GNESD	Global Network on Energy and Sustainable Development, UNEP
IDE	International Development Enterprise, India
IFPRI	International Food Policy Research Institute
IIS	Indian Institute of Sciences
IIT	Indian Institute Technology
IITM	Indian Institute of Tropical Meteorology
IMD	Indian Meteorological Department
IPCC	Intergovernmental Panel on Climate Change
IWMI	International Water Management Institute
M&E	Monitoring & Evaluation
MCA	Multi-criteria analysis
MDS	Medium Term Strategy
MNRE	Ministry Environment and Natural Resources, Samoa
MOA	Ministry of Agriculture, India
NAPA	National Adaptation Programme of Action
NEEDS	National Economic, Environment and Development Study, UNFCCC
PIR	Project Implementation Review
ProVIA	Programme of Research on Climate Change Vulnerability, Impacts and Adaptation, UNEP
SC	Steering Committee
SCCF	Special Climate Change Fund
SMART	Specific, Measurable, Attainable, Relevant, Timely (indicators)

TCR	Total Climate Risk
TOC	Theory of Change
TERI	The Energy Research Institute, India
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

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Executive Summary

1. The Economics of Climate Adaptation (ECA) project stands out as 'unusual' for the GEF and Special Climate Change Fund (SCCF) in that it came through the direct initiative of McKinsey & Company who put together a package of funding and led the analysis. The project was developed at a time when there was little global advice on the economic analysis of adaptation, although many experts and leading organizations were addressing relevant issues. And, the project essentially promoted a single methodology (cost-benefit analysis of the total climate risk) as a means to support decision making. The more usual GEF project has a country focus where regional and country-specific outcomes are relatively easy to trace in a Theory of Change through specific actors as parties to the project.

2. The Terminal Evaluation of the GEF project on the Economic Analysis of Adaptation Options (ECA project, 3679) was carried out in 2012-13, following the GEF Evaluation Office procedures. The ECA project is difficult to evaluate as the focus shifted from the original design. In addition, the GEF evaluation framework highlights features of the project that were not established at the outset and thus scoring the impacts is problematic. The evaluation team has adopted a range of approaches to assess the enduring impact of the project.

3. The more in-depth evaluation is based on the original project scope and objectives. The evaluation begins with a formal Theory of Change. A 'null hypothesis' can be stated as: Adequate information for national planning has been realized in most countries due to the growing awareness of climate adaptation and harnessing of existing information. The ECA outputs of a taxonomy of measures, an inventory of costs and benefits (the fact bases) and analysis of finance were either not available to national decision makers, not required in developing national strategies, or limited in their relevance given the wealth of other information available."

4. The above statement remains—that is, there is little evidence that the ECA project outputs substantially affected national decision making on climate change adaptation.

5. The Total Climate Risk (TCR) method provides a valuable starting point for the conceptual thinking around short-term priorities for climate resilience. It focuses on current choices that align with the identification of no regret options. It appears as a useful communication tool – in the form of adaptation benefit cost curves. However these should only be seen as illustrative and do not lead to clear priorities; they are only one piece of information relevant to decision making.

6. The Evaluation Team has provided ratings for the original ECA project design, according to the UNEP/GEF evaluation criteria. The implementation of the project was contentious, with a commercial consultancy retaining most of the supporting material that might have led to a significant impact among methodological experts. The rapid test cases, largely divorced from processes in each country, did not lead to enduring impacts at that scale (and apparently were not expected to, at least according to the final report).

7. The overall evaluation concluded:

- Design limitations and performance that are judged as Moderately Unsatisfactory across the several criteria

- A critical review of the ECA methodology reveals serious shortcomings and an overall rating of Moderately Unsatisfactory at best

- Very little impact in the three test cases: with ratings of Moderately Unsatisfactory, but with a higher rating for Samoa

- Very limited impact in the methodological literature on the economics of adaptation: no rating given but would not be considered a satisfactory outcome of a major study

- Somewhat diverging views from the global survey, with peaks around Moderately Satisfactory for the three major components

- Detailed ratings across the UNEP/GEF evaluation criteria result in an overall score of **Moderately Unsatisfactory**

8. However, the project scope changed as the ECAWG prepared the final publication. A revised scope and objectives, as interpreted by the Evaluation Team, suggests a different 'null hypothesis': "Achievement of adequate information for national planning has been achieved in most countries due to the growing awareness of climate adaptation and available information. The ECA outputs of a taxonomy of measures and related costs were either not available to national decision makers, not required in developing national strategies, or limited in their relevance given the wealth of other information available."

9. The scores for UNEP/GEF evaluation framework for a revised design would be adjusted somewhat:

- Attainment of objectives: Satisfactory (upgraded from Moderately Unsatisfactory) recognising the greater impact of the final report in the debate on how to assess the economics of adaptation.

- Sustainability and catalytic role: might be upgraded slightly but the low impact of the report in the distributed community of practice on adaptation remains a strong conclusion

- Design quality and processes, M&E and UNEP complementarity remain unchanged as these were initial design issues that were not redressed in the final project.

10. Across these five categories in the evaluation framework, the total score would be **Moderately Satisfactory** (an upgrade of one step from the evaluation of the original design).

11. It is important to note that a major report was written with much useful advice and that a visible launch event was held. The Economics of Climate Adaptation project raised the global profile of economic appraisal as an essential component of adaptation decision making, and thus promoted the role of economic planning in climate policy beyond the earlier focus on sustainable environmental strategies and plans. However, it has not had a substantial or sustained impact in the peer reviewed literature or agency decision making.

1 Evaluation Background

1.1 Context

12. As an Implementing Agency of the Global Environmental Facility (GEF), UNEP has a considerable history of work on climate change, and climate adaptation in particular. The UNEP/GEF office led in many first round projects, including methodological developments that laid the foundation for the project on the Economic Analysis of Adaptation Options (ECA, GEF project 3679). However, other divisions have been active as well, producing various handbooks and guidance notes (e.g. the ProVIA network coordinated by DEWA) and supporting negotiations and technical assessments (such as the AdaptCost project led from the climate change adaptation unit in DEPI, see Watkiss et al. 2010). Sectoral divisions have supported more focussed efforts, and UNEP is a regular partner in international efforts, not least the IPCC itself (e.g. Working Group II's report covers adaptation in several chapters, Parry et al. 2007, and the Special Report on Extreme Events is a more recent analysis, IPCC, 2012).

13. This terminal evaluation report was commissioned in the late Spring of 2012, two years after the ECA project was completed. The evaluation included an inception report completed in June 2012, followed by extensive interviews and surveys and evaluation of three of the project's test cases. The zero order draft was submitted for review in November 2012 and revised in January 2013 as the first draft report. The final report was prepared in June 2013.

14. The ECA project was controversial from the outset, and this terminal evaluation has taken longer than anticipated to ensure an adequate review of the project impacts. However, the evaluation has been hampered by the interval between the project's completion and the start of the evaluation. Many of the key people involved in the project no longer work for UNEP, McKinsey & Company or the Government offices cited as contributing to the test cases. The original project officer at McKinsey has left the Company and no one in McKinsey responded to requests for interviews.

15. The evaluation:

- Uses the GEF Theory of Change to evaluate the stated project objectives and outputs. This is a very rigorous framework, but one that was routinely applied in UNEP project evaluations after the project was designed. The evaluation includes the project impacts against the scope and objectives that were informally revised near the project's conclusion.
- Takes a broader perspective in a detailed evaluation of the methodology and through an online survey, personal interviews and evaluation of three test cases to evaluate the project's achievements.
- Provides a set of conclusions and key messages.
- Includes annexes on the evaluation approach and results.

1.2 The ECA project

16. The ECA project (often referred to as the McKinsey project in deference to the lead consultant) was endorsed by the GEF CEO in May 2008 and certified as completed in December 2010 (a modest delay from the original completion date in March 2010). The total cost of the project was US$4.5 million, with less than US$1 million coming from the GEF.

17. It is important to note the context of this project:

- This was a multi-stakeholder, global effort, but for the most part outside the usual processes of coordination among agencies, for instance, it was mostly in parallel to the IPCC and UNFCCC expert assessments. The GEF contribution was essential to the project but did not constitute the majority of the budget.
- The project came to the GEF through the efforts of the lead consultants and not through the usual channels of a 'country driven' process or the initial efforts of project officers in UNEP and its partners. McKinsey put together the funding and the analytical team that led the project throughout.
- The analysis was initiated at a time when the economics of adaptation was just beginning to gain attention: the Stern Report was released a few years earlier (2006) but focused more on mitigation. The project was designed in the absence of a consensus, peer-reviewed methodology; indeed, developing a consistent methodology was one of its stated aims.
- There was relatively little evaluated experience of climate change adaptation at the outset of the project, with the National Adaptation Programmes of Action (NAPAs) just beginning to be funded by the time of the project's completion.

18. The project rationale, objectives and activities are presented in the section on the Theory of Change below.

19. The final report is listed as a product of the Economics of Climate Adaptation Working Group. This is a rather obscure reference, as the report notes: "The Economics of Climate Adaptation Working Group (ECAWG) was led by a core team comprised of members from each organizational partner" (p. 156) and then goes on to acknowledge the contributions of over 100 people. Presumably, the Core Team is more or less identical to the ECAWG. Interviews with people mentioned as part of the Core Team indicate that they did not lead in drafting the report and do not have access to all of the analytical material produced in the project. Essentially the project was developed and the products retained by McKinsey.

20. The Core Team was comprised of representatives of the coordinating organisations: ClimateWorks Foundation, European Commission, GEF, McKinsey, Rockefeller Foundation, Standard Chartered Bank, Swiss Re and UNEP. These are the organisations that contributed finance (mostly in-kind) to the project. Few of the Core Team would have been recognised at the start of the project as experts in the economic analysis of climate adaptation. (This is confirmed by a scan of publications in Google Scholar, see Section 3).

21. Note the terminal report observed:

> *"[The Steering Committee] did meet, but did not work effectively in all cases. Input into publication was a forcing mechanism and launch plan showed fissure in working team. Project input was not consistent and SC did not work as a team leading up to publication and so was unable to resolve disputes effectively. Project Manager team had to work as 'shuttle diplomacy' to drive to conclusion…The SC brought together some very divergent views…" (CC_PIR, 2010 p. 15-16)*

22. The project set out quite ambitious objectives (see section below). However, it appears that the project's objectives changed toward the end. The Project Implementation Report asserts:

> *"The project objectives were met and no significant changes were required that deviated from the project outline. The major challenges*

encountered are associated with achieving on-going implementation." (CC_PIR,2010 p3).

23. There was not a formal change in scope agreed by all the parties and the lead organisations.[1] However, the terminal report notes, for instance:

> *"Project scope moved away from financial models. The scope of the effort changed to focus on a tool to measure risk and identify through cost-benefit analysis the prioritized measures to fund – not approaches to raise funds. Project involved great involvement from private sector. (CC_PIR, p8) … However this move away from financing tools per se was endorsed by the GEF, and therefore accepted by the Implementing Agency." (CC_PIR, 2010 p10)*

24. This shift in scope presents a challenge for the terminal evaluation, as noted below.

The ECA project stands out as 'unusual' for the GEF and SCCF in that it came through the direct initiative of McKinsey & Company who put together a package of funding and led the analysis. The project was developed at a time when there was little global advice on the economic analysis of adaptation, although many experts and leading organizations were addressing relevant issues.

1.3 Evaluation approach

25. The approach to the terminal evaluation draws together several lines of analysis. The most detailed analysis is based on a Theory of Change (TOC). The existing project documentation (see Annex 5) does not contain a detailed TOC. Thus, the evaluation may not correspond to the TOC that the project team worked with (albeit implicitly as they did not use this framework). However, the TOC outlined below captures the main components of the project's logical framework. The evaluation tables on design quality from the Inception Report are presented in Annex 8).

26. The evaluation approach starts with the Results Chain—the Impact Pathway as a method for engagement, discussion and subsequent analysis. The Results Chain summarizes causal relationships to help identify or clarify the assumptions in the intervention logic of the project. The method requires verification of the causal logic between the different hierarchical levels of the logical framework relating impacts with outputs and objectives. (See GEF Evaluation Office, 2008; Nichols and Martinot, 2000). Details of the results chains and TOC approach are reported in Annex 1.

27. The Evaluation Team assessed the project with respect to criteria established by the UNEP Evaluation Office. These are grouped in four categories, each with more details:

28. 1. Attainment of objectives and planned results--outputs achieved, relevance, effectiveness and efficiency and outcomes towards future impacts

29. 2. Sustainability and catalytic role--financial, socio-political, institutional and ecological factors conditioning sustainability of project outcomes, efforts and achievements in terms of replication and up-scaling of project lessons and good practices

[1] Personal communication, UNEP project officer, 10 April 2013

30. 3. Processes affecting attainment of project results--project preparation and readiness, implementation approach and management, stakeholder participation and public awareness, country ownership/driven-ness, project finance, UNEP supervision and backstopping, and project monitoring and evaluation systems

31. 4. Complementarity with the UNEP strategies and programmes

32. Several of these criteria were reviewed in the Inception Report—these have been updated and included in the full impact evaluation. The scoring of the project's objectives and impacts was done by the Evaluation Team (see Annex 6 for their short bios) and are presented below as our 'best guess' of the project's impacts on each category in the UNEP/GEF evaluation framework.

33. From the outset of the project, and noted in the project's final documentation, the ECA approach was controversial and remains so even two years later. In order to poll a wider range of views, an online survey based on the TOC and project objectives was prepared and sent to over 400 experts around the world. Results from their impact scores are presented as a complement to the evaluation team's views.

34. One hallmark of a methodological project is its impact in published literature and peer reviewed journals. A scan of citations from Google Scholar is presented to judge the extent to which the project report stands as a milestone in the literature.

35. The Evaluation Team looked in more depth at three of the test cases, chosen as part of the evaluation design with the UNEP Evalaution Office. The summary is presented here (see Annex 10 for details).

36. The Evaluation Team noted that the project started out with a very specific set of objectives and expected outputs. Toward the end of the project, the ECAWG realised that the context of decision making on adaptation was somewhat different than had been assumed. As a consequence, the project was modified to a considerable extent. This change of scope was not documented although it was agreed by the GEF and lead partners. For the most part, this evaluation has been based on the initial scope of work and theory of change. However, recognising the shift in scope, we offer a modified review as well.

37. The Terms of Reference and work plan for the evaluation and further details are presented in Annexes 2, 3, 4 and 5. Annex 7 reports on the finance and expenditure.

The ECA project is difficult to evaluate as the focus shifted from the original design. In addition, the GEF evaluation grid highlights features of the project that were not established at the outset and thus scoring the impacts is problematic. The evaluation team has adopted a range of approaches to assess the enduring impact of the project.

2 Project Design and Theory of Change

38. Annex 1 presents the Theory of Change, assumptions and causal logic that were established in the Inception Report. This section presents the TOC approach and summarizes the review of Design Quality from the Inception Report. It also notes the revised scope and objectives.

2.1 Project objective and relevance to UNEP

39. The ECA project identified the following project objective:[2]

> *"The primary objective of this study is to develop a framework and information base to support increased and innovative means of financing adaptation to climate change. This will be done by supporting decision making processes in the public and private sector with economic and environmental assessments of the costs, benefits and options for effective adaptation. The project meets an important gap that will assist decision makers from the local to the international levels. The project will also deliver a fundamental contribution towards the assessment of the global financing needs for adaptation by delivering credible bottom-up estimates that can be integrated in parallel efforts to estimate the macro-economics of adaptation."*

40. UNEP and the GEF Special Climate Change Fund (SCCF) have mandates related to adaptation, and these are the background to the ECA project's rationale and design. However, the ECA project documentation does not establish a close connection to such organisational criteria and priorities. A reconstruction of the project relevance to UNEP's adaptation strategy is attempted nevertheless:[3]

- SCCF: Section C of the Project Identification Form (PIF) notes the contribution of the project to establishing a baseline for adaptation planning and assessment of additional needs. DEPI is noted as supporting the analysis of vulnerability, adaptation, development economics and ecosystem services.
- UNEP's Expected Accomplishments and POW for 2010-2011. The project pre-dates UNEP's Medium Term Strategy (MTS). The PIR shows the indicators from the Climate Change Tracking Tool for renewable energy, energy efficiency and transport, but does not mark any contribution from the project in these areas.
- Alignment with the UNEP Bali Strategic Plan. The Bali Strategic Plan (BSP) was established in 2004 and so would be a relevant background to the project. The word 'Bali' is not found in the PIF nor PIR, so this connection was not explicit in the project design. Although climate change is a thematic area, the ECA project was not devoted to technology and capacity building. However, there would be some benefits, for example, to "strengthen the capacity of Governments of developing countries … To achieve their environmental goals, targets and objectives".

[2] GEF. 2008. Project Identification Form (PIF). The final Project Implementation Report (PIR) shows a simplified objective but with much the same intention.

[3] These are general criteria that underpin the project design. See the following section for more detailed notes on the project design following the GEF EO guidelines.

- Gender. The PIF does not mention gender and there is little evidence in the case studies or global synthesis that gender was addressed as a specific component of vulnerability or as an attribute in planning adaptation. The words 'gender' and 'women' are not found in the main text of the final report.
- South-South Cooperation. The project was directed by a global team based in McKinsey offices and did not include explicit south-south capacity building or cooperation. The test cases were largely conducted by McKinsey consultants, drawing upon interviews with national stakeholders and experts, but not designed to bridge experience from one case study to another.

2.2 Project design: Original components, outputs and outcomes

41. The project was designed around three components, each with indicated outputs and a desired outcome:

Table 2. ECA project components, outputs and outcomes

Component	**Outputs**	**Outcome**
1. Analytic fact base on the economics of adaptation and a synthesis of lessons learned from existing experience	Taxonomy of adaptation measures for a representative sub-set of climate change impacts Bottom-up assessment of cost and financing requirements for a representative and replicable sub-set of adaptation measures Synthesis of lessons learned and micro-economic input into ongoing work to define global financing needs for adaptation	Increased information for supporting investment choices in adaptation by public and private decision makers
2. Development of adaptation financing models and approaches involving appropriate participation from the public and private sector	Situation analysis of existing approaches to adaptation financing Identification of investment types and financing approaches 'Solution paper' outlining options for resource mobilization	Improved ability to identify appropriate financing approaches to meet investment needs
3. Decision support tools to help a broad range of decision-makers understand trade-offs between different adaptation measures as they develop adaptation strategies in	Tools to support public-sector decision-makers to effectively utilize funding to reduce vulnerability Exposure assessment framework for private companies to understand implications of adaptation over relevant time frames	Improved decision making capacity by private and public decision makers for directing resources towards reducing vulnerability to climate change

development of adaptation strategies		

42. The three outcomes reflect a chain of results:

43. Increased information → Ability to secure finance → Reduced vulnerability

44. It is worth noting that this progression is the common formulation of improved policy resulting from increased information. In contrast, there is a wealth of experience and guidance (including on climate adaptation, for example in UNDP's Adaptation Policy Framework) that adaptation policy is rooted in organisational management and change (see for instance, Moser and Eckland, 2010). The project assumption that information is the key barrier is problematic, even more important as it influences the choice of methodologies and management of the project.

2.3 Revised project design

45. As noted above, the project scope and objectives shifted somewhat. The following table identifies what appeared to be the expectations at the end of the project. This evaluation offers an interpretation of these revised components, albeit not a full analysis against the entire UNEP Evaluation framework EO grid.

46. The revised project and final report appear to propose an alternative results chain:

47. Expanded debate about methods in the Community of Practice → Better decision support methods, tools and decision frameworks → Improved decision making → Reduced vulnerability

48. This is still part of an information-led Theory of Change that assumes rationality, but adds the initial and intervening roles of experts in supporting decision making, who then improve their toolboxes and fact bases to support actual decision making. This places the project in the role of capacity building rather than direct decision support. Hence, the ECA project's toolboxes and fact bases are less important in this model than expertise and applications.

Table 3. Revised project design

Original components	**Revised objectives**	**Evaluation**
1. Analytic fact base on the economics of adaptation and synthesis of lessons learned from existing experience	Test cases to experiment with a global framework rather than a country-driven data base for strategic planning	Section on test cases (4) would be less relevant; Evidence from test cases as to how they resolve methodological weaknesses (Section 6) or offer insight into other methods (considered in Section 7)

		would be required
2. Adaptation financing models and approaches involving participation from public and private sector	Component on financing models was dropped; Revised objective might have been to build the economic case for investment in adaptation and synergies with development	Not directly evaluated. The economic case for adaptation was developed in other forums and reported by the time this project was started; final report notes that most of the options are already known as part of good practice in development
3. Decision support tools to help decision makers understand trade-offs between measures as they develop adaptation strategies	Explore a global economic framework as one of several lines of evidence that adaptation analysts would consider in working with decision makers	Overview of this revised objective is included in the introduction to the evaluation (Section 2) with more detailed notes in the evaluation of the methodology (6) and the assessment of the global impact (5).

The evaluation is based on a formal Theory of Change. The 'null hypothesis' can be stated as:

Achievement of adequate information for national planning has been achieved in most countries due to the growing awareness of climate adaptation and available information. The ECA outputs of a taxonomy of measures and related costs were either not available to national decision makers, not required in developing national strategies, or limited in their relevance given the wealth of other information available.

The revised project scope reflects a different proposition: The final report of the ECA project brought together a rich set of illustrative examples of how the costs and benefits of climate adaptation might be quantified and how a cost-benefit analysis might be used in making decisions. The report stimulated a vigorous debate on economic decision making on climate change adaptation in general and about the use of CBA in particular.

2.4 Ratings of the original design for the GEF evaluation grid

49. The UNEP Evaluation criteria for design quality are comprehensive. Some do not fully apply to this project — for instance the project is an assessment and did not produce direct actions that would need to comply with social safeguards. And some of the current UNEP strategies and plans came forward after the project was designed (but during the period in which it was active). The criteria are:

- Relevance to UNEP
- Results & causality
- Efficiency
- Sustainability/replication
- Catalytic effects
- Risk & social safeguards
- Governance
- Management & partnership
- Finance/budgeting
- Monitoring
- Evaluation

50. As per UNEP and GEF requirements, the ratings are on a six-point scale. The Evaluation Team interprets these for this review as follows:

- HS: Highly Satisfactory—clear evidence and overwhelming consensus that the outcome has been achieved and the project was instrumental in that achievement
- S: Satisfactory—the outcome has been achieved, as supported by evidence although the interpretation of the project's role is not clear
- MS: Moderately Satisfactory—the outcome was only partially achieved and the project had limited contributions to this outcome
- MU: Moderately Unsatisfactory—the outcome was only partially achieved and the project had no contribution to this outcome
- U: Unsatisfactory—the outcomes were not achieved and the project had no effect
- HU: Highly Unsatisfactory—the project contradicted the expected outcome and prevented achievements that would otherwise have been realised

51. A similar rating is required for Sustainability:

- HL: Highly Likely—clear evidence and overwhelming consensus that the outcome has been achieved and will be sustained as a major contribution and benchmark in the field; and the project was instrumental in that achievement
- L: Likely —the outcome has been achieved and is likely to a sustained outcome at least over the course of programme timescales (3 to 5 years), supported by evidence although the interpretation of the project's role is not clear
- ML: Moderately Likely —the outcome was only partially achieved and may be no more than an intermediary step that does not endure as a major contribution; and the project had limited contributions to this outcome
- MU: Moderately Unlikely - the outcome was only partially achieved and is not expected to be a sustained effect; and the project had little or no contribution to this outcome

- U: Unlikely - the outcomes were not achieved and therefore are not sustained; and the project had no effect
- HU: Highly Unlikely - the project contradicted the expected outcome and presents a barrier to a sustained effect

2.5 Summary of the ratings for the original design

52. The following summary is based on the review tables in Annex 8 (based on the TOR for the Terminal Evaluation).

53. Note that the documentation for the project design is sparse. Major parts of the evaluation grid are missing in the available documentation and are therefore marked as Unsatisfactory or Unlikely. For instance, the Evaluation Team has no information on the design for evaluating the project. Although the PIR is complete, no additional M&E information is available from the course of the project itself.

54. Some of the design features appear to be consistent with the intention of the grid, and are therefore rated as Satisfactory. However, the overall view is that the project had major shortcomings in the design and this limits the ratings to rather poor marks. Only two of the criteria score 'above the line', with a Moderately Satisfactory rating. Most of the criteria were rated as Moderately Unsatisfactory. Clearly this would be an unacceptable standard for a major project of this sort if it were to be designed according to present procedures.

55. The Evaluation Team has modified the ratings produced for the Inception Report, following interviews with key experts. These 'design' ratings would apply for the revised project scope and objectives as well.

The design of the project and the scoring against the evaluation criteria leads to an overall rating of Moderately Unsatisfactory.

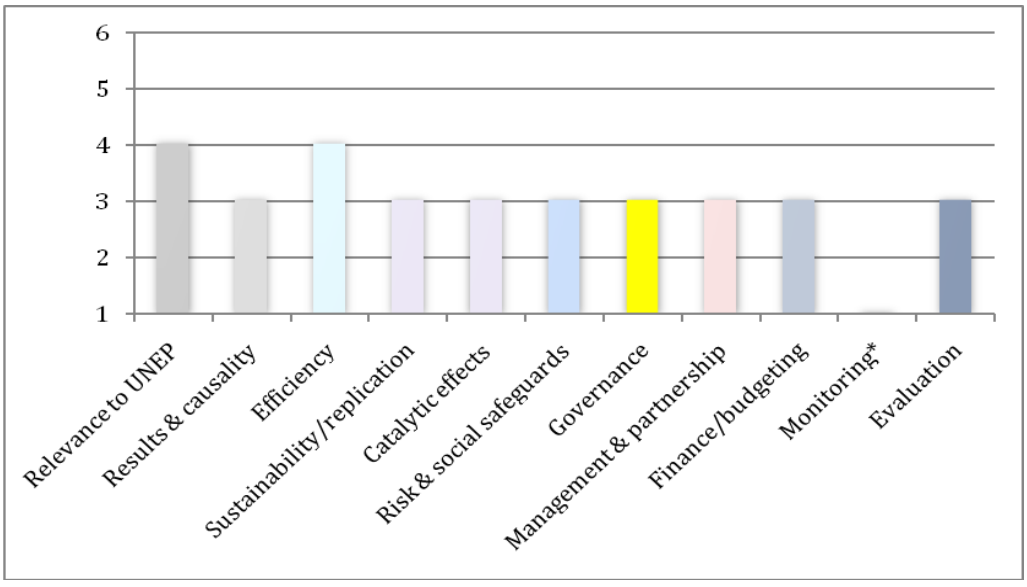

Figure 1. Ratings for the major criteria in project design. *The monitoring criteria were insufficiently documented to provide a reliable rating.

3 Project Performance and Impact Based on GEF Criteria

56. This section presents the Evaluation Team's scoring on the four criteria established by the GEF Evaluation Office. As stated in the background chapter, these are:

57. 1. Attainment of objectives and planned results--outputs achieved, relevance, effectiveness and efficiency and outcomes towards future impacts

58. 2. Sustainability and catalytic role--financial, socio-political, institutional and ecological factors conditioning sustainability of project outcomes, efforts and achievements in terms of replication and up-scaling of project lessons and good practices

59. 3. Processes affecting attainment of project results--project preparation and readiness, implementation approach and management, stakeholder participation and public awareness, country ownership/driven-ness, project finance, UNEP supervision and backstopping, and project monitoring and evaluation systems

4. Complementarity with the UNEP strategies and programmes

60. This grid is applied in detail to the original design. How these scores would be adjusted based on the implied change in objectives is included as well. Finally, a more detailed analysis of the monitoring and evaluation plan and final Project Implementation Report is provided.

3.1 Original design

61. In the tables in Annex 9, the evaluations of design quality from the Inception Report are inserted in the relevant sections (marked as * in each table). While there is some realignment of criteria for evaluating overall impact, this establishes the baseline of expected impacts at the design stage. Note that these scores are slightly adjusted from the draft Inception Report.

62. The Evaluation Comments draw upon the lines of evidence suggested in the introduction. The project document includes a results framework and the PIR carries ratings for each output and overall performance for each outcome. These are quite detailed tables—the final section below summarizes the M&E plan and performance to provide supporting detail for the ratings in the criteria tables.

63. The ratings for the four criteria, averaged across the many aspects, are shown in Figure 2 below. Overall, the project is rated as Moderately Unsatisfactory, although it scores relatively better for complementarity with UNEP's work programme. Within each criteria, there is a range as well, although rather few extremes of either Unsatisfactory or Satisfactory.

The Evaluation Team has provided ratings according to the UNEP evaluation criteria. The PIR ratings are at odds with this evaluation. However, it is important to note that the Team accepts that a major report was written, that it contains much useful advice and is very accessible, and that a visible launch event was held. However, these are not fully adequate indicators of 100% achievement and a Highly Satisfactory rating against the ambitious plans laid out as objectives and outcomes.

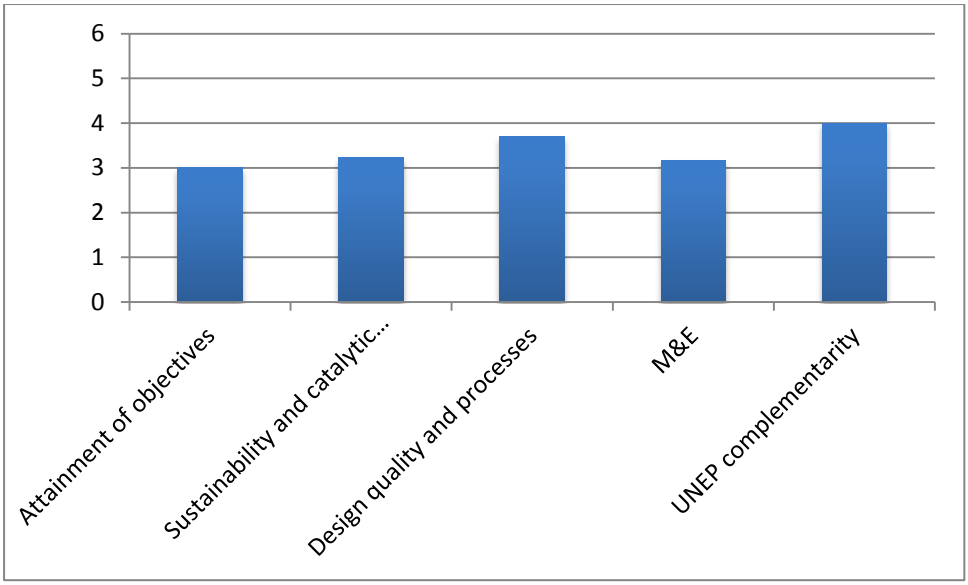

Figure 2. Summary of ratings for major categories

Table 4. Evaluation of the results framework and project implementation report

Outcome	**Indicators interpreted from text**	**End of project targets**	**PIR : Level at 30 June 2010**	**Evaluation Team notes**
1. Increased information for supporting investment choices in adaptation by public and private decision makers	Government reviewed case study fact base Government approved information for use in public decision making Government approved information for private spending Spending on approved activities would reduce vulnerability to climate change	Synthesize factual information from case studies Analyze case study information and its suitability to support public spending As above, to support private spending Support decision making at national and regional levels Assess adaptation costs in case studies Support other global assessments through the case study costs Engage with national and regional decision makers Ensure national goals are included in assessing adaptation measures	Complete. Worked with local governments in each case study Final report highlights status of research Costs are completed in each case study Costs are documented in significant detail	There is a gap between governments approved and reviewed information and 'worked with'. No evidence of formal government or GEF focal point endorsements of the case study fact base or analytical interpretation. Status of research is not a baseline indicator, although the ECAWG did engage actively with other global assessments Costs are not differentiated by public and private costs or matched to public or private decision making and finance Role of national goals varies—covered in some case studies but not consistently; little evidence that the ECA report shaped subsequent development plans
2. Improved ability to identify	Document on finance option	Learn from and modify existing model to fit adaptation context	Complete. Scope moved away from	The anticipated outputs on finance were not completed, although this appears to have been agreed with

appropriate financing approaches to meet investment needs		Help donors and capital markets to include adaptation in their own strategic objectives Participation from private sector players, both global and local Elevate adaptation to the same level as mitigation	finance models Scope changed to a tool to measure risk and cost-benefit analysis Great involvement from private sector	GEF SwissRe have been partially supportive of the project; little evidence that other global private sector companies engaged and no real evidence of local private sector interest; otherwise not clear how capital markets have included the ECA findings Controversy over the project raised many concerns; World Bank's global effort did far more to create a comparable analysis as for mitigation
3. Increased awareness and knowledge available to private and public decision makers for directing resources towards reducing vulnerability	Launch event Decision support tool (DST) is launched DST allows individual country decision makers to evaluate measures Measures include ability to reduce loss from hazard event	Improve capacity for decision making Private and public stakeholders increase capacity to direct resources to reduce vulnerability to climate change Tool developed with input from public and private stakeholders Tools assess vulnerabilities and measures based on sound risk management principles Sponsors of project ensure tools are mainstreamed into sustainable development strategies across	Complete. Very successful launch Attendance from range of experts and participants, including country decision makers Ongoing roll-out of approach and findings	Launch was visible; controversy over the methodology and detailed conclusions was widely noted (and by the UNEP Task Manager) Attendance is a poor measure of impact Ongoing roll-out stalled; very little presence in the peer-reviewed literature or ongoing establishment of good practice in guidance material (e.g., ProVia) The DST is a description in the report rather than a 'tool' that can

to climate change		geographies Project benefits case study countries Project benefits global players in the climate change and adaptation space Project includes a roll-out of its key findings, through participation in global debates and discussions on adaptation		be readily applied; the ECA report acknowledges that the case studies (renamed as test cases) are not a complete fact base nor sufficient analytical guidance for national decision making Little evidence that sponsors have mainstreamed the ECA fact base and analysis (although some continue to work on the economics of adaptation)

3.2 Revised Scope

64. As noted above, the ECA project shifted from its original scope. The UNEP Task Manager officer confirmed this, noting that the shift in scope became apparent late in the project and it would have been difficult to change the project design documents with the ECAWG and lead consultant. At a time when the project team was working hard to bring together the very many pieces, this would only delay the project's final workshop and report.

65. The revised scope is introduced above. The scores in the section above, based on the original project design, might be adjusted given the final scope and objectives:

- Attainment of objectives: Satisfactory (upgraded from Moderately Unsatisfactory) recognising the greater impact of the final report in the debate on how to assess the economics of adaptation.
- Sustainability and catalytic role: might be upgraded slightly but the low impact of the report in the distributed community of practice on adaptation remains a strong conclusion.
- Design quality and processes, M&E and UNEP complementarity: remain unchanged as these were initial design issues that were not redressed in the final project.

66. Across these five categories in the UNEP evaluation framework, the total score would be Moderately Satisfactory (an upgrade of one step from the evaluation of the original design).

67. Section 4 reviews the three test cases. In the revised project scope, the test cases are not intended to influence national decision making; hence, the evaluation of the test cases would be mostly irrelevant. However, the startling conclusion that the ECA report had very little impact remains—the project did not trigger a substantive and enduring debate about economic decision making in those countries. The scores for the test cases would not be changed based on the revised objectives.

68. Sections 5 and 6 below review the global impact and methodology. The global survey looked at outputs and outcomes rather than the original design *per se*. The conclusion found more support for the impact of stimulating a methodological debate than for substantiated impacts on actual decision making. Conversely, the report is not widely referenced in the academic literature, and appears to have had little impact on peer reviewed thinking on the economics of adaptation. The review of the Total Climate Risk methodology, finds serious limitations that are inherent in the methodology. The rating of Moderately Unsatisfactory would not be altered by the revised scope and objectives. However, there are methodologies for exploring methodologies and these would have been useful in the revised design.

3.3 Review of the project's M&E plan

69. At the outset of this discussion of the M&E plan it is important to note several features of the project:

- The project came through the initiative of a commercial company and high level agreements within the GEF, UNEP and its partners. It did not arise from the initiative of climate focal points in these organisations. Their roles appear to have been in reviewing the draft pro-doc and 'backfilling' administrative requirements for approval, which included the M&E plan.

- It was a global project. However, the process of project design was not 'country driven'; the usual way of developing GEF projects. There are only a few of these in the SCCF (and related GEF) funds.
- It was a short project, one year (with only a small over-run in the timings). Mid-term targets were not set. And most of the final synthesis and reporting was accomplished at the very end.

70. These design features point to a conclusion that little attention was paid to developing an M&E plan.

71. The pro-doc was revised to include an M&E Plan and results framework. The results framework follows the GEF requirements. However, the PIR mostly adds a comment to column 'Level at 30 June 2010'. Clearly, the M&E Plan was not operationalized. No real data on the indictors is offered as a measure of the achievements (other than having produced a report and holding a launch event).

72. The results framework itself simply copies text from the proposal. The M&E Plan restates the project outcomes and then lists the expected outputs. However, the Plan suggests that achieving the outputs (e.g., a report) equates with full achievement of the objectives and outcomes. The lack of a theory of change reduces implementation monitoring to 'ticking' boxes. Most of the expected fields are very general statements of the rationale for the project rather than the translation of the project expectations into real indicators and a clear baseline.

73. The PIR acknowledges these shortcomings:

Does the project M&E plan contain the following?

Baseline information for each outcome-level indicator	Yes ☒ No □
SMART indicators to track project outcomes	Yes □ No ☒
A clear distribution of responsibilities for monitoring project progress.	Yes □ No ☒

74. (The Yes tick for the first line is problematic in as much as the baseline is a discussion of the rationale for the project and the context of the outcomes rather than a set of indicators that could be measured again at the end of the project.)

75. The PIR records 100% completion of each output. However, the original outputs were not fully achieved as the final reporting notes that the project design was changed, but this was not documented. It seems it would be more accurate to record that the objective or output was partly achieved (say 25% for the typology of actions) but that this was satisfactory as the project team and managers (including UNEP and the Steering Committee) accepted that this was a change to the methodology and work plan. Instead, it may be interpreted that the final report was pulled together in the closing stages of the project and the project managers accepted that some of the objectives could not be fully achieved at the time. The Evaluation Team fully acknowledges that the project was very ambitious in its original objectives.

76. The indicators shown in the M&E Plan are rather vague statements rather than measures that could be established as a baseline and form an effective tracking of progress

and impacts. Independent validation of the statements provided as the level of impact at the end of the project was not provided and would have been difficult.

4 Project Performance and Impact in Three Test Cases

77. Three test cases were evaluated in some detail (see Annex 10). The most salient conclusion from evaluating the three test cases is that the people originally involved (as stated in the final report of the ECAWG) are not available. In many cases, they no longer work on climate adaptation or have moved to more senior roles where the use of economic methods would not be expected. None that the evaluation Team were able to interview had a working knowledge of the ECA report and few were even aware of it. There is no evidence in the three countries that the report had any impact on national or local decision making. We did not find any direct reference to the report, the test case findings or the cost-benefit methodology as part of ongoing policy development in those regions.

Table 5. Summary ratings for three test cases

	Methodology	**Impact**	**Investment & Finance**
Maharashtra, India	MU	U	MU
Samoa	S	U	MS
Tanzania	U	U	MU

Evaluation of the three text cases reveals very little impact on national or local decision making. Few stakeholders and experts in the countries are aware of the report and none that were interviewed claim it was influential in their analyses of adaptation options.

5 Project Performance and Impact: A Global View

5.1 Impact in cited literature

78. A search of Google Scholar revealed very few citations to either McKinsey (in the context of adaptation) or the ECAWG (see table below). A typical reference appears to be:

> *"These two pilot sectors were selected because of their vulnerability to existing climate variability and projected climate change risk;(14) their importance to the city's development agenda; the fact that the EPCPD had a good working relationship with key individuals within these sectors; and that these two sectors would be affected by similar climatic factors (e.g. the loss of wastewater treatment infrastructure during a storm would result in health impacts)."*
>
> *14. This draws on the concept of "total climate risk", i.e. both current climate risk and the additional future risk that climate change may present. See The Economics of Climate Adaptation Working Group (2009), Shaping Climate Resilient Development. A Framework for Decision- making, joint report by ClimateWorks Foundation, Global Environmental Facility, European Commission, McKinsey & Co., The Rockefeller Foundation, Standard Chartered Banks and SwissRe.*

79. Cited in Debra Roberts, 2010. Prioritizing climate change adaptation and local level resilience in Durban, South Africa. Environment and Urbanization 2010 22: 397. DOI: 10.1177/0956247810379948.

80. Yet, we know that eThekwini Municipality in Durban further developed its assessment, drawing in part on the ECA approach, while substantially extending the methodology to reflect social values.

81. Thus, the report itself does not seem to have made it into the mainstream of journal and public document citations. The report is not cited in the draft guidance prepared by UNEP under the ProVIA initiative (indeed, the ProVIA lead authors did not seem familiar with the report). A peer reviewed version of the ECAWG report does not appear to have been produced.

82. It is worth putting this slight record of citations into context. Searching Google Scholar for citations since 2009 reveals:

- Over 18000 citations on the 'economics of climate adaptation'
- Over 200 Google Scholar citations to publications by Paul Watkiss one of the leading experts on the subject

83. While these are imperfect benchmarks, they are informative.

84. However, this leads to a more general observation. The Stern Report included climate adaptation, but as a lesser part of its focus on mitigation and climate policy. To some extent, its treatment is based on the benefits of action, rather than an exploration of the economics of adaptation decision making. This was pretty much the state of play around 2005 or so—adaptation was considered part of an environmental policy in most countries and only

beginning to surface as an economic issue. Estimates of the global cost of adaptation dominated the existing assessments (e.g., the AdaptCost project led by UNEP).

85. McKinsey's framing of adaptation decision making as a cost-benefit exercise in public policy thus came as an almost unique contribution. Groups such as the Stockholm Environment Institute had developed a more catholic approach using various economic and rational choice methods in the Adaptation Decision Explorer (www.weAdapt.org) and individual studies used a wide variety of methods (for instance, Robust Decision Making developed by Rand). However, the ECA project was one of the first to systematically test a single method on a global scale.

86. While the impacts documented in this evaluation are not encouraging, the sense in which McKinsey led a shift from adaptation as 'environment' to adaptation as part of the economics of public decision making is important to note. Several projects, more or less at the same time, contributed to this global debate on economic methods, including the World Bank's projects on Ricardian methods, social dimensions of adaptation and economic evaluation in developing countries, the UNFCCC and UK reviews of regional economics studies (so-called RECCs), UNEP's AdaptCost, and several EC research projects (notably the recently completed ClimateCost project and earlier work using the Peseta model).

The Economics of Adaptation project raised the global profile of economic appraisal as an essential component of adaptation decision making, and thus promoted the role of economic planning in climate policy beyond the earlier focus on sustainable environmental strategies and plans. However, it has not had a substantial or sustained impact in the peer reviewed literature or agency planning.

Table 6. Citations to the ECA report in Google Scholar

Citation	**Comment**
Prioritizing climate change adaptation and local level resilience in Durban, South Africa. D Roberts - Environment and Urbanization, 2010 - eau.sagepub.com	Refers to the 'all climate risk' concept only
Sewing climate-resilient seeds: implementing climate change adaptation best practices in rural Cambodia. AL D'Agostino, BK Sovacool - Mitigation and Adaptation Strategies for …, 2011 - Springer Expert views of climate change adaptation in least developed Asia BK Sovacool, AL D'Agostino, H Meenawat… - Journal of Environmental …, 2012 – Elsevier Energy security: challenges and needs. BK Sovacool - Wiley Interdisciplinary Reviews: Energy and …, 2012 - Wiley Online Library Improving climate change adaptation in least developed Asia. BK Sovacool, AL D'Agostino, A Rawlani… - Environmental Science & …, 2012 – Elsevier	Series of articles by Ben Sovacool, do not use ECA methodology, indirect reference
Insurance Pricing for Windstorm-Susceptible	Technical paper on a more

Developments: Bootstrapping Approach. IH El-adaway - Journal of Management in Engineering, 2012 - ascelibrary.org	advance methodology for cat-risk modelling (full text not available)
Dollars and Sense: Economic Benefits and Impacts from Two Oyster Reef Restoration Projects in the Northern Gulf of Mexico. T Kroeger - The Nature Conservancy, Arlington, VA, 2012 - nature.org	Single reference: "Such ecosystem-based adaptation approaches in many places of the world have been found to be among the more cost-effective measures to reduce damages from climate events (Economics of Climate Adaptation Working Group, 2010; Caribbean Catastrophe Risk Insurance Facility, 2010). "
Can an Integrated Problem-Based Learning Framework Improve Natural Hazard Management? IH El-adaway - Journal of Professional Issues in Engineering …, 2011	Integrated framework (PBL) runs counter to EACWG model (full text not available)
Integrated Education Plan for Natural Hazard Management. CA South Lake Tahoe, JE Taylor… - Proceedings …, 2011 Preparing for Change. R Baltar - 2011 -	Appear to mention studies only (full text not available)
What Social Science Can Teach Us About Local Adaptation. SM Kane - Climate, 2011 - Springer Adaptation to climate change is the focus of great attention in public policy decision making, international economic development, and international negotiation. This chapter offers thoughts on lessons learned from social sciences and examines vocabulary and the ...	Critical review by a leading climate adaptation economist
Water and Climate Dialogue. WWN Broader - 2011 - agua-cambioclimatico.org The world is right to be concerned about climate change, which poses major threats to humans and ecosystems. The 2007 United Nations Climate Change Conference in Bali acknowledged that even the minimum predicted shifts in climate for the twenty-first century ...	Typical reference is found in this public overview: "The climate risk of such infrastructure should be assessed, at a sector and/or project level." With a footnote to: Economics of Climate Adaptation Working Group (2009) contains cases studies at the regional level.
Climate Change Mitigation Against Economic Development-The Asian Debate in the Copenhagen	General report, pre-dates ECA final report

5.2 Global survey of experts

87. The Evaluation Team compiled a survey based on the evaluation framework. The survey was implemented in an online module. The link was sent to three separate mailing lists, including all of the contacts mentioned in the ECA report.

88. The majority of experts sent the survey had not seen the report and apparently were not aware of the project. While the distribution list was not a random sample of all practitioners, it was a selected list of people from our extensive networks who work on climate adaptation:[4]

- Survey sent to over 448 experts (it was passed on to others, so the total pool of respondents is probably greater than this)
- Number who opened the survey (others may have read the introductory paragraph but not opened the survey link): 84 The implication is less than a quarter thought the issue was salient enough and that they were sufficiently familiar with the ECA to look at the survey. Given the visibility of adaptation this is a very low result although we are not able to compare this with other surveys of this sort
- Number who filled in at least the first question and were aware of the ECA project's documentation: 24
- Respondents who had seen a presentation and/or the executive summary: 9
- Respondents who had read the main findings and/or the full report (which includes the test cases): 15
- Respondents who classified themselves as working on the economics of adaptation: 4

89. Considering the very low citation record of the report (as shown above), the low response rate is likely to indicate that the ECA project and the final report do not have a continuing 'presence' in the climate adaptation community. This is confirmed by personal interviews at several global events and in the country test case evaluations. Less than 5% of the experts sent the survey responded and would be considered knowledgeable about the final report. It certainly is not considered a major benchmark in the adaptation literature.

90. The aggregate responses to the survey questions are shown in the figure below. However, it is important to note that only 4 of the 15 respondents considered themselves as experts in the economics of adaptation. These results are an impression of the ECA among a broad spectrum of experts working on environment-climate issues and not a peer review panel of the report and project outcomes.

[4] The Evaluation Team is well aware of the limitations of the survey design. The survey was sent to everyone in the ECA report and everyone the Team knew were working on the economics of adaptation. It was designed to be a purposeful sample and not a random sample of all experts and decision makers. If respondents had reported greater familiarity with the final report, the Team would have had the option of follow up surveys and reaching a higher overall response rate. However, the Team found it quite rare to find an expert or decision maker who had read the report, or even were aware of the ECA project. As such, the Team did not think it worthwhile expanding the survey pool.

91. The first project component, with four outputs, which was largely concerned with a taxonomy of adaptation measures and the overall approach, was viewed as Moderately Satisfactory--with a central range from MU to S. These outputs are:

- Situation analysis of existing approaches to adaptation financing
- Identification of investment types and financing approaches
- 'Solution paper' outlining options for resource mobilization
- Improved ability to identify appropriate financing approaches to meet investment needs

92. The second component focussed explicitly on finance, including a planned deliverable as a report on financial modes:

- Situation analysis of existing approaches to adaptation financing
- Identification of investment types and financing approaches
- 'Solution paper' outlining options for resource mobilization
- Improved ability to identify appropriate financing approaches to meet investment needs

93. This component - with an explicit focus on improved information for matching adaptation priorities to existing finance - apparently was dropped from the project as priorities among the ECAWG shifted. In any case, this component was viewed slightly less favourably than the first component - but still with a consensus rating of Moderately Satisfactory.

94. The major component of the project was expected to achieve:

- Tools to support public-sector decision-makers to effectively utilize funding to reduce vulnerability
- Exposure assessment framework for private companies to understand implications of adaptation over relevant time frames
- Improved decision making capacity by private and public decision makers for directing resources towards reducing vulnerability to climate change

95. This component was also viewed as Moderately Satisfactory. However, most respondents did not consider the delivery of a private sector decision framework a success.

96. The survey also included pairs of statements and asked respondents to indicate the extent to which they agreed/disagreed. The survey was designed so these would be rather extreme statements that reflected on the underlying Theory of Change for each component of the project. The results are interesting, but not conclusive in the scoring. It may be the pairs were difficult to judge or the sample size of respondents is just too small. Results are shown in Table 7 below.

97. Perceptions of the impact are ambivalent (the first comparison, 1a). Clearly the ECA was not 'a Stern' in terms of its global impact, but noteworthy nonetheless. Also ambivalent was whether the data are available (1b)in fact, the only widely available ‘data’ are the graphs in the report). There was overwhelming support for the use of economic analysis in making adaptation decisions (statement 2a), although it is unclear if respondents were referring to the concept of the ECA or to the CBA techniques used in the framework. The respondents were inclined to think the approach would be important and visible in the private sector (2b). The third pair of statements confirms support for CBA (3a) but also viewed as essential the need for multiple lines of evidence and using more than one approach (3b) -- over 70% indicated positive agreement.

98. As shown in the figure (bottom right), the overall rating from the survey is difficult to interpret. Half of the respondents rated the project as below average (scores of 5 or less); the other half reported a peak around 8 which is a very high overall rating.

99. The diverging views of the respondents are perhaps best captured in some of their statements (see Table 7 below). The Evaluation Team has roughly ordered these according to their support for the project. These statements are mostly drawn from people who are familiar with the report (but are confidential replies).

100. While the survey results pick up a couple of respondents who consistently gave the project high marks, it does little to change the overall conclusions.

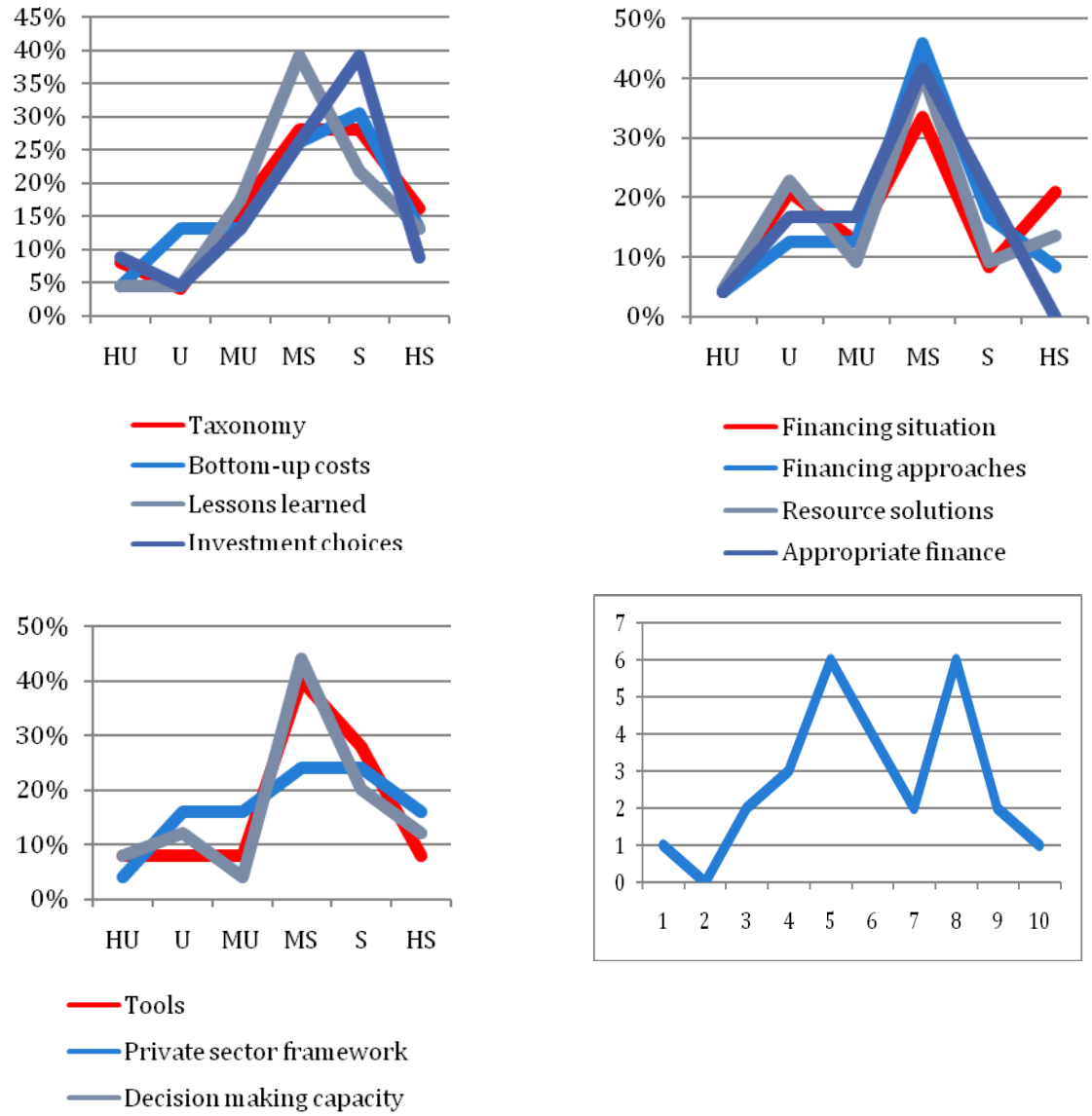

Figure 3. Qualitative scores for the three project components from the global survey and overall scoring

Table 7. Scores for pairs of statements from the global survey

	--	-	0	+	++

1a. Pioneering economics of adaptation in a global context	8%	24%	32%	24%	12%
1b. Widely available analytical fact base	4%	33%	21%	33%	8%
2a. Match with current financial mechanisms	4%	20%	36%	40%	0%
2b. Private sector interest	9%	13%	35%	39%	4%
3a. Decisions require CBA	0%	22%	19%	44%	15%
3b. Multiple lines of evidence	0%	0%	27%	54%	19%

Scores for each statement are from strongly disagree (--) to neutral (0) and strongly agree (++).

The global survey indicates that the ECA project has not had an enduring global presence in the community of expert on climate adaptation. The field has moved on to adopt a range of methods while few decision makers use cost-benefit analysis to make judgments about the urgent priority

Table 8. Selected quotes from respondents in the global survey

Critical	Balanced	Positive
I didn't find anything interesting or new. Some of it was original and wrong.	Cost curves are a matter of taste. I am ok with this way of presenting information.	Very rich methodology.
The main issues are (a) treatment of uncertainty … and (b) presentation of raw data for research use by others.	It was reasonably advanced for its time, but the economics of adaptation has moved on since then.	The cost curves helped illustrate what sorts of measures could be taken to improve climate resilience of various sectors, and moreover helped show their relative costs. I have heard various decision makers make reference to the report in that context.
No in-depth assessment on the community application or lesson learned locally.	It's a framework, a methodology to develop a fact base. It's not a climate strategy yet, hence … satisfactory.	Open access to the fact base/results, and very detailed in lecture course [remainder deleted to preserve confidentiality]
Data is not available.	My own impression is that perhaps the case studies provided the strongest evidence on	Many references and coverage in numerous conferences, incl. COP15, COP16, COP17 side

	which the rest of the report was based.	events.
The data base provides excellent evidence of the poor quality of this report.	Not all impacts are measured economically.	Reference in CCRIF (Caribbean Cat Risk Insurance facility).
The tools outlined in the report are fairly rudimentary -- they do not represent much of an advance in terms of thinking about vulnerability or vulnerability assessment. The main constraint is that the underlying data and models are de facto inaccessible, so of limited use.	I would take the data in the report to be more illustrative of what is possible and what cost ranges might be, rather than a rigorous accounting of costs.	
The underlying data is inaccessible, untransparent, and thus not useful to anyone seeking to use it as a starting point for adaptation planning.	Economic appraisal is much talked about, but practical examples are few.	
This has none of the academic or political weight that the Stern Report had behind it. The quality of the Stern staff and their familiarity with research on climate change impacts and adaptation far exceeds that of this document.	Other than very high level suggestions of adaptation financing sources and approaches, I don't think this report made much contribution to improving financing models from public and private sources.	
I have not seen reference made to the report in terms of lessons learned from practice, or as a justification for a particular adaptation decision or approach.	It's not so much a lack of robust estimates … positioning ECA as a fact base (and NOT a strategy) does indeed allow decision makers to take other dimensions into account (e.g. cultural preferences).	
A private client would not have accepted this report.	In my view, the risk assessment of the problem, the delineation of the damage functions, and linking them up with the costs of adaptation measures is very useful. However, I haven't seen it get much attention.	
… there are several adaptation strategies that have started	I am not sure that the approach to economic	

without a full understanding of the costs and benefits. Projects might reach there at some point but it does not seem to be a main driver. A need for adaptation rather than its costs is what has trigger many projects.	appraisal in ECA is all that new or particularly useful, but I would agree that having more attention focused on economic losses has been useful in getting attention to this issue.	
Was ok but not a lasting impact.	It's contribution was exaggerated by the team, but many critics were also too harsh. It is a valuable approach but not the adaptation silver bullet.	

6 Methodological Review

6.1 The 'total climate risk' methodology

101. The ECA report contains an appendix on the methodology (about 15 pages) that seeks to explain the 'total climate risk' approach. The figure below is presented as the organizing framework for the analysis.

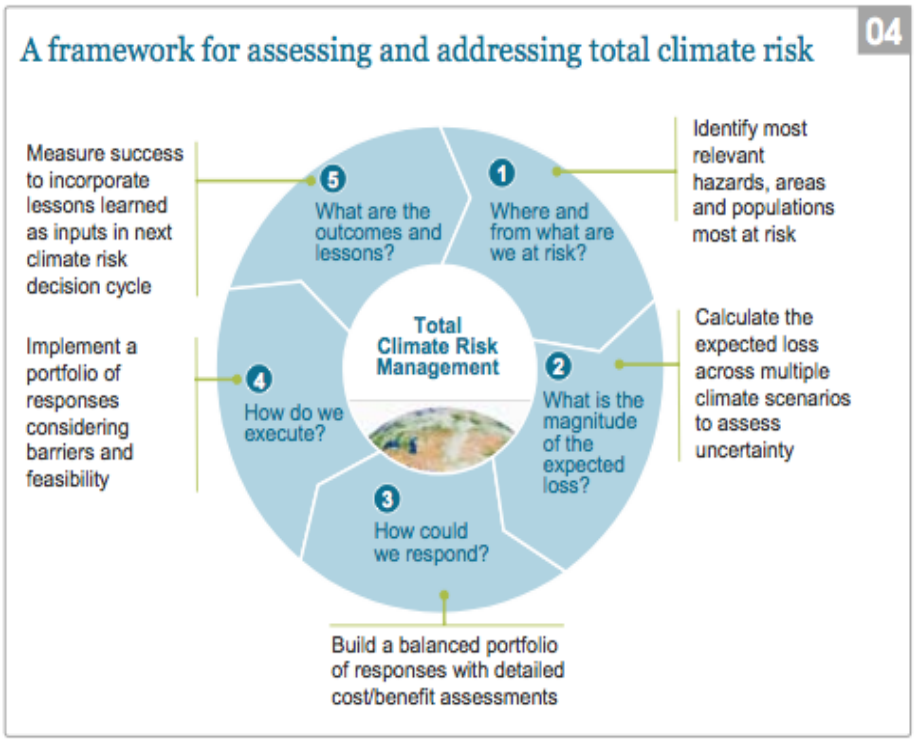

Figure 4. ECA methodology. Source: ECAWG (2010), p. 28.

102. While the appendix provides quite a rich set of material, it does not include any real details and no additional material on the test cases. The appendix begins with the headline: *"The Economics of Climate Adaptation Working Group developed a detailed methodology for assessing the total climate risk in a target area (a country, region, or city), and to evaluate and prioritize the measures available to improve that area's climate resilience."* (p. 122). Given that most methodological guides run to 100s of pages (as in the ProVia effort in UNEP), it is already clear that the appendix is an inadequate documentation of the 'detailed methodology'.

103. The preamble to the methodology notes four 'overarching objectives for the methodology' (p.122):

- Create holistic analyses linking climate hazards to adaptation measures
- Perform consistent comparison of adaptation
- Apply the methodology to both the developed and the developing world
- Weave these components into a clear and relevant tool for decision-makers

104. And then sets out 'guiding principles that are linked to the tangible outputs of the analyses' (p.122):

- Assess overall climate risk
- Be transparent
- Build modular tools
- Focus across sectors

105. The lack of documentation and proprietary nature of the global and country data sets means that the ECA principles would be marked as Unsatisfactory for the principle of transparency. The aspiration of modular tools is largely irrelevant in that the tools are not accessible to researchers or decision makers (and hence also Unsatisfactory). Weaving components into good stories (the fourth objective) without any prospect for external validation is problematic at best.

106. The analysis of the methodology to assess overall climate risk and the bottom-up risk assessment across sectors is covered in some detail below.

107. An important assumption is clearly stated in the appendix to the ECA main report: "In each of the test cases profiled in this report, a 12-16-week on-site effort was undertaken to apply the analytical steps of the methodology. Although a full application of the methodology in a location may take somewhat longer, it is intended to generate robust information on climate risk and adaptation measures within a short space of time." (p. 125). Work across the world has highlighted that developing robust national strategies and local action plans takes time—NAPAs took five years from design to implementation and few assessments are completed within one year. While a test of a short-term consultancy might be interesting, it is unlikely to lead to robust conclusions. This is a design feature of the project and thus difficult to judge other than to note that the implied theory of change is unlikely to be supported by evidence in national projects.

108. The appendix focuses on the first three of five questions in the methodology:

1. Where and from what are we at risk?
2. What is the magnitude of expected loss?
3. How could we respond?
4. How do we execute?
5. What are the outcomes and lessons?

109. In fact, the 4th and 5th questions are key — the nature of the outcomes should drive the design of the methodology and its implementation. A robust decision making (RDM) paradigm would have inverted this sequence to useful effect.

110. Nevertheless, the methodology for the first three questions has serious shortcomings.

111. National climate change studies that assess the economics of adaptation include the mini-Stern reviews (the Regional Economics of Climate Change studies, RECCs), the World Bank Economics of Adaptation to Climate Change[5], UNDP's Assessment of Investment and Financial Flows to Address Climate Change, I&FF [6], UNFCCC National Economic, Environment and Development Study, NEEDS[7], as well as the earlier immediate priorities captured by the National Adaptation Programmes of Action (NAPAs, Osman and Downing, 2007). This literature is almost entirely based on a classic scenario assessment, taking climate

[5] World Bank. 2010. Economics of Adaptation to Climate Change. Synthesis Report available at: http://climatechange.worldbank.org/sites/default/files/documents/EACCSynthesisReport.pdf.

[6] Investment and Financial Flows, as part of UNDP's global Capacity Development for Policy Makers to Address Climate Change project.

[7] The National Economic, Environment and Development Study (NEEDS) for Climate Change Project. More information is available at: http://unfccc.int/cooperation_and_support/financial_mechanism/items/5630.php.

model outputs, and running sector models or analysis to assess the potential impacts of climate change in the future (Watkiss et al. 2009, Pye et al., 2010). Analysts then consider a range of technical adaptation options that could reduce these impacts, in some cases assessing the costs and benefits. This is often referred to as a 'predict-and-provide' approach (Downing, 2012). In contrast, the professional adaptation community has moved to a framing around institutional processes, barriers, a continuum of action and adaptive management (e.g., Klein and Persson, 2008).[8]

112. The methodology as described in the final report is designed to implement the original objectives. That is, to build a fact base that supports cost-benefit analysis that is used by real decision makers. The methodology that would have been appropriate for the revised scope of work—with a greater focus on debate around methods rather than actual decision support—would have been quite different. Comparative test cases would evaluate the strengths and weaknesses of different approaches against an agreed set of criteria for decision making, for instance.

6.2 Where and from what are we at-risk?

113. The methodology has four steps: collect all available data on climate; leverage the perspectives of the scientific community to select the hazard(s) with the biggest potential impact; document historical data on frequency and severity of specific events; and identify areas most at risk from chosen hazards. This approach is essentially based on existing climate hazards with a partial understanding of vulnerability (mostly based on populations at risk).

114. This first question is essentially to frame the study. In that sense, it immediately places the ECA as a hazard assessment. The two tables below (Tables 9 and 10) capture the different views. The essential design question is how to represent in the analytical methods the integration of socio-economic conditions that define exposure and the progression of climate from current conditions to long-term changes and risks. For simplicity, the chart shows the timeline from current vulnerability (the baseline of the present) to expectations usually based on trends over the next 5 to 10 years, and the longer term prospects related to development visions. The second table shows four conceptual approaches for linking these two domains:

- What-if scenarios that use different time lines (Case IV) should be avoided other than as very rudimentary scoping exercises. For instance, plotting a scenario of increased drought magnitude and frequency derived from climate scenarios for the 2050s onto today's population at-risk would be considered methodological malpractice. Economic assessments of this sort are unreliable although they are often viewed as establishing the sensitivity of various exposure units.
- The best design would be to consider the close coupling of climate and socio-economic conditions as they evolve over time (I); an aspiration rarely achieved in vulnerability assessments. For instance, a devastating drought next year might so debilitate a population and economy that it does not recover and small changes in climate over the coming decade become major threats. The history of the collapse of major irrigation schemes is a good example. Economic analysis of coupled systems would provide a full profile of loss scenarios as well as insight into macro-economic implications.

[8] Klein, R.J.T. and Persson, A. 2008. Mainstreaming adaptation to climate change: Issues and priorities. European Climate Platform. Brussels: Centre for European Policy Studies (CEPS) and Stockholm: Stockholm Environment Institute.

- In between these two concepts are acceptable practices of risk assessment of current disasters (III) and considering climate and socio-economic vulnerability as entirely separate domains over time (II). Economic analyses of expected losses from the current risks are common (Case III). The marginal cost of climate impacts given different assumptions regarding future exposure and economic behaviour are desirable (using Case II).

115. The TCR methodology is inconsistent in some of the test cases. It is primarily a hazards approach (Case III below), with its focus almost exclusively on climatic hazards. In some cases, it explores future socio-economic exposure as a reference scenario independent of climate impacts (Case II). However, it often overlays risks of future hazards onto current vulnerability (Case IV), which is not acceptable practice in the field.

116. The TCR 'methodology' short-changes the framing phase that more typically includes an assessment of the actors and decision environments. By limiting the analysis to climatic hazards, the ECA study changes the framing of climate adaptation economics from broad resource management to disaster protection. For a study that sought to inform decision making, this is an obvious shortcoming.

117. The choice of hazard as the focus of the test cases appears to be rather ad hoc. There is some indication that costly hazards were chosen, e.g., drought in Maharashtra, while it is not clear whether this was in preference to other hazards (e.g., cyclones in India). The test cases are thus ad hoc examples of the methodology but not comprehensive screening of risk at the scale of the test cases.

118. Climate change is a dynamic process that leads to changes in risks (and costs) over time. There are major differences between the costs of current and emerging trends in climate variability, as compared to the costs of long-term changes from future (major) climate change over the next century (i.e. to 2050 and beyond). Assessing these different time periods requires different methods and approaches—each relies on different data and climate inputs, expertise and analytical tools. This sense of the evolution of risk is missing with only limited use of non-climate scenarios and policy drivers in framing the test cases.

119. For these reasons, the label, Total Climate Risk, is misleading.

Table 9. Climate adaptation as the intersection of climate and vulnerability over time

	Progression in climate	
	+ Trends in climate conditions and hazards	+ Climate change scenarios attributed to additional greenhouse gas emissions
Current Vulnerability		
	+ Socio-economic trends and development plans and goals	+ Development visions and pathways
Progression in vulnerability		
Recent past and current status (Baseline)	Planning horizon of next 5 to 10 years	Medium term horizon of 2030 to 2050

Table 10. Construction of climate-impacts over time

I. Interactive pathways	Pathways of the evolution of climate and socio-economic vulnerability interact over time as a coupled socio-ecological system.
II. Reference scenarios	Separate reference scenarios of socio-economic development (and exposure) and climate (resources and hazards) are developed and compared at distinct time periods (e.g., 2030s).
III. Hazard overlays	Current vulnerability (exposure) is the baseline for an overlay of current hazards in a disaster risk assessment.
IV. 'What if' scenarios	Current vulnerability (e.g., 2010 base year) is considered the baseline with an overlay of scenarios of future climate change (e.g., 2050s).

Green: Assessments should ASPIRE to this conception

Yellow: ACCEPTABLE methodologies with explicit representation of time

Pink: AVOID the confusion of time scales

6.3 What is the magnitude of expected loss?

120. The ECA methodology entails:

- Hazard assessment: develop climate change-driven scenarios for frequency and severity of the selected hazard
    - Develop plausible future climate scenarios
    - Choose timeframe of climate data relevant to hazard
    - Model drivers of hazards
    - Link climate change scenarios and hazard models to quantify the frequency and severity of the hazard
- Distribution of asset value: estimate size and location of future "assets" of economic and human value
    - Define asset types
    - Determine value and distribution of assets
- Vulnerability assessment: create vulnerability curves relating value at risk to events of different severities

121. There is a wide range of climate change effects. In the simplest framing, climate change involves slow-onset trends (e.g. average temperature, seasonal rainfall) and changes in the frequency and intensity of extremes (e.g. in heavy precipitation and floods). As an example, loss of agricultural productivity from changes in daily variables is assessed using

different models and methods to the analysis of major flood impacts on agriculture from extreme events. The overarching assumption in the ECA of a single impact-value model driven by a limited number of variables belies the complexity of climate-impact processes, the multiple dimensions of consequences that are of concern to decision makers, and the relative balance between 'development' and 'additional' climate resilience.

122. The ECA study uses global climate models, sometimes working with downscaled data, and applies them to assess short-term extreme events in 2030, even applying these scenarios at the sub-national scale (e.g., the Tanzania case study). Climate model experts consider this as poor practice (see Figure 5 below):

- The climate signal is not robust (the signal to noise ratio) for these early time periods and thus the use of uncorrected model outputs for the short-term cannot be used as a predictive tool.
- The climate models do not provide robust signals for these types of extreme events, without much greater levels of analysis and even bias correction, thus outputs are not likely to reflect historical observations or future trends.

123. The use of the climate models in this way leads to misleading results and possibly misallocation of resources and **THE** choice of options. It is possible to address these short-term events, but it requires detailed scientific and meteorological input.

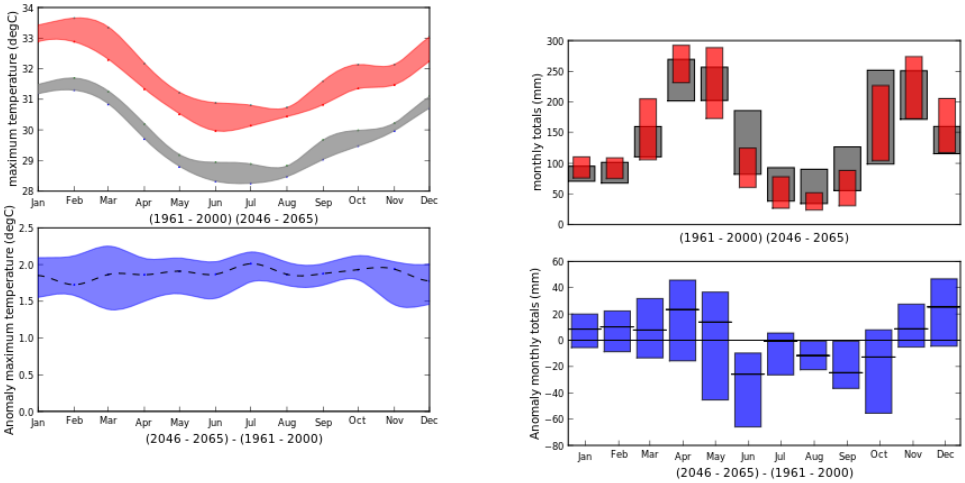

Figure 5. Climate model scenarios for Zanibar (Kisauni), Tanzania

Climate models can help inform adaptation costs by suggesting the range of future conditions that need to be considered. As an example of the uncertainty in such projections, downscaled scenarios for one station and the A2 reference scenario of greenhouse gas emissions all agree that there will be warmer conditions (maximum temperature, left) but considerable uncertainty over the course of the year regarding monthly rainfall (right). Basing an analysis on only a few climate model scenarios is not recommended (Source: Climate Systems Analysis Group, University of Cape Town, www.csag.uct.ac.za, accessed April 2013).

124. The ECA does not develop a sound categorization of cost types. At the most basic level, impacts include market and non-market sectors, direct and indirect effects, and wider economy (and macro-economic) costs. The type of method used for capturing these cost elements is different. An econometric (Ricardian) analysis of agriculture is not transferable to non-market sectors, and an Input-Output or CGE framework is needed to capture indirect or macroeconomic costs. The ECA methodology does not help sort out these issues—to some extent the 'numbers' look rather arbitrary with little documentation to validate the assumptions.

125. The main outputs of the ECA methodology are single results, usually presented as a single increase in risk, or a single adaptation cost curve. This provides a misleading picture of uncertainty, which for climate change is one of the critical issues for policy making.

126. The costs of climate change range very significantly according to the scenario and the models applied—a consistent finding over the past decade of climate impacts research. The identification and economic analysis of climate adaptation options cannot be focused solely on maximizing economic efficiency with respect to the central projections of future climate: instead it is far more important that they are robust and resilient to future changes. This requires a different set of analytical tools that take uncertainty into account. These approaches and tools rarely assume that economic optimization (e.g., cost-benefit curves) is the key requirement for decision making at this stage.

127. In the ECA approach, the analysis of impacts is limited, largely based on the use of historical analogues: this is not the usual approach for considering future climate impacts, although it is common for natural hazard risk assessments (Case III in the table above). There is a strong literature in every sector, developed over several decades, that seeks to capture climate change impacts. Most of this work is not cited in the ECA study even where it is well known in the test case areas. There is little sense of quality assurance of the literature and findings in the test cases, other than to assert that the ECA team consulted with known experts.

128. The ECA methodology assesses all benefits in monetary terms to allow the presentation of options on an adaptation cost curve. This leads to a number of problems. First, in most cases there is simply little information on the marginal economic benefits that a measure will have, i.e. even the effectiveness of a measure is not well understood. Second, there are non-monetary benefits involved (whether because of linkages with non-market sectors or the informal economy). The omission of livelihoods, gender, equity, and ecosystems, just because they are difficult to quantify, is a glaring gap in the three test cases the evaluation team reviewed (India, Samoa and Tanzania).

129. Perhaps even more importantly, the use of simple unit costs that are transferred between locations does not reflect the real location and context specificity of costs. Generic adaptation unit costs in a cost database cannot (and should not) be simply assumed to apply throughout the country. All adaptation costs are location and policy specific. So-called transaction costs are likely to be under-estimated in assuming there is a generic cost that can be applied across the sector.

130. The ECA methodology reduces impacts to a Net Present Value that ignores the complexity of how climate vulnerability and impacts might evolve in the future including potential thresholds of irreversible impacts. The final report accepts that CBA is only one contribution to decision making (although this is not clear in the design of the project). Other formal economic methods have been suggested, including least cost and cost effectiveness, Multi-Criteria Assessment, Bayesian nets, Robust Decision Making and criteria such as no-regrets. There is a considerable literature now on each of these methods and comparative evaluations of test cases at the time of the ECA project would have been helpful.

6.4 How could we respond?

131. The ECA steps here are:

- Identify potential adaptation measures
- Determine overall feasibility and applicability of potential measures
- Calculate societal costs
    - Determine the discount rate, based on local government infrastructure decision discount rates where possible, or on the expected rate of return for the "next best" investment
    - Define scope of the measure by determining the maximum potential for implementing the measure in the local context
    - Calculate costs of each measure, including capital expenditures, operating expenditures, and operating expenditure savings
- Calculate expected loss averted for each measure
    - Hazard
    - Assets at risk
    - Vulnerability
- Create the cost-benefit curve for all measures.

132. The phrasing of this question is important. CBA leads to a strong presumption that the top action is how we **should** respond, that is it is the optimal response. The choice of methodology in the ECA thus is based on a presumption that there is a firm ranking leading to the 'best' options. With the further assumption that this ranking should be based on econometric analysis (e.g. the unit costs and benefits of each option). In contrast, NAPAs promoted Multi-Criteria Analysis (MCA) which opens up the assessment to many more economic attributes. Most funds simply ask that the option be cost-effective (e.g., value for money) as part of an economic business case. National strategies generally recommend a portfolio of options rather than a formal search for the single best options.

133. Reflecting the change in scope, there is a sense that the ECAWG moved beyond a strict adherence to these assumptions, although this was not at all clear in the project documentation, theory of change or specific objectives. For instance, the ECA report notes:

134. "Additionally, while we present our analytical findings as single numbers in this report for the sake of simplicity, these numbers must of necessity be considered as indicative, as they are built off several assumptions made in developing the climate change scenarios and calculating losses." (p. 40)

135. "The cost-benefit analysis described above provides a fact base for decision-makers as they assemble a portfolio of prioritized measures to address their location's climate risk. This prioritization exercise will by necessity be a complex one requiring considerable judgment from decision-makers, and taking into account a range of considerations, of which the cost and impact of the measures are only a starting point. The relative ease of implementation of the measures in the portfolio will be a further consideration. And decision-makers will need to ensure that portfolio addresses the location's full range of climate risk – not only moderate change (for example, in rainfall reduction or wind speed increase) but also variability and extreme events.

136. Importantly, the prioritization of adaptation measures will also be driven by local policy goals and constraints whose considerations are quite different from minimizing financial costs and maximizing economic benefits. For example, a decision-maker may set out to minimize the loss of lives, or to protect the economy against damage caused by very

extreme events (such as one in 10,000-year flood) – regardless of the cost- efficiency of the measures needed to achieve these outcomes. Such policy objectives should, at a minimum, be taken into account qualitatively during the decision-making process. Alternatively, they can be incorporated into the cost-benefit analysis by selecting the most efficient measures which realize the set objectives: as a result, cost-inefficient measures could also be included in the prioritized portfolio of climate-resilience measures.

137. Finally, the priorization process will, in addition to adaptation measures, need to consider measures that minimize the on-going damage after a climate event, such as national disaster funds and emergency preparedness programs." (p. 50)

138. Clearly these observations highlight that CBA is only a partial tool in decision making. A single method is not sufficient to cover all of the costs and benefits of adaptation, and especially across different time periods, sectors, hazards and decision contexts.

139. The methodology of a single method in a single framework has further problems.

140. Adaptation is treated as a static decision, rather than a dynamic process. Adaptation is not a single decision to a single risk in a single time period, as presented in the TCR method. Instead, it is a complex dynamic over time that has to respond to changing risks, allowing for inter-dependencies. It is also grounded in the institutional and governance systems, existing policy and comes on top of existing multi-hazard (non-climatic) vulnerability. When this is combined with a lack of consideration of uncertainty, the result is to present a huge oversimplification of the requirements to support real decision making processes. For example, in agriculture the driver of change in commercial cropping is the value chain from grower to consumer, rather than the more limited effect of long-run climate change on yields. Or indeed, the socio-cultural drivers of governance in Mali rather than the economic construct of national production.

141. As a result, the climate adaptation literature in the last few years, especially that grounded in practical implementation, has changed to the concept of iterative adaptive management, looking at pathways of options over time in a cycle of review and evaluation. This also links multiple time frames together, recognizing that while a focus on no regrets is useful now, there are also many areas where early decision making for adaptation to address long-term issues is needed. Examples include with infrastructure (because of the asset lifetime), decisions that have a long lead time, and major events or irreversible effects (that may require long-term shifts).

142. The approach applies a micro-economic framing: it does not consider the macro-economics of growth. The approach applies bottom up technical unit costs to identify promising options. However, this is not a strategy for economic growth, it is merely a micro-economic appraisal method. To really look at green growth, climate change and adaptation needs to be seen through a complementary macro-economic lens. This needs to examine the macro-economic threats and opportunities, and think how a climate resilience strategy can actually add up to enhanced growth opportunities.

6.5 Conclusion

143. The TCR method provides a valuable starting point for the conceptual thinking around short-term priorities for climate resilience. It provides a useful focus on current choices that aligns with the identification of no regret options. The adaptation benefit cost curves appear to be useful in communicating key economic concepts. However, these should only be seen as illustrative and do not lead to clear priorities at any scale. A critical review of the EAC methodology reveals serious shortcomings and an overall rating of Moderately Unsatisfactory at best.

Table 11. Evaluation of 'total climate risk' methodology used in the ECA

Methodological question	Evaluation	Rating
Where and from what are we at-risk?	Relating the risk framework to decision environments is missing, leading to a very narrow analytical framework for the study based solely on climatic hazards and not other drivers of vulnerability or resource management.	Moderately Unsatisfactory
What is the magnitude of expected loss?	The ECA doesn't capture uncertainty, groups all costs and benefits in one category and compares them as net present values. Much of this is inherent in CBA, but its application to climate adaptation is problematic.	Unsatisfactory
How could we respond?	Given the narrow framing, the steps here are logical and their implementation is acceptable with the proviso of the failure to tackle uncertainty and reliance on a single metric. However, the stated question is not answered by an idealized cost curve with no transaction costs, institutional barriers, sequencing of options over time and other issues of decision making.	Unsatisfactory

7 Conclusions

7.1 Summary of evaluation and overall impact

144. This section summarises the findings presented above.

145. The project was carried out at a time when approaches to adaptation were still being formulated and tested. These 'shifting sands' are recognised in the project's reporting as diverging views among stakeholders. However, the presumption that a 'standard model' would be appropriate in the many national contexts of adaptation decision making was premature. Thus, the design of the project led to a number of shortcomings that ultimately limit the impact of the results.

146. The project team recognised the changed requirements for methodologies and decision support and adapted the project as it reached its final stage. This change in focus is partly reflected in the final report.

7.1.1 Impact based on original design

147. The evaluation of the original scope and objectives of the ECA project is based on a formal Theory of Change. As noted above, the 'null hypothesis' can be stated as: *Adequate information for national planning has been realized in most countries due to the growing awareness of climate adaptation and harnessing of existing information. The ECA outputs of a taxonomy of measures, an inventory of costs and benefits (the fact bases) and analysis of finance were either not available to national decision makers, not required in developing national strategies, or limited in their relevance given the wealth of other information available.*

148. The above statement remains—that is, there is little evidence that the ECA project outputs substantially affected national decision making on climate change adaptation.

149. The evaluation above explores the design (Section 2) and methodological issues (Section 6) in some detail, as these set the context for the subsequent analyses. A global survey of adaptation experts (Section 5) and investigations of three of the test cases (Section 4) confirm the overall evaluation using the UNEP/GEF criteria for a terminal evaluation.

150. The UNEP evaluation framework, using the theory of change, is quite strict and results in a relatively low score to the project across all of the criteria. The ECA project was essentially a study to develop and test a methodology (or a framework) rather than generate concrete impacts and country-led adaptation projects. As such, some would argue that a higher rating is warranted.

151. The implementation of the project was also contentious, with a commercial consultancy retaining most of the supporting material that might have led to a significant impact among methodological experts. The rapid test cases, largely divorced from processes in each country, did not lead to enduring impacts at that scale (and apparently were not expected to, at least according to the final report).

152. The overall evaluation can be summarised as:

- Design limitations and performance that is judged as Moderately Unsatisfactory across the several criteria.
- A methodology that has serious flaws, leading to a rating of Moderately Unsatisfactory.

- Very little impact in the three test cases: with ratings of Moderately Unsatisfactory, but note the higher ratings for Samoa.

- Very limited impact in the methodological literature on the economics of adaptation: no rating given but would not be considered a satisfactory outcome of a major study.

- Somewhat diverging views from the global survey, with peaks around Moderately Satisfactory for the three major components. However, the detailed evaluation using the GEF grid and supporting quotes from key experts suggests each of the components would be rated as Moderately Unsatisfactory.

- Detailed ratings across the four GEF areas results in an overall score of Moderately Unsatisfactory.

153. The contracted outcomes were not wholly achieved. Against the original objectives, a score of Moderately Unsatisfactory is warranted.

7.1.2 Impact based on revised project scope

154. While the revised scope was not fully documented, the null hypothesis suggested for the original design would be considerably changed. A revised statement might be: *The final report of the ECA project brought together a rich set of illustrative examples of how the costs and benefits of climate adaptation might be quantified and how a cost-benefit analysis might be used in making decisions. The report stimulated a vigorous debate about the use of CBA in particular and economic decision making on climate change adaptation in general.*

155. The project was very visible for a year or so as a pilot test in developing methods for the economic evaluation of climate change adaptation. However, the report has not had a long shelf life, with very few citations at present, either in peer-reviewed academic literature or in country-driven strategies. The 'McKinsey' methodology has not been widely adopted (although there are some proponents), although the notion of using economic tools is growing.

156. Economics matters and the project was one of the first major efforts to establish a coherent view of costs and benefits of adaptation actions. Thus, the project had a considerable impact in raising methodological issues, which are difficult and have not been solved some years later. The politics of adaptation planning shifted at the same time, from the primary domain of environmental management to a wider integration in economic planning. The project is likely to have had some effect in this shift, although it was not the major objective and is impossible to verify. To a modest extent, the project's legacy continues in further assessments of the economics of adaptation, as seen in particular in the work of the World Bank.

157. There are several factors that affected the potential impact of the project. The first is the disconnect between national planning and the project's methodology. Most countries are at the stage of preparing national strategies and implementing the most urgent priorities. While an economic appraisal is helpful, a full cost-benefit analysis adds little value to setting broad policy goals and sectoral strategies in place. Few national strategies are based on such economic appraisal at this level. Indeed, the push toward low carbon futures (e.g., scenarios of a green economy) are largely based on strategic concerns and not full cost-benefit analysis.

158. Second, most adaptation projects are driven by national priorities, and most of the test cases are far too rudimentary to be particularly helpful at this level. One respondent was

emphatic, that their organisation would never "build projects based on a study. This is a wrong assumption, and would be against our principle of country drivenness". Thus, the notion that a global study would improve national decision making was based on misleading assumptions.

159. Third, the commercial model of the principal consultants, to retain proprietary rights to the country-specific data and to some extent the details of the methodology, limits the longer term impact of the project.[9] The direct impact on actual project formulation and national policies in the test cases examined is quite small. Several respondents noted this as a major constraint. Even where the graphs are used again (as in the Caribbean), they are not subject to the level of analysis that would be required for local action. At best, the 'fact bases' can be considered illustrative but cannot be verified.

160. Fourth, the methodology is insufficiently documented in its detail and remains largely a black box. Some of the methods have been criticized as inadequate or indeed erroneous in their assumptions. While a methodological annex was added to the final report, it is a summary of what was done and not a detailed guide to the methodological challenges and choices that an analyst would have to work through. The case for CBA is not made in light of other approaches, whether similarly formal appraisals such as multi-criteria or cost-effective assessments, or more participatory models such as the Analytical Hierarchical Process or even simulation games designed to create capacity as well as leadership.

161. UNEP (and other agencies) continue to make choices about adaptation methodologies, strategies and projects. So far, none of the major adaptation funds require a formal analysis of the sort proposed in the ECA project. Economic appraisal and the 'business case' are required in one form or another, but not as a fully quantitative model of rational choice among the many options that are available. This simple fact underscores the limitation of the project. None of the global guidance on adaptation (and there are dozens of checklists, protocols and guidebooks) have adopted the adaptation cost curves presented in the final report. Even UNEP's own guidance (in draft at the time of this evaluation) does not refer to the ECA methodology as a milestone or recommendation for implementation.

162. Thus, the revised 'null hypothesis' is partly supported to the extent that the project stimulated a debate. However, the project was not designed to support a comparative analysis of methods nor to bring together the various constituencies who would use economic evaluations in decision making (other than the ECAWG). Given the project had a global presence for a short time, an overall score of Moderately Satisfactory could be justified.

7.2 Lessons learned

163. The ECA project was completed in 2010, nearly two years before the Terminal Evaluation was commissioned. While this lag time has enabled the Evaluation Team to get a clear sense of the project's enduring impact, recommendations are not relevant to the project.

164. The ECA project does not appear to have generated a substantial literature related to lessons learned. To some extent, experts involved in one way or another seem cautious in overtly criticising the project—after all this is a small community. In contrast, for example, there are on-going forums related to information portals and the application of climate data to decision making.

[9] The Evaluation Office is of the view that GEF funds should be used to generate international public goods. (that lead to global environmental benefits) and that retaining proprietary rights from public funds inappropriate.

165. Thus, the Evaluation Team cannot draw upon reflective exercises that might inform future projects. From its own experience, the team highlights major lessons learned.

- Raising awareness of adaptation issues and options is still a real need, and requires involving stakeholders in many different ways. Evaluation of future risks set against current decision requirements is a central theme in adaptation planning.

- Economic appraisal encompasses a wide range of methods and no one approach fits all circumstances. The ECA pinned its outcomes to a single method, although the final report acknowledges that there are other approaches and tools that might be relevant. However, a multi-method ensemble was not part of the project design (others are using such methods though).

- Methodological development is a difficult challenge, particularly on climate adaptation. The outcome variables for adaptation are not as simple as for mitigation—McKinsey were widely seen as simply porting a tool that they had applied extensively in mitigation to adaptation.

- Methodological projects that develop practical toolkits should include guidance on how to match a tool (or approach, method) to the decision environment. This might take the form of a Theory of Change or be more of a heuristic based on good practice from case studies. UNEP have already embarked on extensive guidelines (the ProVia initiative) and are well placed to coordinate such an effort. However, there are many entry points to adaptation and no one stakeholder is 'in charge'.

- There is much repetition of data gathering and compiling useful information. The usual silos of information are difficult enough to overturn; retaining data sets produced from public funding as 'proprietary' is not helpful. Projects of this sort should have established clear guidelines before approval for access and use of data collected.

- Future projects on methodologies and guidance should mobilise a broad spectrum across the various communities of practice. A field-based capacity to learn from 'what works' should be a guiding principle. Often, the tendency is for an expert to simply apply an existing tool with very little feedback as to its suitability. As for the above, UNEP can play an innovative and coordinating role, but many stakeholders will need to adopt this recommendation.

166. UNEP does have a leading role in mobilising information, whether through the global reviews (GEO) or regional and thematic programmes (e.g. Regional Seas). UNEP should lead the UN agencies in providing enhanced data sets on climate adaptation, particularly with a multi-attribute evaluation of strategies and measures and how they score in different environments and institutional contexts.

7.3 More Specific Lessons

Specific Lessons are suggested for future projects/initiatives within UNEP, as the ECA project is now closed.

1. Convene a working group on the economic assessment of adaptation strategies and measures. As this field is rapidly developing, there is need for continued assessment of approaches and techniques. The working group should be quite broad including links to financial analysis and decision making. Real end users should be adequately represented. The working group would have relevance in supporting National Action Plans for instance. ProVIA might be a suitable mechanism for such an activity.
2. Canvass private sector business models and their use of economic tools. At a strategic level within a business, CBA does not appear to be the dominant tool. Rather, companies are concerned about market share, tolerable risk to production and operational costs.
3. Further develop approaches based on multiple attributes, such as multi-criteria assessment, robust decision making and multi-attribute profiles. Case studies across a range of sectors and environments should be compiled in global and regional data bases with open access using similar procedures as established for climate scenarios. Require all GEF/UNEP projects to record their data in this way, as is a condition of some public funding in other fields. It may be possible to do this retrospectively.

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ANNEXES TO THE TERMINAL EVALUATION

List of Annexes

9 Annex 1. Evaluation Approach Using the Theory of Change

- The evaluation approach is summarized in the main report. Some additional material is included here.

9.1 Results chains

- The Results Chains comprise:
    - Outputs and outcomes, differentiating between the project outputs (products) and outcomes as effects on a group of stakeholders or actors. Project outcomes are the direct intended results stemming from the outputs, and they may occur towards the end of the project or following project completion.
    - Assumptions and impact drivers that underpin the processes involved in the transformation of outcomes to impacts.
    - Intermediate states: the transitional conditions between the project's immediate outcomes and the intended impact. They are necessary conditions for the achievement of the intended impacts and there may be more than one intermediate state between the immediate project outcome and the eventual impact.
    - Impacts: the results anticipated by the project
- These components are shown in the table below (following conventional flow chart analyses). They are organized as a linear process, although all projects are less clearly organized in practice.

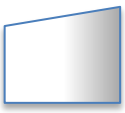
	Output	**Outcome**	**Assumptions**	**Intermediate states**	**Impacts**
Project components					
Aim/purpose					
Objectives					
Activities					
Outcomes					

Figure 6. Conceptual framework for the Theory of Change

9.2 ECA causal logic

- The outcomes identified in the project design are global and ambitious. Achieving them requires various assumptions and may progress through several intermediate stages. These are listed here, based where possible on the project documentation. However, this documentation is limited to the PIF, PIR and Final Report (which where largely prepared by McKinsey). Thus, this list includes an interpretation by the Evaluation Team as to key drivers of impacts: * *indicates these assumptions and intermediate states.*

- Note that the following figure of the TOC summarizes these assumptions and intermediate states in a simpler form. The intermediate states listed here include products that are not listed as the project's end outputs and hence are intermediate. For instance, the project outcome is improved ability to identify finance –to achieve that outcome a fact base on funding models was proposed although this is not itself a contractual output.

- Assumptions:

    - Decision-makers need a pragmatic and consistent set of tools to make informed choices about how to respond (PIF, p4)

    - Need to stimulate greater investment and appropriate participation from non-traditional sources of finance, including the private sector (PIF, p4)

    - [a fact base] will provide countries with a ready and reliable source of information to support development of adaptation measures (PIF, p9)

    - A baseline and additional needs assessment will identify the additionality of a proposed project (PIF, p9) [this appears to apply to the outcome of improved decisions although it might be interpreted as applying to the ECA project itself]

    - A global synthesis report is necessary and sufficient for improved national decision making*

    - A single project will have a discernable effect on the information available to national decision makers, including lessons learned from 'good practice', range of adaptation strategies and measures that might be adopted, and choice of methodologies, methods and tools to support decision making*

- Intermediate states:

    - A toolbox of approaches can help decision makers decide where to start (PIF, p4)

    - A fact base on the potential and economics of adaptation measures for a representative set of impacts (PIF, p4)

- A fact base on funding models (PIF, p4)
- A process to improve decision making in the selection and funding of adaptation strategies, including innovative ways to mobilize funding (PIF, p4)
- A set of resources that countries can use to achieve their own national priorities through fact-based planning (PIF, p8)
- A survey of targeted groups including national decision makers to refine the questions the project will seek to answer (PIF, p8)
- A cross-national fact base on the economics of adaptation and on 'good practice' in project design, implementation and financing (PIF, p9)
- National planners have a strategy in place that supports development of programmes and projects*
- National and local staff are available to plan adaptation strategies and measures*

- Interestingly, the project identified three **risks**. The measures for risk mitigation relied on consultation with various stakeholders and experts and an inter-agency steering committee, but not more formal methods for ensuring the project outputs were 'fit for purpose'. The risks identified were (PIF, p10):

  1. Lack of alignment between outputs and the needs of stakeholders and that the outputs will not be usable by decision-makers in GEF client countries. [Note, there is only one output from the project, a global report of some 150 pages—it is not clear from the PIF whether other 'end products' were expected.]
  2. Lack of sufficient data on adaptation experiences to derive robust conclusions. [The final report doesn't address the issue of data quality and robustness of the methodology.]
  3. Lack of integration with and relevance to GEF agencies. [There seems to have been rather limited effort made to produce end products that could be used by the agencies.]

- These components of a results-based analysis can be combined into a Theory of Change for the project evaluation (see figure below). This mapping of the project onto outputs and outcomes recognises intervening drivers of impacts:

  - The context of adaptation planning: Efforts to build capacity and programme early actions mushroomed from 2008 onwards. The ECA project was initiated as one of the major efforts globally (in 2007/8 when it was designed) but was quickly overtaken by research (projects in the EC on adaptation in this period were on the order of $20-50 million), programming actual efforts (the UNDP Africa Adaptation programme, launched in 2008 with nearly $100 million from Japan), and learning from community efforts (e.g., the annual Community-Based Adaptation workshops led by IIED and partners).

- Assumptions: These are grouped from the above list to focus on the role of information in national adaptation decision making. The project was not explicit as to the target user group. For example, there was no distinction drawn between national government officials and their expert advisors and programme managers who would translate the lessons learned in the study for application in particular circumstances.

- Intermediary states: These are the 'conditions of application' implied by the assumptions that would be necessary outcomes in order to achieve the expected overall outcome of the project. Some are reflected in outcomes from specific project components, however. The intermediary states are grouped as information and data; tools; and capacity.

- It is important to note the extreme diversity of 'adaptation' among and within countries. The project document recognises that it is difficult to anticipate all of the conditions under which improved information and tools would be useful. Nevertheless, the final report does not highlight such concerns or offer a means for interpreting the global conclusions other than the limited reference made to 'test cases' (all of which are deemed in the report to be positive outcome scenarios for the ECA approach).

- The Evaluation Team note that there are many ways to construct a Theory of Change. What looks like an assumption at one level is an intermediary state at another. The EAC project is quite complex with elements of methodology, global lessons learned and local test cases. With further resources, each level of the project should have its own TOC and evaluation. However, there is sufficient insight in the TOC presented here to proceed to the full evaluation. The TOC and lessons learned will be revisited based on the planned evaluation activities.

- The linkages from project outputs to outcomes in the ECA project can be quite complex. The figure highlights only a few of the critical linkages:

    - The project identified three Outcomes—one has been split between public and private decision making (Outcomes III and IV), as the project appears to have focused primarily on public decision making (or guidance to private decision makers was not documented). These outcomes naturally lead to the ultimate outcome (V) that brings the fact bases, tools and guidance to direct resources toward reducing vulnerability to climate change. Note that this outcome is still a 'procedural' result—resources through a decision process are mobilized—rather than presuming that the project itself would reduce vulnerability.

    - The Context of the project might be construed as part of the project's baseline—in the absence of the GEF project would the resources, trends and capacities identified in the context be significantly altered? In the figure above, the Context boxes would be background drivers of the Conditions—only the link connecting data and portals to access to adequate information at a national level is shown for simplicity.

    - The Conditions (C1 to C3) are all necessary to achieve the main Outcome of improved public decision making (III). Similarly, they would be part of achieving Outcome IV for the private sector (not shown as arrows above).

- Although the components, outputs and outcomes are clearly identified, the intervening assumptions are not and the conditions under which the project outcomes would be achieved are only tacitly acknowledged whereas the wealth of subsequent information and programmes would have the larger effect on the desired Outcomes in reality.

- For instance, it is possible to posit several impact pathways:

- Achieving Outcome I: Increased information

    - Condition 1: Information currently available is adequate to initiate national adaptation planning, selection of priority sectors, identification of national and sectoral strategies.

    - Context i. Global, regional and national data sets, portals and platforms have grown over the past five years (and continue to do so); little of this growth refers to the ECA project and none of the project data is available through these sources.

    - Assumptions:

        - Lack of information is what constrains national planning (a) and that the ECA project has a discernable influence on the provision of information against the context (i) and intermediary condition (C1).

    - Outputs from the ECA project are from Component 1, to develop several fact bases:

        - Taxonomy of measures (A)

- Costs of measures (B)

- So in a slightly more formal logic:

- {A & B} have influenced {C1} and therefore achieved {I} with the caveat that {C1} might have been achieved without {A & B} given {i} and {a}.

- And as a proposition (null hypothesis):

- Proposition 1. Achievement of adequate information for national planning (C1) has been achieved [in most countries] due to the growing awareness of climate adaptation and available information (i) and the ECA outputs of a taxonomy of measures and related costs were either not available to national decision makers, not required in developing national strategies or limited in their relevance given the wealth of other information available to national decision makers.

- Given the importance of the project and the conflicting views held by many, several methods were used:

    - **Review** of the main ECA report, PIF and PIR (see Data sources below).

    - **Questionnaires** were sent to a global list of stakeholders and experts, as well as for the country case studies. An online form was used that tracks responses.

    - **Country case studies.** The Evaluation Team includes experts in three of the project's test cases: India, Samoa and Tanzania. The experts will interview stakeholders and practitioners in these countries (see below for an initial list of contacts)

- **Assessment** of supplementary information including citations, published critiques of the methodology and commentary from the main stakeholder forum in Switzerland at the conclusion of the project.

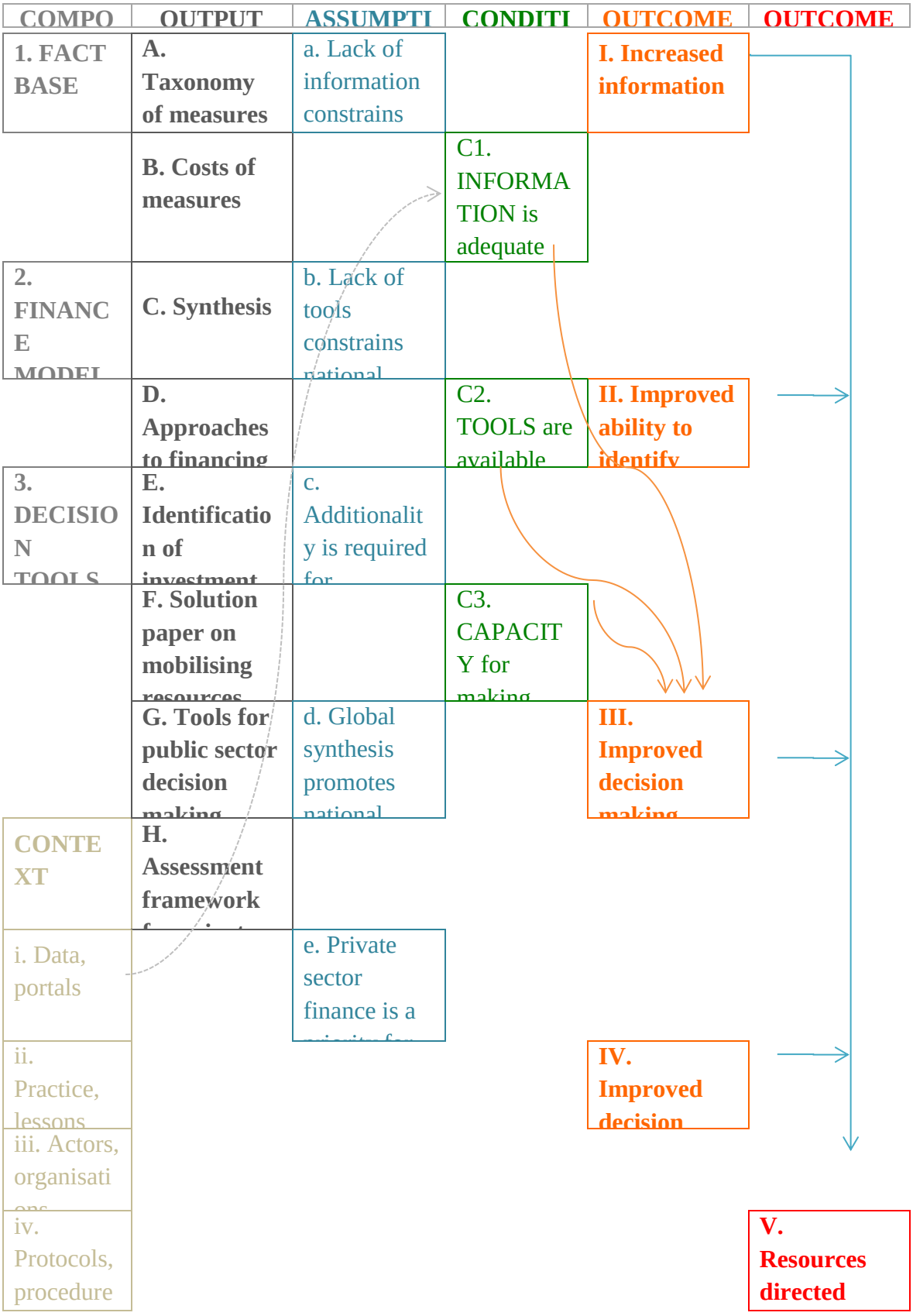


Figure 7. Impacts chains from project outputs to outcomes

9.3 Country case studies

- The EAC project undertook eight ‘local test cases’ (Main Report, p29) to test the applicability of the framework. Three were evaluated by the Evaluation Team. These test cases are described in the Main Report (p29) as:

    - Maharashtra, India: This case was based on Maharashtra, a large state in central India, and focused on drought risk and its impact on agriculture, a major economic sector accounting for 60 percent of the state’s employment. The results provided useful insights drought risk for India as a whole. (sic)

    - Samoa: as a small island developing state in the Pacific Ocean, Samoa is particularly vulnerable to sea level rise. This case focused on the risks of coastal flooding and salinization of groundwater posed by potential sea level rise.

    - Central region, Tanzania: a developing country in East Africa, Tanzania is vulnerable to drought on several fronts, including agriculture. This case, however, focused on two specific impacts in the country’s drought-prone central region: power production, which relies heavily on hydropower, and public health.

10 Annex 2. Evaluation Schedule

Milestones	**Dates**
Contract start	16 April 2012
Inception report (draft) to UNEP EO	20 May 2012
Zero draft evaluation report to EO	9 November 2012
Comments on zero draft by EO	22 November 2012
First draft evaluation report to EO (circulated for comment)	1 February 2013
Collated comments by EO to consultant	1 March 2013
Response to comment and final report to EO	10 April 2013
End contract	*30 April 2013*

11 Annex 3. People Interviewed and Interview Script for Evaluation of Test Cases

- The online survey was sent to over 448 people and the software tracks the people who opened the survey and filled in response. People were invited to include their names, but this was not a requirement. The list includes everyone mentioned in the ECA report section on acknowledgements (although some contact details were not possible to track down).

- In addition, the evaluation of each test case interviewed stakeholders and experts familiar with each case.

- The list of people interviewed and respondents to the survey is confidential and not part of the evaluation report.

- The interview scripts for the test cases were based on the following:

Thank you for taking the time to talk with me regarding the evaluation of the Economic Analysis of Adaptation Options project. I am part of the independent consultant team, lead by Tom Downing from the Global Climate Adaptation Partnership. Our report is for the UNEP Evaluation Office (Nairobi) and consultation with the UNEP GEF Coordination Office (Nairobi).

Your views will be treated as confidential and your name will not be released to UNEP or the GEF Secretariat.

Before we start, can I just confirm your title and role in the Government of Tanzania – particularly with respect to climate change adaptation?

I would like to ask you a small number of specific questions and then open up our conversation for your overall feedback.

Q1 Can you tell me about your role in the Economic Analysis of Adaptation Options project?

Q2 To what extent has the Economic Analysis of Adaptation Options project increased information for supporting investment choices in adaptation by public and private decision makers in Samoa?

Q3 How successful was the Economic Analysis of Adaptation Options project in improving the ability to identify appropriate financing approaches to meet investment needs?

Q4 Has the Economic Analysis of Adaptation Options project increase awareness and knowledge available to private and public decision makers for directing resources towards reducing vulnerability to climate change?

Q5 To what extent the Economic Analysis of Adaptation Options project engaged decision makers in Samoa and economic development community in general?

Q6 Do you have any overall feedback that you'd like to share?

Thank you for your time.

12 Annex 4. Terms of Reference for the Evaluation

The TORs for the Evaluation Team are summarized here (omitting only some background and confidential material), with slight reformatting to fit the style guide.

Project rationale

1. Global climate change is producing significant changes in the physical environment that could threaten human lives and livelihoods and increase the vulnerability of critical ecosystems. The Intergovernmental Panel on Climate Change (IPCC)'s Third Assessment Report identifies a broad range of observed changes in physical, biological and socioeconomic systems associated with climate change and suggests significant potential for further 'dangerous anthropogenic interference' with these systems. Analysts have also observed greater climate variability and likelihood of catastrophic weather events; one estimate suggests that the cost of weather-related disasters has increased from an annual average of $8.9 billion (1977-1986) to $45.1 billion (1997-2006). These are just a small sample of the IPCC findings, which imply potentially significant economic losses and substantially greater human and ecosystem vulnerability as a consequence of anthropogenic climate change.

2. While some key vulnerabilities can be addressed effectively – and cost effectively – by encouraging behavioral change, some areas may eventually require substantial investment to manage anticipated and unanticipated climate impacts (e.g. potential relocation of communities in regions of increasing floods).

3. Satisfactorily addressing key vulnerabilities through adaptation is likely to require adaptation measures, including capital investment, at a scale that substantially exceeds currently anticipated resources. Sources of funding to support climate change adaptation are typically small in scale. The resource gap for adaptation financing is particularly an issue for developing countries, many of which will be disproportionately affected by climate change but lack the resources to make required investments. Mobilization of further resources from the public and private sectors will be a critically important part of reducing vulnerability through adaptation.

4. To make best use of available resources and to make the case for more investment, decision-makers need a pragmatic and consistent set of tools to make informed choices about how to respond to climate change hazard risks. However, synthesized information on the costs, benefits and economics, good practice, financing options, and strategic trade-offs of various adaptation measures does not exist in easily accessible form. Research on the costs and effectiveness of key adaptation measures remains preliminary and lacks consistent frameworks for analysis. Nor is there yet a reliable synthesis of good practices from the limited but growing base of experience that now exists. While the National Adaptation Programmes of Action (NAPAs) have provided a useful framework for articulating major adaptation issues within countries, they were not designed to offer consistent approaches or supporting data to understand the cost effectiveness of interventions. The nature of adaptation itself makes this analysis challenging, since adaptation measures need to help communities build capacity to manage volatility and unpredictable outcomes in addition to fixed, anticipated effects. However, decision-makers still need to act, and the development of a toolbox of approaches can help them decide where to start. There are also outstanding questions about how to

stimulate greater investment and appropriate participation from non-traditional sources of finance, including the private sector. To manage all of these issues and make informed choices, decision-makers need tools to help them confront the complex tradeoffs and resource requirements associated with effective strategies for adaptation.

Project objectives and components

5. The project's main objective is to develop a decision making framework and detailed methodology for cost benefit valuation of adaptation measures, to support increased and innovative means of prioritizing and financing adaptation to climate change hazard risks. The project has three components, each with its own component objective as presented in table 2.

6. The components will be applied through case studies in eight climate-sensitive regions and cities across China, Guyana, India, Mali, Samoa, Tanzania, the UK and the US.

7. Supporting developing countries in the development of nationally-led adaptation strategies is a critical GEF objective. The components of the proposed study will directly advance this objective by providing fact-based resources and decision support tools to help countries articulate priorities and attract and deploy capital more efficiently and at greater scale.

8. The planned outputs under each component, as per the Logical Framework Matrix are presented in Annex 1 of the TORs. Component I of the project seeks to synthesize the factual and analytical information developed from the individual case studies and necessary to support decisions in public and private spending, at the national / regional level, towards activities that reduce vulnerability to climate change. A bottom-up assessment of adaptation costs will be determined through the case studies performed as part of this project. Engagement with national / regional decision-makers, as well as GEF focal points, within the case study areas, will ensure that national economic development goals are taken into account when assessing adaptation measures.

9. Components II seeks to learn from and modify existing models to fit adaptation context. By providing a practical framework for adaptation finance, the project will help donors and capital markets, better understand how investments in adaptation align with their own strategic objectives. The project will include participation from private sector players, both at the sponsor and stakeholder levels. Global private sector players such as Swiss Re will be actively involved in developing project outputs and the project will seek to get input from various local private sector players for each of the case studies to better understand the local context for investment types, financing approaches, and resource mobilization. Furthermore, participation of public, private, and social sector players will help elevate adaptation to the same level of attention and effort as the more popular mitigation of climate change.

10. Component III will aim to improve capacity for decision making by private and public stakeholders to direct resources towards the goal of reducing vulnerability to climate change through sound, sustainable and effective adaptation.

Executing arrangements

11. UNEP was the implementing agency for this project with the Division for GEF Coordination (DGEF) overseeing project implementation. McKinsey and Company was the executing agency and acted as facilitator across project partners. The methodology development was to be led by McKinsey and Company while dissemination and replication of the outputs was to be encouraged by UNEP's DEPI. However they withdrew their interest in the project, and Mckinsey became the sole executing agency.

12. Up to six country teams were to be formulated for the case studies, comprised of government ministries, the private sector, climate change expertise and nongovernmental organizations.

13. A working group was created to focus on developing a globally applicable framework for country decision makers to assess climate hazard risk and estimate cost of adaptation measures, while providing specific country stakeholders the means to define and ask for specific funding of specific measures. A consultative group of experts was also to be organized to provide expert advice and review to ensure quality and applicability of the project outputs.

14. A Steering Committee was to provide direction over the course of the project and was to consist of senior representatives of the core funding and implementation partners, GEF, DGEF, Swiss Re, and McKinsey. The Steering Committee met to review work of the working team at appropriate intervals to be decided at the first meeting.

Project cost and financing

15. Table 3 presents a summary of expected financing sources for the project as presented in the Project Document. The project is being funded under the GEF managed Special Climate Change Fund with the implementation support of UNEP. The GEF provides US$ 1,000,000 of external financing to the project. This puts the project in the Medium-Size category. The project is expected to mobilize another US$ 3,500,000 million in co-financing, mostly from the private sector. Table 3 also summarizes expected costs per component and financing sources.

16. The most recent Project Implementation Review (PIR) for fiscal year 2010 reports that by 30 June 2010 the project had effectively disbursed US$ US$900,000 of the GEF grant to UNEP – close to 90 percent. By then, the project had mobilized over US$ 3,500,000 in co-financing including additional US$ 200,000 provided by the European Union in 2009.

Table 3. Estimated project costs per component and financing source

Component	Co-financing others	GEF	TOTAL	%
Comp I: Analytic fact base on the economics of adaptation	900,000	340,000	1,240,00	

and a synthesis of lessons learned from existing experience			0	
Comp II: Development of adaptation financing models and approaches involving appropriate participation from the public and private sector	705,000	280,000	985,000	
Comp III: Decision support tools to help a broad range of decision-makers understand trade-offs between different response measures as they develop adaptation strategies.	695,000	280,000	975,000	
Project management	300,000	100,000		
Total Project Financing	2,600,000	1,000,000		100

Source: PIF – 06.04.2008

Project implementation issues

17. The project logframe was not revised after project design and no mid-term evaluation of the project was conducted. The latest PIR (2010) showed that project objectives had been met and no significant changes were required that deviated from the project outline. The major challenges encountered were associated with achieving on-going implementation and with the broader adaptation community and primary international funding agencies not agreeing with using cost-benefit analysis to make investment decisions in climate change adaptation.

18. The PIR also pointed out that governments were not well aware of in-country activities, even though specialist branches were brought into country level analysis. Country agreement, alignment and financial commitment were not ideal while most of the measures identified by the project final output required government funding and incorporation of climate risk into decision making.

19. Furthermore, the use of general circulation weather models was found to be one of the weaker parts of the analysis along with relatively little emphasis on the development of financial mechanisms for resource mobilization.

Objective and scope of the evaluation

20. In line with the UNEP Evaluation Policy, the UNEP Evaluation Manual and the Guidelines for GEF Agencies in Conducting Terminal Evaluations, the terminal evaluation of the Project "Economic Analysis of Adaptation Options" is undertaken at the end of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability

requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP, governments, the GEF and their partners. Therefore, the evaluation will identify lessons of operational relevance for future project formulation and implementation. It will focus on the following sets of **key questions**, based on the project's intended outcomes, which may be expanded by the consultants as deemed appropriate:

(a) To what extent has the project increased information for supporting investment choices in adaptation by public and private decision makers?

(b) How successful was the project in improving the ability to identify appropriate financing approaches to meet investment needs?

(c) Has the project increase awareness and knowledge available to private and public decision makers for directing resources towards reducing vulnerability to climate change?

(d) To what extent the project engaged decision makers in the countries and economic development community in general?

Overall approach and methods

21. It will be an in-depth evaluation using a participatory approach whereby key stakeholders are kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods will be used to determine project achievements against the expected outputs, outcomes and impacts.

22. The findings of the evaluation will be based on the following:

(a) A **desk review** of project documents including, but not limited to:

- Relevant background documentation, inter alia UNEP and GEF policies, strategies and programmes pertaining to climate change adaptation;
- Project design documents; Annual Work Plans and Budgets or equivalent, revisions to the logical framework and project financing;
- Project reports such as progress and financial reports from countries to the EA and from the EA to UNEP; Steering Committee meeting minutes; annual Project Implementation Reviews and relevant correspondence;
- Documentation related to project outputs such as: the final report titled "Shaping climate-resilient development, a framework for decision-making";

(b) **Interviews** with:

- Project management and execution support;
- UNEP Task Manager and Fund Management Officer (Nairobi);
- Individual and organizations in the countries where test cases took place and countries' governments;
- Relevant staff of GEF Secretariat;
- Representatives of other projects;

- Key stakeholders in India, Samoa and Tanzania for local data collection purposes.

(c) **Country visits.** The Consultant will provide a collection of case studies and will rely on local resources persons who will assist him/her with data collection and analysis at the country level in India, Samoa and Tanzania. The Consultant will secure the support of these resource persons.

Key evaluation principles

23. Evaluation findings and judgements should be based on **sound evidence and analysis**, clearly documented in the evaluation report. Information will be triangulated (i.e. verified from different sources) to the extent possible, and when verification was not possible, the single source will be mentioned[10]. Analysis leading to evaluative judgements should always be clearly spelled out.

24. The evaluation will assess the project with respect to **a minimum set of evaluation criteria** grouped in four categories: (1) Attainment of objectives and planned results, which comprises the assessment of outputs achieved, relevance, effectiveness and efficiency and the review of outcomes towards impacts; (2) Sustainability and catalytic role, which focuses on financial, socio-political, institutional and ecological factors conditioning sustainability of project outcomes, and also assesses efforts and achievements in terms of replication and up-scaling of project lessons and good practices; (3) Processes affecting attainment of project results, which covers project preparation and readiness, implementation approach and management, stakeholder participation and public awareness, country ownership/driven-ness, project finance, UNEP supervision and backstopping, and project monitoring and evaluation systems; and (4) Complementarity with the UNEP strategies and programmes. The lead consultant can propose other evaluation criteria as deemed appropriate.

25. **Ratings**. All evaluation criteria will be rated on a six-point scale. However, complementarity of the project with the UNEP strategies and programmes is not rated. Annex 3 provides detailed guidance on how the different criteria should be rated and how ratings should be aggregated for the different evaluation criterion categories.

26. In attempting to attribute any outcomes and impacts to the project, the evaluators should consider the difference between **what has happened with** and **what would have happened without** the project. This implies that there should be consideration of the baseline conditions and trends in relation to the intended project outcomes and impacts. This also means that there should be plausible evidence to attribute such outcomes and impacts to the actions of the project. Sometimes, adequate information on baseline conditions and trends is lacking. In such cases this should be clearly highlighted by the evaluators, along with any simplifying assumptions that were taken to enable the evaluator to make informed judgements about project performance.

10 Individuals should not be mentioned by name if anonymity needs to be preserved.

27. As this is a terminal evaluation, particular attention should be given to learning from the experience. Therefore, **the "why?" question** should be at front of the consultants' minds all through the evaluation exercise. This means that the consultants needs to go beyond the assessment of "what" the project performance was, and make a serious effort to provide a deeper understanding of "why" the performance was as it was, i.e. of processes affecting attainment of project results (criteria under category 3). This should provide the basis for the lessons that can be drawn from the project. In fact, the usefulness of the evaluation will be determined to a large extent by the capacity of the consultants to explain "why things happened" as they happened and are likely to evolve in this or that direction, which goes well beyond the mere assessment of "where things stand" today.

Evaluation criteria

- {This section contains standard criteria for GEF evaluations, which are summarised in the evaluation tables, and omitted here.}

The consultants' team

28. For this evaluation, one independent consultant, the Consultant, will be hired. (S)He will be a well-known expert on climate change adaptation options and will have at least twenty years of expertise and experience in:

(a) Climate change impact, adaptation and vulnerability assessment;

(b) Evaluation of environmental projects;

(c) Extensive knowledge of climatology, modeling, climate change and agriculture

This will be coupled by post-graduate level education in geography and climate variability.

29. The Consultant will be responsible for coordinating the data collection and analysis phase of the evaluation, and preparing the main report. (S)He will ensure that all evaluation criteria are adequately covered by the team.

30. By undersigning the service contract with UNEP/UNON, the consultants certify that they have not been associated with the design and implementation of the project in any way which may jeopardize their independence and impartiality towards project achievements and project partner performance. In addition, they will not have any future interests (within six months after completion of their contract) with the project's executing or implementing units.

Evaluation deliverables and review procedures

31. The Consultant will prepare and submit an **inception report** to the UNEP Evaluation Office before starting fieldwork or desk based phone/email interviews. See Annex 11for annotated Table of Contents of Inception Report.

32. The inception report lays the foundations for the main evaluation. Its purpose is to develop an evaluation framework that includes:

- A review of the quality of project design to help identify how project design impacts on project implementation and performance;

- An analysis of the project's theory of change, creating a baseline which can be used to assess the actual project outcomes and impacts (expected and unexpected) during field visits and interviews;

- A detailed plan for the evaluation process.

{The inception report was accepted in June and the details are omitted here.}

33. **The main evaluation report** should be brief (no longer than 35 pages – excluding the executive summary and annexes), to the point and written in plain English. The report will follow the annotated Table of Contents outlined in Annex 2. It must explain the purpose of the evaluation, exactly what was evaluated and the methods used (with their limitations). The report will present evidence-based and balanced findings, consequent conclusions, lessons and recommendations, which will be cross-referenced to each other. The report should be presented in a way that makes the information accessible and comprehensible. Any dissident views in response to evaluation findings will be appended in footnote or annex as appropriate.

34. **Report summary**. The Consultant will prepare a 15-slide presentation summarizing the key findings, lessons learned and recommendations of the evaluation.

35. **Review of the draft evaluation report**. The Consultant will submit the zero draft report to the UNEP EO according to the tentative evaluation schedule in Annex 9 and will revise the draft following the comments and suggestions made by the EO. The EO will then share the first draft report with the UNEP GEF Coordination Office (Nairobi) and the UNEP Division of Technology, Industry and Economics (DTIE). The UNEP Task Manager will forward the first draft report to the other project stakeholders, in particular Project Manager (McKinsey and Company) for review and comments. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. Comments would be expected within two weeks after the draft report has been shared. Any comments or responses to the draft report will be sent to the UNEP EO for collation. The EO will provide the comments to the Consultant for consideration in preparing the final draft report. The Consultant will submit the final draft report no later than 2 weeks after reception of stakeholder comments. The Consultant will prepare a **response to comments** that contradict the findings of the evaluation team and could therefore not be accommodated in the final report. This response will be shared by the EO with the interested stakeholders to ensure full transparency.

36. Consultations will be held between the consultants, EO staff, the UNEP/GEF, UNEP/DTIE, and key members of the project execution team. These consultations will seek feedback on the proposed recommendations and lessons.

37. **Submission of the final Terminal Evaluation report**. The final report shall be submitted by Email to:

Segbedzi Norgbey, Head
UNEP Evaluation Office
P.O. Box 30552-00100
Nairobi, Kenya
Tel.: (+254-20) 762 3387
Email: segbedzi.norgbey@unep.org

38. The Head of Evaluation will share the report with the following persons:

Maryam Niamir-Fuller, Director
UNEP/GEF Coordination Office
P.O. Box 30552-00100
Nairobi, Kenya
Tel: (+254-20) 762 4686
Email: maryam.niamir-fuller@unep.org

Sylvie Lemmet, Director
UNEP/Division of Technology, Industry and Economics (DTIE)
P.O. Box 30552-00100
Nairobi, Kenya
Email: sylvie.lemmet@unep.org

Ibrahim Thiaw, Director
UNEP/Division of Environmental Policy Implementation
P.O. Box 30552-00100
Nairobi, Kenya
Tel: (+254-20) 762 24782
Email: Ibrahim.thiaw@unep.org

Geordie Colville, Task Manager
UNEP/DTIE
Email: Geordie.colville@unep.org

39. The final evaluation report will be published on the UNEP Evaluation Office web-site www.unep.org/eou and may be printed in hard copy. Subsequently, the report will be sent to the GEF Office of Evaluation for their review, appraisal and inclusion on the GEF website.

40. As per usual practice, the UNEP EO will prepare a **quality assessment** of the zero draft and final draft report, which is a tool for providing structured feedback to the evaluation consultants. The quality of the report will be assessed and rated against both GEF and UNEP criteria as presented in Annex 5.

41. The UNEP Evaluation Office will also prepare a **commentary** on the final evaluation report, which presents the EO ratings of the project based on a careful review of the evidence collated by the evaluation team and the internal consistency of the report. These ratings are the final ratings that the UNEP Evaluation Office will submit to the GEF Office of Evaluation.

Resources and schedule of the evaluation

{Confidential and contractual material on payment is omitted.}

{Annexes on the objectives of the project and table of contents of the main report are omitted.}

Evaluation ratings

The evaluation will provide individual ratings for the evaluation criteria described in section II.D. of these TORs. Some criteria contain sub-criteria which require separate ratings (i.e. sustainability and M&E). Furthermore, an aggregated rating will be provided for Relevance, effectiveness and efficiency under the category "Attainment of project objectives and results".

Most criteria will be rated on a six-point scale as follows: Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability is rated from Highly Likely (HL) down to Highly Unlikely (HU).

In the conclusions section of the report, ratings will be presented together in a table, with a brief justification cross-referenced to the findings in the main body of the report. Please note that the order of the evaluation criteria in the table will be slightly different from the order these are treated in the main report; this is to facilitate comparison and aggregation of ratings across GEF project evaluation reports.

Criterion	**Summary Assessment**	**Rating**
A. Attainment of project objectives and results		HS → HU
1. Effectiveness		HS → HU
2. Relevance		HS → HU
3. Efficiency		HS → HU
B. Sustainability of project outcomes		HL → HU
1. Financial		HL → HU
2. Socio-political		HL → HU
3. Institutional framework		HL → HU
4. Environmental		HL → HU
C. Catalytic role		HS → HU
D. Stakeholders involvement		HS → HU
E. Country ownership / driven-ness		HS → HU
F. Achievement of outputs and		HS → HU

Criterion	Summary Assessment	Rating
activities		
G. Preparation and readiness		HS → HU
H. Implementation approach		HS → HU
I. Financial planning and management		HS → HU
J. Monitoring and Evaluation		HS → HU
1. M&E Design		HS → HU
2. M&E Plan Implementation		HS → HU
3. Budgeting and funding for M&E activities		HS → HU
K. UNEP and UNDP Supervision and backstopping		HS → HU
1. UNEP		HS → HU
2. UNDP		HS → HU

Rating of Attainment of project objectives and results. A compound rating is given to the category based on the assessment of relevance, effectiveness and efficiency. This aggregated rating is not a simple average of the separate ratings given to the evaluation criteria, but an overall judgement by the consultants. Relevance and effectiveness, however, will be considered as critical criteria. This means that the aggregated rating for Attainment of objectives and results may not be higher than the lowest rating on either of these two criteria.

Ratings on sustainability. According to the GEF Office of Evaluation, all the dimensions of sustainability are deemed critical. Therefore, the overall rating for sustainability will not be higher than the lowest rating on the separate dimensions.

Ratings of monitoring and evaluation. The M&E system will be rated on M&E design, M&E plan implementation, and budgeting and funding for M&E activities (the latter sub-criterion is covered in the main report under M&E design) as follows:

> Highly Satisfactory (HS): There were no shortcomings in the project M&E system.
>
> Satisfactory(S): There were minor shortcomings in the project M&E system.
>
> Moderately Satisfactory (MS): There were moderate shortcomings in the project M&E system.
>
> Moderately Unsatisfactory (MU): There were significant shortcomings in the project M&E system.
>
> Unsatisfactory (U): There were major shortcomings in the project M&E system.
>
> Highly Unsatisfactory (HU): The Project had no M&E system.

M&E plan implementation will be considered critical for the overall assessment of the M&E system. Thus, the overall rating for M&E will not be higher than the rating on M&E plan implementation.

{Templates on financial costs omitted.}

Quality assessment of the evaluation report

All UNEP evaluation reports are subject to a quality assessment by the Evaluation Office. The quality assessment is used as a tool for providing structured feedback to the evaluation consultants. The quality of the draft evaluation report is assessed and rated against the following criteria:

GEF Report Quality Criteria	**UNEP EO Assessment**	**Rating**
A. Did the report present an assessment of relevant outcomes and achievement of project objectives in the context of the focal area program indicators if applicable?		
B. Was the report consistent and the evidence complete and convincing and were the ratings substantiated when used?		
C. Did the report present a sound assessment of sustainability of outcomes?		
D. Were the lessons and recommendations supported by the evidence presented?		
E. Did the report include the actual project costs (total and per activity) and actual co-financing used?		
F. Did the report include an assessment of the quality of the project M&E system and its use for project management?		
UNEP additional Report Quality Criteria		
G. Quality of the lessons: Were lessons readily applicable in other contexts? Did they suggest prescriptive action?		
H. Quality of the recommendations: Did recommendations specify the actions necessary to correct existing conditions or improve operations (‘who?’ ‘what?’ ‘where?’ ‘when?)’. Can they be implemented? Did the recommendations specify a goal and an		

associated performance indicator?		
I. Was the report well written? (clear English language and grammar)		
J. Did the report structure follow EOU guidelines, were all requested Annexes included?		
K. Were all evaluation aspects specified in the TORs adequately addressed?		
L. Was the report delivered in a timely manner		

Quality = (2*(0.3*(A + B) + 0.1*(C+D+E+F))+ 0.3*(G + H) + 0.1*(I+J+K+L))/3

The Totals are rounded and converted to the scale of HS to HU

Rating system for quality of Terminal Evaluation reports: A number rating between 1 and 6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1.

{Template for assignments across consultants omitted.}

Documentation list for the evaluation to be provided by the UNEP Task Manager

- Project design documents
- Project supervision plan, with associated budget
- Correspondence related to project
- Supervision mission reports
- Steering Committee meeting documents, including agendas, meeting minutes, and any summary reports
- Project progress reports, including financial reports submitted
- Cash advance requests documenting disbursements
- Annual Project Implementation Reports (PIRs)
- Management memos related to project
- Other documentation of supervision feedback on project outputs and processes (e.g. comments on draft progress reports, etc.).
- Extension documentation. Has a project extension occurred?
- Project revision documentation.
- Budget revision documentation.
- Project Terminal Report (draft if final version not available)

{A very useful section on the Theory of Change is omitted—it provides background to the evaluation approach but not specific guidance for this assignment. The project did not specify its Theory of Change, so the evaluation could not judge assumptions about intermediary steps and impacts.}
{Tables for rating the project design are filled in above, the templates are omitted here.}

{The evaluation schedule is reported above.}

{The template for the Table of Contents for the inception report is omitted.}

13 Annex 5. Data Sources

- The available documentation is listed below. The shaded rows indicate the main documents relevant to this evaluation.

Table 12. Project documents available to the evaluation team

Report/documents	Scope	Notes
Letters of support from ClimateWorks, SwissRe, McKinsey,	Administrative	
CEO Endorsement request	Administrative	Same content as the PIF, date not specified, presumably late in 2008 as January 2009 was indicated as start date
ICA: Initial Cooperation Agreement	Administrative	Contractual terms with GEF
UNEP-Niamir-Fulller 08.13.08	Administrative	Letter from GEF (Monique Barbut) requesting UNEP to implement the project as designed by McKinsey through the SCCF, noting 70% co-financing by McKinsey
Implementation plan	Administrative	Logical framework's outcomes scheduled by month, noting UNEP/DEPI activities and DEPI co-finance ($91,000)
McKinsey_PRC Final	Administrative	Final Project Cooperation Agreement between UNEP/GEF and McKinsey, mostly legal and administrative terms. Note that half-yearly progress reports are required. File is marked 25 November 2008 although document date is not filled in.
PRC Action Sheet Responses	Administrative	Table of review criteria and responses/changes made in the project document to comply with UNEP's review. Responses are dated 6 October

		2008.
Appendix 2 co-financing table	Administrative	Spreadsheet of project finance, file dated 5 Dec 2008
Project Document File	Administrative	Main project file, file dated 5 Dec 2008 noting project start in Jan 2009 through Dec 2010
ECA: Executive Summary, 4 pages	Global	Shaping climate-resilient development: A framework for decision-making: Economics of Climate Adaptation Working Group, 2009 (Copyright: ClimateWorks Foundation, Global Environment Facility, European Commission, McKinsey & Company, The Rockefeller Foundation, Standard Chartered Bank and SwissRe)
ECA: Main Report, 56 pages	Global	- " -
ECA: Methodological Guide, 16 pages	Global	- " -
Project Identification Form, 12 pages	Global	Originally submitted 4 April 2008, re-submitted 4 June 2008
Project Implementation Report, 32 pages	Global	CC_PIR Mckinsey – Final.doc, header of file is UNEP GEF PIR Fiscal Year 10 (1 July 2009 to 30 June 2010)
Mission report (two versons, one signed)	Global	Report dated 18 Dec 2008 from Liza Leclerc (original UNEP project officer), reports on first meeting of technical advisory group; raises good questions (uncertainty, bundles of measures), only 2 pages with bullets of actions
UNEP-DGEF budget format-1 (two versions)	Global	UNEP budget form showing expenditure in fees to McKinsey, travel, meeting rooms, and communications; no date but presumably end-of-project as total

		expenditure is $1 million
Appendix 2_Budget in UNEP format	Global	Budget presumably from Project Document File, shows contributions from GEF, McKinsey, ClimateWorks and SwissRe for Nov 2008 to Dec 2009 (first year), total is $2.5 million
Technical expert list	Global	19 names, appear to be ones condired for expert advisors, file dated Nov 2008
Guyana Outside in Final to Print (a similar file is Adaptation Project Overview – Final to print)	Guyana	Powerpoint: 37 slides from Guyana test case, marked confidential as proprietary to McKinsey (not the EAC working group or project), October 2008
Executive Committee Project Update – Final	Guyana	Dated 17 October 2008, relates only to Guyana plans, marked confidential and proprietary
Pre-read Guyana – v.1.0	Guyana	PDF of slides reporting test case, 11 Dec 2008
Pre-read Mehodology – v.1.0	Guyana	PDF of slides from Guyana test case, dated 11 Dec 2008, first 30 slides are general methodology
ECA Test Case: India, 5 pages	India	- " -
ECA Test Case: Samoa, 14 pages	Samoa	- " -
ECA Test Case: Tanzania, 7 pages	Tanzania	- " -

- Note: the reports marked ECA are all contained in the one final report. There were no progress reports and neither UNEP nor McKinsey were able to provide any further supporting documentation, the 'fact bases' described in the PIF or technical reports and information on the country test cases.

- The evaluation for each test case looked at additional documents. These are noted in the test case section. For example, in Tanzania, the evaluation team looked at 14 different health, energy and climate change strategy related studies focusing on or containing substantial information Tanzania since 2009. There was only a mention of the ECA Study in one of the sources. Within this source, *Climate Change Vulnerability and Adaptation Preparedness in Tanzania*, the ECA Study

was sited approximately 3 times and generally used for background information instead of being part of the analysis.

Table 13. Documents on Tanzania and citations to the ECA study

Document	Relevance
Tanzania's Draft National Climate Change Strategy and Action Plan led by the Government of Tanzania's Vice President's Office.	No mention of the ECA Study.
P. Bhakta (TZFO), P. Kariuki (UGFO), B. Hija (TZFO), G. Kaijage (TZFO), L. Kiggundu (TZFO), B. Kishebuka (TZFO), S. Marandu (TZFO), Rweyamamu (TZFO), D. O. Leo (TZFO), S. Turay (OREA)I. Amadou (OSAN), C. Ambert (OPSM), S. Chinien (OSGE), P. Dzimiri (OWAS), B. Issahaku (OSHD), F. Mkandawire (ORPF), E. Muguti (ONEC), M. Muwele (ESTA), E. Negash (ONEC), T. Ngororano (OSGE), B. Purohit (OPSM), T. Temesgen (OSGE). AfDB. African Development Fund. Untied Republic of Tanzania Country Strategy Paper 2011-2015. June 2011.	No mention of the ECA Study.
DSW – German Foundation for World Population. Health Spending in Tanzania: The Impact of Current Aid Structures and Aid Effectiveness. EU Health ODA and Aid Effectiveness. County Briefing 2. October 2010.	No mention of the ECA Study.
Gemma Norrington-Davies and Nigel Thornton. Climate Change Financing and Aid Effectiveness Tanzania Case Study. 2011. http://www.oecd.org/dac/environmentanddevelopment/48458474.pdf	No mention of the ECA Study.
Human Resources for Health in Tanzania: Deployment Tracking Survey. 2010. http://www.sikika.or.tz/en/cms/functions/files/publication69.pdf	No mention of the ECA Study.
Moussa Na Abou Mamouda (ENDA TM). Policy Paper on Energy, Climate Change and Poverty Alleviation Energy in the National Adaptation Programmes of Action (NAPAs) in Africa. Prepared for GNESD. October 2009.	No mention of the ECA Study.

Musau, Stephen, Grace Chee, Rebecca Patsika, Emmanuel Malangalila, Dereck Chitama, Eric Van Praag and Greta Schettler. July 2011. *Tanzania Health System Assessment 2010.* Bethesda, MD: Health Systems 20/20 project, Abt Associates Inc.	No mention of the ECA Study.
Nick Hepworth. Climate Change Vulnerability and Adaptation Preparedness in Tanzania. LTS Africa. 2010.	ECA Study is mentioned approximatel y 3 times.
Sosovele, Hussein (2010), Policy Challenges Related to Biofuel Development in Tanzania, Africa Spectrum, 45, 1, 117-129. ISSN: 1868-6869 (online), ISSN: 0002-0397. GIGA German Institute of Global and Area Studies, Institute of African Affairs.	No mention of the ECA Study.
Stephen Karekezi, John Kimani, and Oscar Onguru. Policy Paper on Energy, Climate Change and Poverty Alleviation Climate Change and Energy Security in East Africa. Prepared for GNESD. October 2009	No mention of the ECA Study.
Tanzania Global Health Initiative Strategy 2010 – 2015. 2011. http://www.ghi.gov/documents/organization/175135.pdf	No mention of the ECA Study but doesn't appear any reference are directly cited.
The United Republic of Tanzania: PRS/MDG Programming Gleneagles Scenario Report. August 2009.	No mention of the ECA Study but doesn't appear any reference are directly cited.
Watkiss, P. Downing, T., Dyszynski, J., Pye, S. et al (2011). The Economics of Climate Change in the United Republic of Tanzania. Report to Development Partners Group and the UK Department for International Development. Published January	No mention of the ECA Study.

2011. Available at: http://economics-of-cc-in-tanzania.org/	
WHO Country Cooperation Strategy, 2010-2015, Tanzania. ISBN: 978 929 023 1400. (NLM Classification: WA 540 HT3). WHO Regional Office for Africa, 2009. http://www.who.int/countryfocus/cooperation_strategy/ccs_tza_en.pdf	No mention of the ECA Study.

14 Annex 6. Short Bios of the Evaluation Team

- This is a relatively short evaluation, with a small team. The team was led by T Downing, with overall responsibility for the design review, global survey and synthesis of results.

- Dr Thomas E. Downing (PhD, Geography, Clark University) is the Chief Executive Officer of the Global Climate Adaptation Partnership, (GCAP). He was formerly Director of the Oxford Office of the Stockholm Environment Institute, Reader in Climate Policy in the Environmental Change Institute of the University of Oxford, and has been the science advisor to the UK Climate Impacts Programme and UK Parliament. He is also visiting professor in Oxford University in the School of Geography and Environment and Queen Elisabeth House.

- His major interests are vulnerability and adaptation to climate change and climatic hazards, with an emphasis on developing good practice in actor-network approaches, from simple pathway narratives to agent-based social simulation. Flagship projects include the Climate Safeguards System for the African Development Bank and Economics of Adaptation for UNEP and DFID. He has published over 100 papers, books, reports and book reviews, including the Atlas of Climate Change (with Kirstin Dow). His most exciting challenge is developing a distributed community of practice on climate adaptation through the Adaptation Academy and advanced knowledge management services.

- The test cases were chosen in cooperation with the Evaluation Office. The lead experts chosen for the team have worked in these countries and have extensive contacts for interviews.

- **Robert Kay** leads Adaptive Futures, with over 20 years experience in climate change impact assessment, coastal zone management and planning. He has a background in climate change vulnerability and adaptation assessment, geomorphology and coastal planning and management. Dr Kay has worked in a variety of roles in government, consulting and academic sectors including seven years in the Western Australian civil service where he ran the Western Australian coastal planning program and the State's coastal management branch. His private sector experience includes leading projects in Europe, New Zealand, Middle-East, Australia, Africa, Bangladesh and the Pacific. He has an Honours degree in Geology (Wales) and PhD in Environmental Science (East Anglia UK). Robert has worked extensively on climate change vulnerability assessment and adaptation projects, initiated by the first coastal impact assessment of the UK coastline during the late 1980s. Since then, he has either led or participated in climate change projects globally, ranging from local-scale projects worldwide (including for local, state, national and multilateral agencies) to global analysis for the United National Framework Convention on Climate Change (UNFCCC) and the UN National Communications Support Programme (NCSP). Dr Kay has also been involved as an expert reviewer for the IPCC since its inception. Based in Melbourne, Robert led the team evaluating the Samoa test case.

- Mica Longanecker is the Business Development Officer for the Global Climate Adaptation Partnership, (GCAP), and Managing Director of the GCAP office in Nairobi. He received his Bachelor of Science from the University of Virginia's McIntire School of Commerce, with concentrations in Finance and Management. He is involved in the development and facilitation of the Adaptation Academy; responsibilities include managing budgets, coordination and communication, and marketing. He has helped with the management of several projects including the DFID Economics of Climate Change Adaptation in Tanzania, EC ClimateCost, DFID Climate Change Strategic Evaluation of the Rwanda Programme and UNISDR/EUR-OPA Governance of Climate Change Adaptation in Europe. He was the secondary author on the UNISDR/EUR-OPA Governance of Climate Change Adaptation in Europe, responsible for conduction the primary and secondary research and writing a majority of the study. GCAP has been asked to be the opening presenter for a meeting of senior government officials and scientists based on the work done in the UNISDR/EUR-OPA study. He is interested in working to bridge the gaps between business and environmental activities, chiefly climate change and adaptation, through practical applications and solutions. He compiled the Tanzania evaluation for this project.

- **Vikrom Mathur** has fifteen years of professional experience, straddling research and policy advice, at the interface of development and adaptation to environmental change. His diverse research interests include: institutional frameworks for adaptive decision-making; social and cultural aspects of risk; the dynamics between climate science and adaptation policy; the application of insights from social and cultural anthropology to contemporary science-policy debates; the social, cultural and political context of science about nature and epistemology. He has undertaken consultancy assignments for various multilateral and bilateral development agencies including: Asian Development Bank; African Development Bank; Mekong River Commission; United Nations Environment Program; United Nations Development Program' Swedish Red-cross and the Swedish International Development Co-operation Agency. He received his Doctorate of Philosophy degree from Oxford University, Institute for Science, Society and Innovation. The focus of his research was on institutional frameworks for climate adaptation decision making around the Tonle Sap Lake of Cambodia. He uses Cultural Theory to examine how different policy stories on adaptation to climate change are linked to varying nature-myths characteristic of different social solidarities. He is amongst the lead authors of the vulnerability chapter of United Nations Environment Programs Global Environmental Outlook 2004. He has worked in over ten different countries but his focus has been on the Mekong Region: Laos, Vietnam, Cambodia, Thailand, Myanmar and the Yunnan province of China. He led the development of a Strategic Environmental Framework for the Asian Development Bank's program for economic integration in the Mekong He led the establishment of a collaborative research and knowledge network in the Mekong region (SUMERNET) and the Stockholm Environment Institute's regional office in Asia. Vikrom received a Bachelor in Environmental Engineering from McGill University, Canada and Masters in Regional Planning from the Royal Institute of Technology, Sweden. Based in Delhi and Bangalore, Vikrom led the evaluaution of the India test case.

The Evaluation Team consulted with other leading experts on the economics of climate adaptation to ensure a wide range of views was taken on board.

15 Annex 7. Summary of Project Finance and Expenditure

- The project document anticipated a budget of $4,500,000, with the SCCF contribution of $1,000,000. The planned co-financing was:
    - McKinsey & Company: $2,000,000
    - ClimateWorks Foundation: $500,000
    - SwissRe: $1,000,000
- The budget appendix indicates the breakdown by UNEP budget line for the SCCF funding. The majority is $750,000 devoted to McKinsey Consultancies (which includes local consultants and outside technical honoraria). There is also an incremental cost analysis.

Table 14. Planned project budget by component

Component	Co-financing others	GEF (SCCF)	TOTAL
Comp I: Analytic fact base on the economics of adaptation and a synthesis of lessons learned from existing experience	1,500,000	320,000	1,820,000
Comp II: Development of adaptation financing models and approaches involving appropriate participation from the public and private sector	1,000,000	280,000	1,28,000
Comp III: Decision support tools to help a broad range of decision-makers understand trade-offs between different response measures as they develop adaptation strategies.	1,000,000	280,000	1,280,000
Project final evaluation		30,000	30,000
Project management	500,000	90,000	590,000
Total Project Financing	3,500,000	1,000,000	4,500,000

- Source: Project Document Final, Submission date: December 10, 2008

- The Project Implementation Report includes a financial summary. This will be verified with UNEP and the consultants. In particular, it would be helpful if each of the parties to the project made clear their own contribution:

    - UNEP/GEF/SCCF allocation: $1,000,000

Expected co-financing was noted as $3,500,000, corresponding to the project document. The actual expenditure at the date of completion in December 2010 was:

- GEF: $970,000

- EU: $255,814 (this appears to be in preparation for the Zurich Summit and report roll-out)

- Co-financing realized as of 30 June 2010: $3,500,000

Table 15. Project expenditure at completion

Component	**Co-financing others**	**GEF (SCCF)**	**TOTAL**	**%**
Comp I: Analytic fact base on the economics of adaptation and a synthesis of lessons learned from existing experience	900,000	340,000	1,240,000	
Comp II: Development of adaptation financing models and approaches involving appropriate participation from the public and private sector	705,000	280,000	985,000	
Comp III: Decision support tools to help a broad range of decision-makers understand trade-offs between different response measures as they develop adaptation strategies.	695,000	280,000	975,000	
Project management	300,000	100,000		
Total Project Financing	2,600,000	1,000,000		100

- Source: Project Implementation Report: Fiscal Year 10, 1 July 2009 to 30 June 2010.

- The project budget and actual expenditure are compared in the following table. Note that disbursement from the GEF has been $970,000, with the project evaluation budget of $30,000 remaining, which brings the expenditure to the planned total. The final report does not breakdown the co-financing as direct expenditure and in-kind but indicates that the total co-financing was achieved in the project.

Table 16. Financial summary

Co-Financing	Sources						Total (thousand US$)		Total Disbursed (thousand US$)
	IA (UNEP) own Financing (thousand US$) (1)		Government (thousand US$)		Other (2) (thousand US$)				
Type	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
Grants: GEF Trust Fund	1,000	1,000					2,000	2,000	2,000
Co-financing (confirmed): Climate Works, Swiss Re	1,000	1,000					1,000	1,000	1,000
Loans									
Equity investments									
In-kind (confirmed): Swiss Re, McKinsey	2,500	2,500					2,500	2,500	2,500
Other									
Totals	4,500	4,500					4,500	4,500	4,500

16 Annex 8. Review Tables for Design Quality from Inception Report

- Note: these ratings have been revised since the Inception Report.

Relevance		**Evaluation Comments**	**Prodoc reference**
Are the intended results likely to contribute to UNEP's expected accomplishments and programmatic objectives?		S: The project was ambitious in scope and at the time one of the first systematic efforts within UNEP to create a methodology and toolkit for adaptation. Links to other UNEP initiatives are mentioned, although it is not clear how the ECA project was intended to work within UNEP.	Section B, C & D
Does the project form a coherent part of a UNEP-approved programme framework?		MS: The project predates a UNEP – wide framework for adaptation although it outlines links to several projects and initiatives. For instance, missing in the PIF is how the project would relate to the major campaign in DEPI to establish a global/regional network on adaptation.	Section B, C & D
Is there complementarity with other UNEP projects, planned and ongoing?		MU: As above—while these links were mentioned there is little evidence of how the project engaged within UNEP	Section B, C & D
Are the project's objectives and implementation strategies consistent with:	Sub-regional environmental issues and needs?	MU: The test cases are not really regional and the output is only a global report without a clear link to regional issues, processes or priorities.	Not identified
	UNEP mandate and policies at the time of	S: Climate was already a priority although there was not a firm,	Section B, C & D

	design and implementation?	UNEP-wide framework in place	
	Stakeholder priorities and needs?	MS: National priorities and plans are mentioned but mostly in the context of NAPAs and UNEP activities. The project was designed at a stage where national plans were just taking shape, so it would have been difficult to gauge requirements at the end of the project.	Section B
Overall rating for Relevance		**MS**	

Intended Results and Causality	Evaluation Comments	Prodoc reference
Are the objectives realistic?	S: At the time, the objectives were desirable and could have been achieved	Section A: Outputs and Expected benefits
Are the causal pathways from project outputs [goods and services] through outcomes [changes in stakeholder behaviour] towards impacts clearly and convincingly described? Is there a clearly presented Theory of Change or intervention logic for the project?	U: Causal pathways are not mentioned. The statement of expected benefits is not connected to a theory of change.	Section A: Expected benefits
Is the timeframe realistic? What is the likelihood that the anticipated project outcomes can be achieved within the stated duration of the project?	S: Other groups developed similar toolkits in this period, so it is not unrealistic to expect the project to have a significant input over 2 years.	Timeline and work plan not included in the PIF
Are the activities designed within the project likely to produce their intended results?	MU: The outputs are not adequately mapped onto the expected benefits nor are critical assumptions stated	Section A: Expected benefits
Are activities appropriate to produce outputs?	S: Although the design is rather general, the outputs should have been straightforward to produce	Section A: Outputs
Are activities appropriate to drive change along the intended causal pathway(s)	MU: No casual pathway is identified and the link to outcomes is overly simplistic	Section A: Expected benefits
Are impact drivers, assumptions and the roles and capacities of key actors and stakeholders clearly described for each key causal pathway?	HU: Key assumptions are not stated; the section on risk states obvious issues but assumes they are simply a matter of consultation with stakeholders—there is no documentation	Section A: Expected benefits; F: Risks

	regarding the level of such consultation or mechanisms to address these risks in managing the project	
Overall rating for Intended Results and causality	**MU**	

Efficiency	Evaluation Comments	Prodoc reference
Are any cost- or time-saving measures proposed to bring the project to a successful conclusion within its programmed budget and timeframe?	S: The project brought in significant counter-part funding, in the end about twice what was identified in the PIF; apparently GEF endorsement was significant in raising further finance	Section C
Does the project intend to make use of / build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. to increase project efficiency?	MS: Links are identified but a management plan is not stated and the actual governance of the project is not documented; this is a key issue given the many stakeholders involved and its high-profile visibility	Section D
Overall rating for Efficiency	**MS**	

Sustainability / Replication	Evaluation Comments	Prodoc reference
Does the project design present a strategy / approach to sustaining outcomes / benefits?	U: The PIF does not address this issue; implicit in the design is that the consulting company would use the data and methods as part of its business strategy but this assumption is not addressed	Not addressed
Does the design identify the social or political factors that may influence positively or negatively the sustenance of project results and progress towards impacts? Does the design foresee sufficient activities to promote government and stakeholder awareness, interests, commitment and incentives to execute, enforce and pursue the programmes, plans,	MS: A few risks are noted, but not along these lines and without any analysis or sufficient remedial planning; the assumption that 'fact base' and a 'toolkit' are the sufficient barriers to action underlies the project design and the role of actual stakeholders making decisions is not addressed	Section F

agreements, monitoring systems etc. prepared and agreed upon under the project?		
If funding is required to sustain project outcomes and benefits, does the design propose adequate measures / mechanisms to secure this funding?	U: The costs of using the outputs after the project was over are not mentioned; the implicit assumption that the fact bases and toolkit would be widely available has not been the case	Not addressed
Are there any financial risks that may jeopardize sustenance of project results and onward progress towards impact?	S: As above, these are not part of the design; however, McKinsey stood behind the project and ensured the final outcome was achieved	Not addressed
Overall rating for Sustainability (biases toward the minimum of above)	**MU**	

Catalytic effects	**Evaluation Comments**	**Prodoc reference**
Does the project design adequately describe the institutional frameworks, governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. required to sustain project results?	HU: Not part of the design, a major failing in how adaptation is conceptualized	Not addressed
Does the project design identify environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to affect the environment, which, in turn, might affect sustainability of project	MU: Not identified, but not likely to be a major factor although the UNEP lead on ecosystems based adaptation has emerged as a significant agency priority	Not addressed

benefits?			
Does the project design foresee adequate measures to catalyze behavioural changes in terms of use and application by the relevant stakeholders of (e.g.):	technologies and approaches show-cased by the demonstration projects;	MS: Demonstration projects were not planned; the project was intended to review a wide range of technologies	Not addressed
	strategic programmes and plans developed	S: This was a major objective	Section A, Component 2
	assessment, monitoring and management systems established at a national and sub-regional level	U: No M&E plans were identified, national management systems were not targeted other than to assume that the ECA toolkit was appropriate	Not addressed
Does the project design foresee adequate measures to contribute to institutional changes? [contribution to institutional uptake or mainstreaming of project-piloted approaches in any regional or national demonstration projects]		U: No change theory was evident in the design, the assumption was implied that the barrier to action was information and existence of a toolkit	Not addressed
Does the project design foresee adequate measures to contribute to policy changes (on paper and in implementation of policy)?		S: This was the objective, however difficult to tell the extent to which 'adequate' was considered in the design	Section A, Component 3
Does the project design foresee adequate measures to contribute to sustain follow-on financing (catalytic financing) from Governments or other donors?		MS: A major component was to link financial models to selection of adaptation measures and make this link easy for national governments to pursue	Section A, Component 2

Does the project design foresee adequate measures to create opportunities for particular individuals or institutions ("champions") to catalyze change (without which the project would not achieve all of its results)?	U: Not addressed, no evidence of a training plan for experts outside the consultant's team to be able to use the toolkit or have access to the full fact bases	Not addressed
Are the planned activities likely to generate the level of ownership by the main national and regional stakeholders necessary to allow for the project results to be sustained?	U: Ownership issues were not addressed	Not addressed
Overall rating for Catalytic effects	**MU**	

Risk Identification and Social Safeguards	**Evaluation Comments**	**Prodoc reference**
Are critical risks appropriately addressed?	MS: Risks were identified although the response is not adequate	Section F
Are assumptions properly specified as factors affecting achievement of project results that are beyond the control of the project?	U: There is a lack of information on how the fact bases, toolkit and overall methodology would inform project outcomes in the context of other information, international efforts and approaches	Section B, C & D
Are potentially negative environmental, economic and social impacts of projects identified?	Not rated: these are not identified but they should not have been a particular concern, although one might note the emissions from consultants travel on the project	Not addressed
Overall rating for Risk identification and Social Safeguards	**MU**	

Governance and Supervision Arrangements	Evaluation Comments	Prodoc reference
Is the project governance model comprehensive, clear and appropriate?	MS: A steering committee is mentioned but no details are provided and no records were made available to the Evaluation Team as to how the project was managed	Section F
Are roles and responsibilities clearly defined?	U: Membership, roles and coordination mechanisms were not identified	Section F
Are supervision / oversight arrangements clear and appropriate?	U: A single global workshop was convened at the conclusion of the project; the design did not include how the methodology and content would be reviewed	Section F
Overall rating for Governance and Supervision Arrangements	**MU**	

Management, Execution and Partnership Arrangements	Evaluation Comments	Prodoc reference
Have the capacities of partners been adequately assessed?	U: It is not clear from the PIF as to who was intended to carry out the project—the partners ultimately identified in the final report are not mentioned and there is no indication that the competence of the partners to do the assessment was evaluated	Not addressed
Are the execution arrangements clear?	MU: The PIF mentions some links to DEPI in UNEP but not to other relevant divisions (e.g., DTI had the overall lead on	Not addressed

	climate change); the assumption seems to have been to let the lead consultant take a free hand as the GEF funding was only a part of the larger project	
Are the roles and responsibilities of internal and external partners properly specified?	MU: As above	Not addressed
Overall rating for Management, Execution and Partnership Arrangements	**MU**	

Financial Planning / budgeting	**Evaluation Comments**	**Prodoc reference**
Are there any obvious deficiencies in the budgets / financial planning	S: The project leveraged considerable finance in addition to the GEF contribution, much more than was indicated in the PIF; it is not clear from the documentation what the other sources of finance were, the amounts contributed and the nature of their contracts with the consultants	Summary tables B & C
Cost effectiveness of proposed resource utilization as described in project budgets and viability in respect of resource mobilization potential	MU: This was an expensive project—over $4 million to produce a report of less than 200 pages; however there is little information to judge whether the cost-effectiveness was considered during the project design	Not addressed
Financial and administrative arrangements including flows of funds are clearly described	U: No information available	Not addressed

Overall rating for Financial Planning / budgeting	**MU**	

Monitoring	**Evaluation Comments**	**Prodoc reference**
Does the logical framework: capture the key elements in the Theory of Change for the project; have 'SMART' indicators for outcomes and objectives?; have appropriate 'means of verification'; adequately identify assumptions	HU: A simple logical framework is included in the final project document; however, the indicators are not complete or adequate to capture the full intention of the objectives; verification appears mostly to be internal to the project team	Not addressed
Are the milestones and performance indicators appropriate and sufficient to foster management towards outcomes and higher level objectives?	U: milestones not provided	Not addressed
Is there baseline information in relation to key performance indicators?	U: There is an indirect sense of the baseline in the rationale, but not captured in a monitoring system	Not addressed
Has the method for the baseline data collection been explained?	HU: None specified	Not addressed
Has the desired level of achievement (targets) been specified for indicators of outcomes and are targets based on a reasoned estimate of baseline?	U: not provided	Not addressed

Has the time frame for monitoring activities been specified?	U: Not provided	Not addressed
Are the organisational arrangements for project level progress monitoring clearly specified?	HU: The oversight is not indicated	Not addressed
Has a budget been allocated for monitoring project progress in implementation against outputs and outcomes?	U: A small budget is indicated, no breakdown is provided	Not addressed
Overall, is the approach to monitoring progress and performance within the project adequate?	HU: None is indicated	Not addressed
Overall rating for Monitoring	**Insufficient information to compile a rating**	

Evaluation	**Evaluation Comments**	**Prodoc reference**
Is there an adequate plan for evaluation?	U: None is provided	Not provided
Has the time frame for Evaluation activities been specified?	U: Not provided	Not provided
Is there an explicit budget provision for mid-term review and terminal evaluation?	HS: A budget is indicated	Not provided
Is the budget sufficient?	MU: The budget is inadequate for the evaluation of such an instrumental and complex project	Not provided
Overall rating for Evaluation	**MU**	

17 Annex 9. Review Tables for Original Design

17.1 Attainment of Objectives and Planned Results

Attainment of Objectives and Planned Results		
*** Intended results and causality.** The criteria follow the Theory of Change to evaluate if objectives are realistic, set out in achievable causal pathways and timeframes, with appropriate activities and outputs. The Inception Report highlighted that the objectives were realistic for the time of the project's design (2009) although causal pathways and a project-level Theory of Change were not explicit. Design Quality score: Moderately Unsatisfactory.		
	Evaluation Comments	**Rating**
Achievement: Success in producing the programmed outputs, their usefulness and timeliness.	Outputs changed during the project; all outputs were reduced to one global report; poor documentation of the 'fact bases'; methodological appendix instead of decision support tools	MU
Relevance: Objectives and implementation strategies consistent with: sub-regional environmental issues and needs; UNEP mandate and policies at the time of design and implementation; and relevant GEF focal areas, strategic priorities and operational programme(s).	Very relevant although not country driven and poorly integrated within UNEP	MS
Effectiveness: framework and information base to support increased and innovative means of financing adaptation to climate change and its component objectives. To measure achievement, use as much as appropriate the indicators for achievement proposed in the Logical Framework Matrix (Logframe) of the project, adding other relevant indicators as appropriate. Briefly explain what factors affected the project's success in achieving its objectives.	Finance component mostly dropped; the methodology (CBA) is not a strong criteria for finance—cost-effectiveness and practicable concerns are more important in investment decision making	U
Efficiency: Cost-effectiveness and timeliness of project, any cost- or time-saving measures put in place in attempting to bring the project to a successful conclusion within its programmed budget and (extended) time. Analyse how delays, if any, have affected	Project team at McKinsey stepped in to finish the project where the full ECAWG had reservations; an expensive project overall, partly in the design and fees paid to McKinsey but also the very wide scope; long term impact compared to the Stern Report or	MU

project execution, costs and effectiveness. Wherever possible, compare the cost and time over results ratios of the project with that of other similar projects. Give special attention to efforts by the project teams to make use of pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. to increase project efficiency.	World Bank EACC suggests relatively little value for money	
Review of Outcomes to Impacts (ROtI): Logical pathways from project outputs over achieved objectives towards impacts, taking into account performance and impact drivers, assumptions and the roles and capacities of key actors and stakeholders. Assess extent project has contributed, and is likely in the future to further contribute to changes in stakeholder behaviour as regards: improved resource allocation decisions, more effective design and implementation of adaptation projects and the likelihood of those leading to changes in the natural resource base and benefits derived from the environment: Climate change adaptation strategies that better manage volatility and unpredictable outcomes.	Very limited real impact other than to raise critical issues of economics as applied to adaptation and the limitations of applying mitigation approaches; fact base is too generic and not sufficiently documented to be applied in real decision making; to some extent strengthens the case for existing measures as headlined in the ECA report, but this is not a new result in the assessment literature	MU
Overall rating for Attainment of Objectives	(average of above)	**MU**

17.2 Sustainability and Catalytic Role

Sustainability and Catalytic Role		
*** Sustainability / Replication:** Criteria focus on the project's anticipation of sustained benefits including the role of key stakeholders and funding. The Inception Report commented that only a few risks were noted and the critical role of a private company keeping the detailed data set confidential was not mentioned. While sustainable finance was not addressed, the role of McKinsey in supporting the project through to the end, with additional staff costs, was appreciated. Design Quality score: Moderately Unsatisfactory.		
Sustainability	**Evaluation Comments**	**Rating**

Socio-political sustainability. Social or political factors that may influence positively or negatively the sustenance of project results and progress towards impacts. Level of ownership by the main national and regional stakeholders sufficient to allow for the project results to be sustained. Government and stakeholder awareness, interests, commitment and incentives to execute, enforce and pursue the plans agreed upon under the project.	Socio-political factors ignored in limiting 'economics' to a single, micro-economic indicator; macro-economic pathways, transaction costs and institutional, social and cultural determinants of choices not covered; project not designed to develop real government plans	MU
Financial resources. Extent that continuation of project results and the eventual impact depend on continued financial support. Likelihood that adequate financial resources will be available to implement plans prepared under the project. Financial risks that may jeopardize sustenance of project results and progress impact.	No plans were reported as outputs; results would need continued involvement of McKinsey in order to make use of the 'fact bases'	U
Institutional framework. Extent the sustenance of the results and impact depend on institutional frameworks and governance. Robustness of project's institutional achievements.	Very little institutional buy-in to the methodology (even within UNEP); most practical approaches use other methods at present; some sense of the ECA being a useful case study for training as it raises so many fundamental issues	MU
Environmental sustainability. Environmental factors that influence future project benefits.	None, other than GHG costs of international consultants	S
Overall rating for Sustainability	(average of above)	MU

Sustainability and Catalytic Role
Catalytic effects
*** Catalytic role:** Criteria include institutional frameworks and governance, environmental factors, several drivers of behavioural change, and opportunities for champions. This is a

detailed section in the design evaluation culminating with creating ownership that would sustain the project results. The evaluation in the Inception Report noted the lack of consideration of these factors in the project design and the weak connection between rapid test cases and country ownership leading to a global catalytic role. Design Quality score: Moderately Unsatisfactory		
Catalyzed behavioural changes. Use and application by stakeholders of: approach; strategic programmes and plans developed; and assessment, monitoring and management systems established at a national and sub-regional level	Possibly a few cases, but overall focus was a global framework which has not been widely taken on; national management systems have not been developed at this level	U
Incentives. Social, economic, market based, competencies to change behavior	Research and demonstration—no real incentives expected or in play	MS
Institutional changes. Uptake or mainstreaming of project approach	Fact bases are not operational for stakeholders or major institutions	U
Policy changes. Plans and implementation	Some sense of CCA shifting to economic planning from an environmental issue, but not specific policy impacts	S
*Catalytic financing. S*ustained follow-on financing from Governments, the GEF or other donors	Not apparent, but insufficient information to judge	*
C*hampions*. Opportunities for individuals or institutions to catalyze change	A few seem to promote the approach especially in the risk management community; but not a wide range of proponents or champions	MU
Overall rating for Catalytic Role	(average of above)	**MU**
Overall rating for Sustainability and Catalytic Role		**MU**

* No score provided

17.3 Design Quality and Processes Affecting Attainment of Project Results

Design Quality and Processes Affecting Results		
*** Governance and supervision arrangements:** This is a short section about the overall structure of the project, roles and supervision. The Inception Report noted that a Steering Committee was mentioned but few details are mentioned in the project preparation or subsequent documentation. Design Quality score: Moderately Unsatisfactory		
Preparation and Readiness	**Evaluation Comments**	**Rating**
Project *objectives and components clear*, practicable and feasible within timeframe	Objectives were clear although the absence of a practical theory of change meant they were not very practical; more like aims	MU
Capacities of executing agencies properly considered; adequate project management arrangements; counterpart resources (funding, staff, and facilities) and enabling legislation assured	Some reports of a rush to approve the project at a high level that did not take on board many of the concerns of technical staff within the ECAWG, and this became apparent in writing the final report; not so much capacity as conflicting views and leadership	MS
Project document clear and realistic to enable effective and efficient implementation; partnership arrangements identified and the roles and responsibilities negotiated	The document was pretty high level and did not anticipate many of the technical issues or concerns across stakeholders	MS
Counterpart resources, enabling legislation and local management relations	This was a difficult project to manage although the need to work with multiple stakeholders were noted, this was mostly to provide feedback on work by the consultants rather than shape the methodology	MS
Lessons learned and recommendations from Steering Committee meetings integrated in the project approach; lessons from other relevant projects incorporated in the project design	The design was a port of a mitigation-oriented methodology to CCA and DRM and did not adequately capture the wealth of development experience, methodological concerns related to community-based and ecosystem-based adaptation;	U

	Steering Committee did not appear to be effective, but only one trip report was available for review	
Other factors that influenced the quality-at-entry of the project design, choice of partners, allocation of financial resources etc.	Driven by a single consulting company	MU
Overall rating for Preparation and Readiness	(mid-way in the average)	MS

Design Quality and Processes Affecting Results		
Implementation Approach and Adaptive Management		
* **Management, execution and partnership arrangements**: This short section includes criteria as to whether the capacity of the partners in the project has been assessed with clear arrangements for execution. The Inception Report noted that the capacity of the team was not identified and roles within UNEP were not adequately agreed. Design Quality score: Moderately Unsatisfactory		
Implementation mechanisms followed and effective in delivering project outputs and outcomes; adaptations made to the approaches originally proposed	Given the methodological concerns, disagreement within the ECAWG and shortcomings in the design, the project did produce a relevant output, mostly on time	MS
Role and p*erformance of units and committees* established and the project execution arrangements	Steering Committee seemed ineffective and much of the final report was left to an intense period of negotiation prior to its launch	MU
Effectiveness and efficiency of *project management*	Not evaluated in detail due to insufficient reporting	MS
Extent to which project management responded to direction and guidance provided by the *Steering Committee* and	As there were strong views of the methodology and McKinsey's 'selling' of the TCR framework, it is doubtful the SC	MU

recommendations	would have been effective	
Administrative, operational and/or technical problems and constraints that influenced the effective implementation of the project, efforts to overcome these problems in a timely manner	Project delivered the product—a report—and overcame final hurdles	MS
Recommendations were followed	Recommendations from the SC, ECAWG, project sponsors and additional stakeholders are not recorded in sufficient detail to evaluate	*
Overall rating for Implementation Approach and Adaptive Management	(average for ratings)	MS
Stakeholder Participation and Public Awareness		
Approaches used to identify and *engage stakeholders* in project design and implementation; strengths and weaknesses of approaches; degree and effectiveness of collaboration and interactions between the various project partners and stakeholders	Design was given by the lead consultant and did not reflect a stakeholder process (other than the sponsors) or evaluation of alternative approaches	U
Degree and effectiveness of *public awareness* activities during the project; assessment methods that raise public awareness	The launch generated much excitement at the time, but this was not a public awareness project and test cases do not appear to have been picked up in public media	MS
Results of the project engaged *key stakeholders* in climate change adaptation strategies	Engaged in the sense that it stimulated great debate for awhile, but not a sustained impact	MS
Overall rating for Stakeholder Participation and Public Awareness	(dropped low score)	MS

Country Ownership and Driven-ness		
Governments assumed responsibility for the project and provided adequate support to project execution, cooperation from contact institutions; timeliness of provision of counterpart funding	Not intended to be directly adopted by national governments (test cases are not country driven applications)	U
Political and *institutional framework* of the participating countries conducive to project performance	Policy institutions mostly did not implement the framework—they tend to use cost-effectiveness, least cost or multi-criteria assessment in their analyses	MS*
Governments promoted the *participation of communities* and their non-governmental organisations in the project	Project did open up a debate about economic policy at a more global level, not a major focus of the very short test cases but also not easy to do given the very technical framework	MU
Governments responsive to the project coordination and guidance and to UNEP supervision	Not country-driven in usual GEF way, no real government role for climate or GEF focal points	MS*
Overall rating for Country Ownership	(average, but difficult to score)	MU

* Difficult to assign a score given design of the project.

Design Quality and Processes Affecting Results		
Financial Planning and Management		
*** Financial planning / budgeting:** The criteria focus on obvious deficiencies, resource utilization and administration of the funding. The Inception Report noted that the project leveraged considerable finance beyond the GEF, but also that it was an expensive project and insufficient information available to judge cost-effectiveness or administrative arrangements. Design Quality score: Moderately Unsatisfactory		
Proper standards (clarity, transparency, audit etc.) and timeliness of financial planning,	Nothing has surfaced	S

management and reporting		
Administrative processes such as recruitment of staff, procurement of goods and services (including consultants), preparation and negotiation of cooperation agreements etc. that these might have influenced project performance	Nothing has surfaced although UNEP did not lead on staffing and financial management (done by McKinsey)	S
Co-financing materialized as expected at project approval to support project components	Considerable co-financing	S
Resources leveraged (beyond time of approval); contribution to the objectives	Considerable co-financing	S
Overall rating for Financial Planning and Management		S

Design Quality and Processes Affecting Results		
UNEP Supervision and Backstopping		
*** Relevance:** This is a long section in the design quality review, including the fit of the project ot UNEP's programmatic framework; much of this is not relevant to the criteria below. The Inception Report noted that the project predates UNEP's current framework, although it would still be relevant. Design Quality score: Moderately Satisfactory.		
Adequacy of *project supervision* plans, inputs and processes	Some internal issues between divisions	MS
Outcome monitoring (results-based project management)	Not put in place	MU
Realism and candour of *project reporting and ratings* (i.e. PIR ratings an accurate reflection of the project realities and risks)	Ratings are rather optimistic although narrative has interesting comments	MS
Quality of *documentation of project supervision* activities	Project spanned two desk officers and documentation is not complete	MU
Other financial, administrative and fiduciary aspects of project implementation supervision	Nothing to note	MS

Overall rating for Relevance	(average of above)	MS

Design Quality and Processes Affecting Results		
Monitoring and Evaluation.		
*** Monitoring:** Criteria include the extent to which the logframe builds on the Theory of Change to identify indicators and milestones, along with the nature of the baseline and plans for monitoring the project. The Inception Report noted that there is very little discussion of M&E in the project design and did not provide a rating. However, following the Inception Report, the GEF EO provided additional documentation that includes the results framework and M&E plan. These are evaluated below.		
M&E Design. Projects should have sound M&E plans to monitor results and track progress towards achieving project objectives. An M&E plan should include a baseline (including data, methodology, etc.), SMART indicators and data analysis systems, and evaluation studies at specific times to assess results. The time frame for various M&E activities and standards for outputs should have been specified.	{The detailed criteria below are used.}	
Quality of the project *logframe* as a planning and monitoring instrument; analysis of logframe in Project Document, as revised and in Project Implementation Review reports to report progress towards achieving project objectives	Logframe contains rational for project but not a clear baseline or targets	U
SMART indicators: specific indicators in the logframe for each of the project objective that are measurable, attainable (realistic), relevant and time-bound	Not implemented	U
Adequacy of *baseline information*: baseline performance indicators collected and presented; methodology for baseline data	Some sense of the context but not a measurable baseline	MU

explicit and reliable		
Arrangements for monitoring: responsibilities for M&E activities clearly defined; data sources and collection instruments appropriate; frequency of monitoring activities specified and adequate; project users involved in monitoring	Not identified (assumed to be McKinsey?)	MU
Arrangements for evaluation: specific targets specified for project outputs; desired level of achievement specified for all indicators; adequate provisions in the legal instruments binding project partners to fully collaborate in evaluations	Only a general sense	MU
Budgeting and funding for M&E activities: adequate and timely during implementation	Included, although a rather small amount given the scope of the project	MS
Overall rating for Monitoring	(average of ratings)	MU

Design Quality and Processes Affecting Results		
*** Evaluation:** Similarly to the above, criteria concern plans and resources evaluation. The Inception Report noted that a small budget was indicated for evaluation but no specific plan. As above, the additional documentation on the project warrants a revision of the evaluation ratings. Design Quality score: Moderately Unsatisfactory		
M&E Plan Implementation. M&E system operational and facilitated timely tracking of results and progress towards projects objectives throughout the project	Plan was not adequate for implementation	MU
Annual *project reports* and Progress Implementation Review (PIR) reports complete and accurate with well justified ratings	Short project, only one PIR report at the end	MS
M&E system was used during the project to *improve project performance* and to adapt to changing needs	No indication that the M&E plan was tracked to adjust project design and final report	MU

Parties responsible for M&E had an *M&E system* in place with proper training, instruments and resources	Not covered but most of the ECAWG should have some procedures in place	MS
Overall rating for Evaluation	(greater weight for first rating)	MU

17.4 Complementarity with the UNEP strategies and programmes

Complementarity with UNEP Strategies and Programmes		
*** Relevance:** This is a long section in the design quality review, including the fit of the project to UNEP's programmatic framework—captured below in only two criteria; gender and south-south cooperation are not explicit in the design criteria. The Inception Report noted that the project predates UNEP's current framework, although it would still be relevant. Design Quality score: Moderately Satisfactory.		
	Evaluation Comments	**Rating**
Linkage to UNEP's Expected Accomplishments and POW 2010-2011. Tangible contribution to any of the Expected Accomplishments specified in the UNEP MTS.	Project was finished before this programme of work, doesn't appear to have influenced the programme greatly	S
Alignment with the Bali Strategic Plan (BSP).	Nothing that contradicts the BSP but not a priority in the project	S
Gender. Extent project design, implementation and monitoring have taken into consideration: possible gender inequalities in access to and the control over natural resources; specific vulnerabilities of women and children to environmental degradation or disasters; and the role of women in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation. Lasting impacts on gender equality and relationship between women and the environment.	Costs and benefits are not broken down by gender although there is a very strong case that this should be acknowledged; strategies and measures indicated do not include a gender criteria	MU
South-South Cooperation. Exchange of resources, technology,	Project was driven by a global consulting company with no real	MU

and knowledge between developing countries.	evidence of consultants or organisations in developing countries have significant input (other than being cited in the test cases)	
Overall rating for UNEP Complementarity	(average of above)	MS

18 Annex 10. Evaluation of Three Test Cases

- The evaluation looked more closely at three of the 'test cases' developed by the ECAWG: Maharashtra, India; Samoa and Tanzania. The test cases were chosen to represent different conditions in developing countries, from a small island state where the impacts of sea level rise and typhoons are already noticeable to the development prospects of a semi-arid region recently tested by a major drought. The test cases were evaluated in a similar way as above:

    - Decision makers and experts in each region were sent the global survey form
    - Experts in each region reviewed the test case, documented any impacts in policy documents in each region, and interviewed key people in each region
    - The lead evaluator reviewed the reports from each test case
- A summary of the evaluations of each test case is presented here.

18.1 Maharashtra, India[11]

18.1.1 Introduction

- Pressures on farmers in Maharashtra have received much attention in the last couple of years. According to India's National Crime Records Bureau (NCRB), Maharashtra accounted for well over a fifth of the 14,027 farmer suicides in India in 2011. Farmers decided to end their lives when crops failed due to heavy rains or droughts and household debts became too much to bear. Just between September 10th and 12th 2012, seven farmers committed suicide because their crops perished -- primarily soya and cotton -- due to heavy rains in the Vidarbha district of Maharashtra. Their names were repeatedly announced on various news bulletins in India –Dhayneshwer Thakary, Pramod Mamankar, Kanikrao Kukade, Vitthal Bhogare, Shyam Sahare, Doulat Kukade and Chakradhar Choudhary. Since 1995, close to 50,000 farmers have taken their own lives in Maharashtra (NCRB). Maharashtra suffered three years of drought between 2000 and 2004. The droughts impacted over two thirds of the population of the state. Crops perished, cows and goats died and families felt compelled to migrate to towns and cities in search of jobs.

- This dire background—the names of the seven farmers—served as preparation for interviews with the targeted audience of the Maharashtra test case as part of the terminal evaluation of the Economics of Climate Adaptation (ECA) project. Did the ECA report leave us any wiser on how much money is needed to ensure that farmers don't kill themselves in Maharashtra?

- Farmer suicides received a lot of media attention. The State Government denied and massaged the statics – they even re-defined what it means to be a 'farmer' – it was simply the poor rather than farmers who were killing themselves, they argued. The suicides of farmers would suggest even deeper and complex policy problems. Irrigation schemes were approved. Seed subsidies were offered to refute allegations that heavy debts incurred to buy seeds of genetically modified cotton and not just droughts were the cause

[11] VikromMathur contributed to the evaluation of the Maharashtra test case.

of farmer suicides. Understanding the 'economics' of adaptation to potential rise in droughts and floods as a result of climate change in Maharashtra is a hot issue. Even the National Human Rights Commission in India is interested in the economics of climate change in Maharashtra and has sought explanations from the State Government.

18.1.2 Approach

- An analysis of the 'economics'– the costs of potential damage and economic analysis of adaptive interventions -- to current and future risks of droughts in Maharashtra should have received attention in the scientific and policy communities in India. The ECA report should have raised awareness and influenced concrete decision-making. To find out if it did, the interviewer used a snowball sampling strategy for identifying individuals who were likely to be familiar with the ECA project. It began by contacting 'elite informants' in 12 key organizations in India including: Tata Energy Research Institute (TERI); International Water Management Institute (IWMI); Development Alternatives (DA); Indian Institute Technology (IIT); International Food Policy Research Institute (IFPRI); Indian Institute of Tropical Meteorology (IITM); International Development Enterprise (IDE India); Indian Meteorological Department (IMD); Ministry of Agriculture (retired Secretary); Swiss Re India and Indian Institute of Sciences (IIS). All of these organizations work in Maharashtra on the linkages between food, water and climate change. Individuals within these organizations were also mentioned as stakeholders in one or the other way in the ECA report (the ones named in the ECA report were sent the online survey as well).

- First contact with the respondents was by email. The email message provided a brief background of the project – its aims, outputs and key actors involved in the analysis. It described the key components of the project and requested an appointment for a telephone interview. The interview would focus on the project components: (i) the analytic fact base on the economics of adaptation and a synthesis of lessons learned from existing experience; (ii) financing models and approaches and associated consultations from the public and private sector and (iii) decision support tools to help a broad range of decision-makers understand trade-offs between adaptation measures as they develop adaptation strategies.

18.1.3 Findings

- Of the fifteen elite respondents contacted, only five responded. Three of those who responded said that while they had heard about the project (were vaguely familiar) and were spoken to/consulted at some point in the project, they had not seen the final report or the outputs of the project. These included IWMI, IDE India and IFPRI. They saw no value in engaging in a conversation about the project.

- TERI is currently leading a large initiative and flagship project on assessing climate change vulnerability and adaptation strategies for Maharashtra state (http://www.ccmaharashtra.org/). The project is being implemented in partnership with the UK Met Office. The Department of Environment of the Government of Maharashtra is the 'nodal agency'. The TERI projects documents argue that Maharashtra is particularly vulnerable to climate change because of its high dependency on rain-fed agriculture and the presence of a long (840 KM) coastline, which includes the dense city

of Mumbai. Potential climate change related impacts could include changes in temperature, precipitation pattern, increase in the frequency and intensity of extreme events including droughts, floods, cyclones, storm surges and heat wave occurrence (website, accessed on 1st October 2012). The TERI project was initiated in April 2010. The ECA project was finalized in 2009 with a global launch in 2010. In a round of email exchanges it became clear that senior members of the TERI project team had not even heard about the ECA case study or seen the final report – let alone drawn on it any substantive way.

- Professor Anand Patwardhan at IIT Mumbai is a leading adaptation expert in India. He is very well connected with the climate change research community in India and abroad. He is a Maharashtrian and based in Mumbai and is part of both national level (in India) and State level (in Maharashtra) policy processes around adaptation. He is also involved in adaptation initiatives funded by the Global Environmental Facility as a key member of the STAP. Anand was unaware of the McKinsey report. He also pointed out that a World Bank (WB) funded project on economics of adaptation was finalized in 2011 and the WB project also did not draw extensively on the McKinsey report. He confirmed that after Copenhagen, all States in India have been asked to do State level action plans – including costing of strategies for adaptation. But nothing from the ECA report seems to have seeped through to the Maharashtra state plans.

- A major shortcoming of the overall scope of the India test case was that the analysis was only focused on generating very aggregate values of economic losses in agricultural production. Costs of social, environmental and health impacts were not elaborated. The scope was further narrowed by focusing only on the impacts of droughts on agriculture and a host of other potential impacts, for example, the impacts on infrastructure in Mumbai as a result of sea level rise were not studied. In the narrow domain of 'droughts-agriculture' only a limited set of easily quantifiable strategies for protecting agriculture from drought were considered, for example, *"improved fertilizer application, and wider use of mechanical and electronic timers to improve the effectiveness of irrigation"* (ECA, 2009: p. 11).

- Methodologically, the project sought insights from local case studies, and not to use bottom-up evidence in a global synthesis. Rather, the case studies were to validate a global framework to see if it was generalizable over a range of adaptation situations. The final ECA report highlights that the *"objective in the cases was to test and refine the framework, rather than to provide complete answers on adaptation strategy for the locations studied"* (p. 31). The ECA report is unable to claim much credit in the way of providing a rigorous analysis of adaptation impacts, costs and strategies at the level of case studies and was therefore of less interest to State and national level decision makers. Production of a universal framework for the analysis of economic of adaptation rather than providing insights about adaptation in case study areas was the ECA's primary objective. Such an analysis is highly unlikely to be of direct policy relevance in the case study area even if stakeholders in India and Maharashtra had actually heard about the report.

- One potential reason for the 'silence' about the report could be that the evaluation comes almost 3 years after the report was first released. The project might simply have dropped

off the radar screen of busy professionals or some of these professionals might have moved to other positions. It is impossible to provide a more nuanced analysis of the impacts of the project or answer any questions about the merits and failing of specific components of the projects. It would be safe to conclude that the project and its outputs have not had any lasting impact on addressing the question of the economics of climate adaptation. Certainly not in Maharashtra or India. The report did not manage to raise awareness and contribute to research and analysis. The objective of being used in concrete decision-making at the state or national level was not met by a long shot. The project did not seem to have had an internal monitoring system and to claim that the outputs of the project were likely to directly impact decision making in the case study areas was perhaps flawed to begin with.

- Summary rating:

    - Soundness of the methodology as applied to the case study: Unsatisfactory, due to a narrow focus and lack of consideration of the other decision factors and processes at the state level in India.
    - Impact among decision makers in the test case area: Unsatisfactory, virtually none, no references in policy documents and little awareness of the report, data sets are not available.
    - Influence on investment decisions and finance: Moderately Unsatisfactory, investment planning has proceeded but with little if any reference to the ECA study.

18.2 Samoa[12]

18.2.1 Introduction

- Samoa has had a long-standing interest in ensuring that it is effectively adapted to the impacts of climate change. This has translated into assessments undertaken through its National Adaptation Program of Action (NAPA) (NTT 2005) and national communications to the UNFCCC (first and second). Importantly, Samoa identified climate change as one of its five national priorities in its discussions with Australia on bi-lateral development assistance, which aims to "provide climate change assistance to support Samoa monitor the impacts of climate change, provide adaptation measures for vulnerable communities and develop viable options for renewable energy" (AusAID 2012)[13]. Consequently, climate change has been a clear national priority and, as a result, Samoa has been successful in receiving support for its climate change adaptation priorities, as specified in its NAPA[14].

[12]The Samoa evaluation was supported by Robert Kay and Carmen Elrick-Barr of Adaptive Futures. They are specialists in sea level rise and coastal zone management and have extensive experience in the region.

[13] The Partnership Priority Outcome on Climate Change initially focuses on ensuring a coordinated approach to the analysis, scoping and design of measures to: monitor the impacts of climate change on health, agriculture and food security; develop adaptation measures for vulnerable communities, including coastal infrastructure and development of early warning systems; and develop viable options for clean and renewable energy.

[14]The NAPA priorities include: 1. Securing Community Water Resource Project; 2.Reforestation, Rehabilitation and Community Forestry Fire Prevention Project, 3.Climate Health Cooperation Program Project; 4.Climate Early Warning System Project; 5.Agriculture and Food Security Sustainability Project; 6.Zoning and Strategic Management Planning Project; 7.Implement Coastal Infrastructure Management Plans for Highly Vulnerable

- The interest in climate change adaptation in Samoa was, at least partially, the result of two devastating cyclones that occurred in 1990 and 1991. These cyclones highlighted the exposure of Samoa, and Samoans, to climatic extremes – particularly in the coastal zone. A key component of the donor effort to support Samoa recover from cyclones was the development of Coastal Infrastructure Management Plans, through the Samoa Cyclone Emergency Recovery Project (World Bank Group, 2009). These plans provided the planning, and subsequent investment, in seawalls, roads, bridges and other infrastructure.

- It may be assumed, although this is not explicitly stated in the Economics of Climate Adaptation (ECA) study, that the test case was undertaken in Samoa because of the Government's long standing interest in coastal communities, coastal infrastructure and climate change. Also, given that Samoa was nominated to be a pilot country under the Pilot Program for Climate Resilience (PPCR), with a focus on coastal infrastructure and communities[15], the ECA study was potentially a useful tool to provide input into the PPCR.

- The Evaluation Team explored how the Samoan test case contributed to the achievement of the project objectives of the ECA study, including (i) to increase information for supporting investment choices in adaptation by public and private decision makers, (ii) to improve ability to identify appropriate financing approaches to meet investment needs; and (iii) to increase awareness and knowledge available to private and public decision makers for directing resources towards reducing vulnerability to climate change. In particular, the review sought to examine:

    - The extent to which the project increased information for supporting investment choices in adaptation by public and private decision makers.
    - How successful the project was in improving the ability to identify appropriate financing approaches to meet investment needs.
    - Whether the project increased awareness and knowledge available to private and public decision makers for directing resources towards reducing vulnerability to climate change.
    - The extent the project engaged decision makers in the countries and economic development community in general.
- The review commences with an overview and critical assessment of the Samoan test case, to provide context for the areas of focus outlined above. The methods adopted to complete the review are then outlined, followed by presentation of the review findings.

18.2.2 Review

- The aim of the Samoan test case was to highlight coastal flooding and salinization risks posed by sea level rise, the associated magnitude of projected losses, and measures that could be adopted to reduce the country's vulnerability. The test case confirmed historic exposure and sensitivity to flood risk and salinization in the coastal zone and briefly outlined the approach taken to model sea level risk and salinization risk. The case focused

District Project; 8. Establishing Conservation Programs in Highly Vulnerable Marine and Terrestrial Areas of Communities Project; and 9. Sustainable Tourism Adaptation Project.

[15] The PPCR supported two projects in Samoa, *Enhancing the Climate Resilience of the West Coast Road* and *Enhancing the Climate Resilience of Coastal Resources and Communities*.

on the economic value of impacts and the cost-benefit of select adaptation measures; however, it was noted that social and cultural considerations are an important aspect in adaptation planning, but not captured in the test case.

- The Samoan test case is an interesting application of economic assessment to a small island context. In particular, the key conclusions that adaptation responses based on land-use planning, ecosystem-based approaches and modification of building designs are of interest. However, the many undocumented assumptions and modelling approaches make independent verification of the report difficult. As such, while the conclusions of the test case are interesting in terms of the relative prioritization of measures (shown in Exhibits 4 & 5), the absolute figures from economic assessment cannot be verified due to the various assumptions and methods used.

- Importantly, the published test case is essentially a 'black box' that cannot be repeated without considerably more information regarding the data inputs and methods. For example, quantitative values of cost-benefit ratios are impossible to verify given the lack of costing information and information on the modelling approach. The results can only be assessed, as a result, in relative terms[16]. While this is a common outcome of reports targeted to a broad audience, it is disappointing given that this economic assessment approach may be of value to other Pacific Island Countries and Small Island States. Links to appendices or online sources with full details on the modelling approach adopted could be made available. This would ensure that the test case could be independently verified and that others may draw on the approach adopted, as applicable to their country context. Also, in its current form, the Government of Samoa will not be able to repeat the test case unless it receives considerably more information from the consultants.

18.2.3 Methods

- The approach to the review was as follows:

1. Identify stakeholders in Samoa familiar with the test case. A snowballing technique was adopted, initially drawing on stakeholders listed in the ECA report's acknowledgements as a guide to those who were involved in the test case, supplemented with key climate change adaptation professionals in the country using pre-existing networks.

2. Views were gathered from those stakeholders familiar with the ECA report and the test case, on how the document had been used in national decision-making.

3. If the stakeholder demonstrated awareness of the report and test case, they were requested to complete a survey questionnaire, which gathered information on their exposure of the ECA final report, their views on the achievement of project outcomes and outputs, and overall evaluation of the project. The questions pursued an increasing scale of 'use' for each objective and output of the project, including:

[16] However, confidence in a relative assessment still remains low, given there may be different assumptions built into the costing of different adaptation measures; which are not clearly specified.

- Awareness and access: Were they aware of the project's output? Did they have access to this output?

- Use and application: Did they use the output other than to increase their general awareness? Was the output applied to a particular adaptation decision in their country or at the global/regional level?

- Influence and attribution: Did the output significantly influence their planning or decision-making? Would they attribute the outcome of their decision making to this project? Was it instrumental in making a positive change in adaptation planning?

- A total of 10 in-country stakeholders were contacted to participate in the review. Telephone interviews were the primary mechanism for data collection, due to technical problems accessing the online survey. Of the 10 stakeholders contact, six provided information to inform the review[17]. Importantly, consultees in the Ministry Environment and Natural Resources (MNRE) reported that the emails sent to consultees requesting input to the evaluation had been widely circulated within the Ministry through internal emails.

18.2.4 Findings

- Discussions with country stakeholders, including the Climate Change Focal Point and the CEO of the Ministry Environment and Natural Resources (at the time of the ECA study), uncovered limited awareness of the ECA project. Only one in-country consultee had any awareness of the project, and this was one of only remembering that the project had taken place. The stakeholders consulted had no exposure to, or use and application of, the outputs of the project. Consequently, drawing on the views of stakeholders consulted, it could be argued that the test case had very limited application in country.

- This finding should be considered within the context of a very active climate change adaptation agenda within Samoa. The adaptation investments in country are large (as demonstrated, for example, through the PPCR project and also the numerous projects to implement Samoa's NAPA Priorities).

- With a specific focus on the objectives to be achieved through the ECA project, and subsequently the test case, the following comments can be made.

- **Supporting investment choices and identifying financial opportunities.** While the stakeholder consultations indicate limited contribution of the test case outcomes to informing decision-making (investment or otherwise) in Samoa, document review highlights possible links between the ECA test case and subsequent adaptation investments in Country. The Strategic Programme for Climate Resilience (SPCR) prepared for the Pilot Programme for Climate Resilience (PPCR) February 2011, states (para 29) cited the subsequent work of the World Bank (the EACC):

[17] The interview script is presented in Annex 3, along with a list of people consulted. Four of the stakeholders contacted did not respond to the request to participate in the review.

"Disaster losses can represent a major portion of gross domestic product (GDP) for Pacific Island countries, and thus seriously impede economic and social development. However, the economic impacts of climate change and the costs of adaptation have yet to be assessed comprehensively at the regional and country level in the Pacific to inform national development strategies and investment decisions. The recent Economics of Adaptation to Climate Change (EACC) Samoa Country Study is a notable exception and is proving invaluable for preparation and implementation of the CRIP/PPCR".

- Further, it is noted that the Samoa Case-study of the World Bank Economics of Adaptation to Climate Change (EACC) "*provides background analytical work that supported preparation of the CRIP during Phase 1 of the PPCR*".

- Therefore, according to the PPCR documentation Samoa did draw upon economics studies in the development of adaptation initiatives in country. However, the direct citation is only to the World Bank study and not the ECA project itself.

- **Public and private awareness and in-country engagement.** Drawing on the stakeholder consultations and review of the test case, in-country engagement and awareness raising appears limited. None of those consulted had recollection of the ECA test case and had not accessed the outputs (i.e. Final Report). This is a particular concern given that the test case aimed to demonstrate application of an approach to adaptation planning that could be adopted in country. If key decision makers do not recall the efforts of the project, this would suggest that sustainability of the investments in the initiative are not likely to be achieved.

18.2.5 Conclusion

- The ECA test case did not directly result in transfer of outcomes to inform in-country investment or increase public and private awareness or engagement in climate change adaptation. However, the extent to which the test case aimed to contribute to these objectives is unclear. Drawing on a presentation provided by one of the Consultees to this Review, delivered by World Bank in January 2010 (Cretegny, 2010), the objectives of the Samoa Case Study are summarised as:

    - Review how the country assesses its climate change related hazards and utilizes this information in its planning and investment process;
    - To the degree that there are gaps within the current approach, (i) assist policy-makers in identifying such gaps; and (ii) work with policy-makers to improve their adaptation response through their information base, analytical and related systems;
    - Help the Government of Samoa in the process of using alternative approaches/methods to address its identified climate change adaptation priorities;
    - Illustrate and demonstrate the applicability of the developed methods for (i) integrating climate resilience into development planning; and (ii) identifying ways of obtaining more assistance from donors and lenders to implement prioritized programs.
- Further, it is noted in the January 2010 presentation that the test case was intended as an *illustrative* Strategic Program for Climate Resilience. Conversely, the First Phase of the PPCR would involve formulation of an *implementable/applicable* Strategic Program for Climate Resilience. The presentation further states that given the limited scope of the test

case (3 months investment in comparison to 18 months allocated to the PPCR first phase), it was to remain illustrative.

- While these objectives were not clearly specified in the test case itself (and were obtained via access to unpublished material delivered by a stakeholder consulted during the review), it appears that the objectives of the case have not been delivered in full. Given the lack of awareness of the ECA study, the initial objectives of the Case (to assist and work with policy makers to improve their adaptation response and raise awareness of alternate approaches/methods that could be adopted) appear to have had limited success. Despite this, the outputs of the test case itself (the illustrative example) have contributed to the evidence base that supported design of the first phase of the PPCR, thus contributing to sustained investments in adaptation within Samoa. Whether these investments could have been achieved regardless of the test case, remains unclear.

- Based on these findings, it may be argued that the test case was moderately successful in supporting investment choices and identifying financial opportunities; while it was unsatisfactory in increasing public and private awareness and in-country engagement.

- Summary rating:

    - Soundness of the methodology as applied to the case study: Satisfactory, given the well-documented effects of sea level rise and tropical cyclones in the region
    - Impact among decision makers and engagement in the country: Unsatisfactory, the outcomes were not achieved
    - Influence on investment decisions and finance: Moderately Satisfactory, project may have had some influence and investment planning has moved forward

18.3 Tanzania[18]

18.3.1 Introduction

- The Tanzania test case focused on the impact of drought on health and power generation. More specifically, looking into how the shortages of fresh water cause malnutrition and the spread of cholera and other infectious diseases and the shortfall of power generation caused by shortage of water and consequently the effectiveness of hydro-electric plants. Another opportunity provided by the study was to look into the "total climate risk" framework and methodology to both private sector actor concerns and the larger and nascent research topic of health impacts from climate change.

- The Tanzania test case constructed three climate risk scenarios to 2030 ("today's climate" "moderate climate change," and "high climate change") using 10 downscaling climate change models. It tested the "*hypothesis that the shape of the precipitation distribution curve would vary among the different climate change scenarios"* results from a Regional Climate Model (p. 116). The study then looked into measures to protect against drought-related health risks cases and tried to estimate the number of each disease that would be prevented with each measure. For power generation, the study predicted that Tanzania

[18]The Tanzania evaluation was supported by Mica Longankecker, from the GCAP office in Kenya. GCAP has been working in Tanzania for the past three years on various studies.

"will rely on hydropower for more than 50 per cent of its capacity, with 95 per cent of this hydropower located in the central region" by 2030 (p. 115). It then looked into historical rainfall and its correlation to historical power production at Kidatu, the biggest power plant in the country. For health and power generation, the study used variations of marginal cost curves to assess the cost of climate adaptation.

18.3.2 Methods

- The approach to the review was as follows:
    - Identify stakeholders in Tanzania familiar with the test case using a snowballing technique drawing on stakeholders listed in the ECA acknowledgements as a guide to those who were involved in the test case, supplemented with key climate change adaptation professionals.
    - Views were gathered from those stakeholders familiar with the ECA report and test case, on how the document had been used in national decision-making.
    - If the stakeholder demonstrated awareness of the report and test case, they were requested to complete a survey questionnaire, which gathered information on their exposure of the ECA final report, their views on the achievement of project outcomes and outputs, and overall evaluation of the project. The questions pursued an increasing scale of 'use' for each objective and output of the project, including:
    - Awareness and access: Were they aware of the project's output? Did they have access to this output?
    - Use and application: Did they use the output other than to increase their general awareness? Was the output applied to a particular adaptation decision in their country or at the global/regional level?
    - Influence and attribution: Did the output significantly influence their planning or decision-making? Would they attribute the outcome of their decision making to this project? Was it instrumental in making a positive change in adaptation planning?
    - Review of recent health, power generation and strategic/planning documents in Tanzania (2009 or later) to determine if the study was referenced.
- There are not many stakeholders at the national level in Tanzania who are directly concerned with climate change and would have participated in the ECA project. Eight key stakeholders were contacted to participate in the review, drawing upon extensive networks based on recent projects in Tanzania. Telephone interviews and email were the primary mechanism for data collection. Of the 8 stakeholders contacted, three provided information to inform the review. The review was supplemented by an extended analysis by a leading expert. While this is a small number of stakeholders, their views were consistent with each other and similar to findings in the other test cases.

18.3.3 Findings

- There are several critical issues with the ECA Study that greatly reduce its applicability and usefulness. Starting with the fact that it claims to be something it's not. From reading the study it appears to be a detailed economic assessment based on intensive economic and climate analysis. However, the study offers little useful advice and given the method and approach of the study the results are questionable at best. The study claims that it *"construct[ed] three climate risk scenarios to 2030 ("today's climate" "moderate climate change," and "high climate change"), the study employed 10 downscaling*

climate change models created by various international universities and institutions, all compiled by the University of Cape Town," 9p. 115). However, this is impossible. Contacting the University of Cape Town's Climate System and Analysis Group who are responsible for the Climate Information Portal (the site the ECA study employed for its climate change models) revealed that the consultants didn't engage directly with the University of Cape Town but only used the publically available climate information. Further analysis revealed that the only publically available data on the Climate Information Portal is the baseline data and future projections for 2040 to 2060. It is therefore impossible to use the Climate Information Portal to develop scientifically sound climate risk scenarios for 2030. Additionally, there is no indication in the report how these scenarios were calculated making it impossible to verify the results. If the 2040 numbers were used then there is the potential to greatly inflate the costs and the analysis. Furthermore, looking at the climate scenarios in the Climate Information Portal for Tanzania, there is a discrepancy in how the model results are represented in the ECA study and what the Climate Information Portal actually predicts. The study has rainfall either decreasing or not changing in all three scenarios whereas the Climate Information Portal shows that rainfall will actually vary across Tanzania, with some areas experiencing decreased rainfall and others experience an increase in rainfall.

- As noted in the methodological review above, the economic analysis conducted in the study was too simplistic and used an inappropriate approach to calculate the cost of climate adaptation. The study uses marginal costs curves to assess the economic cost of climate adaptation (see page 118 and 120 of the report). While this is fine for mitigation, it is not suitable for adaptation as adaptation goes beyond technological interventions and includes a wide array of possible actions. It is also not an appropriate method as there are wide ranges of possible future climate scenarios, which must consequently correspond to a range of possible economic costs for adaptation. However, the study only uses one marginal cost curve instead of a range of different curves based on different future climate scenarios. In addition to flaws in the approach taken, the study does not take into consideration existing policies and strategies that the Government of Tanzania has developed and is implementing, which will greatly affect the additional cost of adaptation.

- In general, there was a complete lack of engagement with policy and other relevant decision makers in Tanzania. As such, the study results are rarely sited and many decision makers and country experts do not trust the numbers or the recommendations. This is particularly seen in the fact that the ECA study is not referenced at all in Tanzania's Draft National Climate Change Strategy and Action Plan led by the Government of Tanzania's Vice President's Office. See Annex 5 on Data Sources for a further list of reports and strategy documents in Tanzania and Africa, primarily focused on health and energy, which show if the ECA study is cited.

- A possible reason for the disconnect between the study and policy makers is that the study selected two issues which are not the main focus of Tanzania's climate adaptation strategy. Health is important and a focus in Tanzania but energy and power generation are not, and neither are as important or relevant to climate adaptation in Tanzania as agriculture.

- Overall, the study is too simplistic while claiming to do more than it actually does. For example, much of the electricity impact assessment is based on one power station, Kidatu, and then extrapolates this assessment to the rest of Tanzania. It then uses this one event to explain the future. This is just one example of how the approach creates relationships that are not robust enough or suitable to be extrapolated to the scale in which they are in the study. Furthermore, there is little information actually presented in the study in which to cross-reference and confirm the analysis. Ultimately, the study gives a level of precision on numbers and estimates that is not justified or justifiable. This makes it almost meaningless to use the study's results in any future planning as the reliance on such numbers could have enormous implications.

18.3.4 Conclusion

- The ECA test case did not directly result in transfer of outcomes to inform investment or increase public and private awareness or engagement in climate change adaptation. However, the extent to which the test case aimed to contribute to these objectives is unclear.

- Though the objectives of the case study are not clearly specified in the test case itself, making it difficult to evaluate its success, it appears that the objectives of the case have not been delivered in full. Given the lack of awareness of the ECA study, apparent lack of engagement with key policy makers and the numerous issues regarding the methodology, approach and analysis, it appears the ECA study had limited success. This is probably most obvious in that the test case is not reflected at all in the Tanzania Draft National Climate Change Strategy and Action Plan, which will guide much of the national climate change adaptation strategy and actions for the next several years.

- Summary rating:

    - Soundness of the methodology as applied to the case study: Unsatisfactory, misleading basis for climate scenarios and over-generalised results from limited case studies within the country
    - Impact among decision makers in the test case area: Moderately Unsatisfactory, no references in policy documents and scepticism of the approach
    - Influence on investment decisions and finance: Moderately Unsatisfactory, some investment planning and action plans have been developed, with no reference to the ECA study