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Consideration of funding proposals - Addendum XXVII

Secretariat's assessments

Summary

This addendum contains the Secretariat's assessment of the public sector funding proposals (FP082- FP092 and FP094) submitted for the Board's consideration at its twenty-first meeting.

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Secretariat's assessment of FP082

Proposal name:	Catalyzing Climate Finance (Shandong Green Development Fund)
Accredited entity:	Asian Development Bank (ADB)
Country/(ies):	People's Republic of China
Project/programme size:	Large

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The project will have large impact potential and is conservatively estimated to reduce 2 metric tonnes of carbon dioxide ($MtCO_2$) annually, or 50 $MtCO_2$ in the lifetime of the first generation of projects, in the province in China with the highest energy consumption and coal intensity. The investment criteria, with quantitative and qualitative benchmarks and three rating categories, mirrors GCF investment criteria and aims to maximize the impact of investments	Concessionality from GCF financing needs to be passed down to projects, rather than captured by intermediaries, whether public or private. According to the financial model, using the interest rates, financial structure and cost of capital assumptions presented in the funding proposal, there is little or no risk of capturing the concessionality
There is strong paradigm shift potential, particularly in the transformational finance (most relevantly, private finance) allocation mechanisms in renewable energy, to focus on transformation, impact and leveraging effect	It is important that a minimum amount of private sector financing volume is mobilized at the Shandong Green Development Fund (SGDF) level
Technical assistance funded by the Asian Development Bank (ADB) will finance a project preparation facility and contribute to enhancing the quality of projects at entry while independent bodies will develop and implement green ratings (with the potential to become an alternative to mainstream financial ratings) and conduct monitoring and evaluation	The facility supports long-term engagement between ADB with co-financiers and China to finance a new generation of green infrastructure projects with a higher risk profile; it is essential to understand and share the initial pipeline of transformational urban climate projects as a model for China and potentially for other such facilities globally
Co-financing of 7.3 times the GCF amount, with a financial structure that includes over USD 300 million from international and bilateral finance partners, such as ADB, Agence Française de Développement and Kreditanstalt für Wiederaufbau, another USD 375 million from the provincial government, and more than 600 million in private, institutional and commercial financing. Further crowd-in of private sector finance (equity, loans and re-financing after 5–7	SGDF has no sectoral targets in terms of outcomes or funding allocations. GCF considers it adequate that SGDF remains flexible, as it should be able to react to market developments, for example, by not funding types of projects that become bankable without concessional financing. However, it is important that SGDF monitors and reports on the portfolio balance and acts as needed

years through capital markets) to achieve a leveraging ratio of 5:1 (USD 7.5 billion) through the programme's 20-year lifespan	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. The funding proposal aims to create a USD 1.5 billion climate finance facility, the Shandong Green Development Fund (SGDF). The primary goal is to catalyse finance, in particular private investment, to finance a portfolio of transformative mitigation and adaptation investments needed to implement the climate priorities established in Shandong province's plans and policies. The initial funding will be provided by a mix of international finance institution loans – from GCF, the Asia Development Bank (ADB), Agence Française de Développement (AFD) and Kreditanstalt für Wiederaufbau (KfW) – provincial government funding, and private, institutional and commercial (PIC) finance.

4. SGDF aims to address financial, institutional and technical barriers to developing and funding high-quality mitigation and adaptation projects, specifically:

(a) Limited availability of public finance – SGDF features inflows of PIC finance at both the facility and project level;

(b) Reduced return on investment or higher risks of more climate-transformative investments, addressed through the provision of a level of concessionality and maturities – with potential re-financing – tailored to the project's risk and return profile; and

(c) Difficulties to identify and prepare transformative projects, addressed through a project preparation facility and the identification of key areas of transformation (e.g. sub-funds).

5. GCF is a high-profile partner in the facility not only as the provider of a key volume of concessional financing, but also as a model from which to define the investment strategy and criteria of SGDF, which aims to maximize mitigation and adaptation bymaking transformative investments bankable.

Climate objective

6. Shandong's status as China's top energy-consuming province and one of the most carbon-intensive (coal use being one of the major drivers) combined with its large industrial base and ambitious sustainable development legislation and mandate from the central Government make it an optimal target for the programme in terms of climate impact and transformational potential.

7. Investments will aim to maximize mitigation (75 per cent) and adaptation (25 per cent) impacts across several sectors, in line with Shandong's mitigation and adaptation policies. The climate impact will be ensured through the application of the investment criteria indicators of SGDF. The indicators are based on the GCF investment framework (most of them with sector-specific quantitative benchmarks tailored to China) and designed to promote projects with state-of-the-art levels of emission reductions and cost-efficiency within their sectors, high paradigm shift potential (in terms of innovation, knowledge generation, or creation of an enabling environment) and environmental, social and economic co-benefits. ADB will mandate 50 per cent of the fund's resources be allocated to advanced practice projects and 25 per cent to transformational projects achieving benefits exceeding current good practice in China.

8. Target portfolio allocations within mitigation and adaptation (see page 16 of funding proposal) are based on carbon emissions and potential beneficiaries. Due to SGDF being a Fund, allocation among sectors within mitigation and adaptation is not defined.

9. Due to the factors above, the Secretariat considers the SGDF investment strategy to be fully aligned with the GCF investment criteria and conducive to maximizing climate benefits. The quantification of investment criteria is an ambitious step based on available research, which may however fail to match the reality on the ground. It is recommended that initial benchmarks are revised in the first phase on the basis of the information available and expert judgment and alongside the indicators for green finance in China and underlying methodology detailed in annex 14.1.

Financing information

10. GCF will contribute USD 180 million to SGDF (12 per cent of the facility) through ADB and the Shandong government-owned Shandong Investment Holdings Group (SDIHG). Approximately USD 300 million will be provided by other international donors (USD 100 million from ADB; EUR 175 million from AFD and KfW), with USD 375 million from the provincial government, and the remaining USD 656 million to be contributed through private sources mobilized by SDIHG and Tongfang, a high-tech firm linked to Tsinghua University that will also invest as a key partner in the facility. The provincial government will cover any shortfall from the private sector side; however, the Secretariat understands that a high level of funding commitments has already been secured.

11. SGDF will provide concessional financing totalling between 10 and 40 per cent of the capex for the subprojects, based on the rating of the proposal against the investment criteria, resulting in a lower average cost of capital for projects achieving transformational/best practices (5.1 per cent) relative to those with merely good practices (5.8 per cent). This is considered a good mechanism to both promote projects of the transformational type, which may have higher upfront capex needs, and avoid crowding out private finance for non-transformational climate projects, which may have happened anyway with little or no need for concessional finance.

12. The remaining debt and equity finance will be provided by the project sponsors and the local financial landscape. It is expected to achieve a leverage ratio of 5:1; that is, USD 7.5 billion of private finance. SGDF will achieve leveraging of private finance from commercial and institutional investment at both the programme and project levels in the initial capitalization phase and further re-financing through capital markets after the SGDF exit (e.g. through green bonds).

13. SGDF tenors will be no longer than 10 years, after which the projects can be re-financed with PIC funds. This allows SGDF to target the higher-risk period of the projects and exit them once a steady commercial stage is reached, leaving them able to finance new projects.

14. All funds from GCF and other international finance institutions (IFIs) will be disbursed in the first five years. Re-flows from projects, which will start in year five of the projects, is in part returned to IFIs, as per the loan agreement, and in part revolved and applied to finance additional climate projects, leveraging further private sector capital.

2.2 Component-by-component analysis

Component 1: Financing

Sub-component 1.1: Financing Direct investments: (total cost: USD 1,190 million; GCF contribution: USD 180 million)

Sub-component 1.2: Financing of municipal and sectoral sub-funds (total cost: USD 300 million; no GCF funding)

15. Eighty per cent of the funding of SGDF will be invested directly in mitigation and adaptation projects across several sub-sectors, in line with the financing guidelines and criteria outlined above,

prioritizing projects achieving transformational and best practices. GCF financing will target solely this component.

16. The remaining 20 per cent will be invested in sub-funds for:

(a) Three key municipalities (Qingdao, Jinan and Yantai, totalling 21.3 million people) designated low-carbon cities, with an accelerated timeline for their emissions to peak (between 2020 and 2025, compared with the provincial goal of 2027, and China's overall goal of 2030); and

(b) Transformational climate businesses that accelerate innovation in sectors identified as critical to meeting mitigation targets, including construction (e.g. through pre-cast concrete building solutions to increase climate resilience and energy efficiency of buildings), new energy sources (including a hydrogen fuel research and industry hub), or transportation.

Table: Description and size of the SGDF sub-funds

Sub-Funds	Investee Fund Size (Million CNY)	SGDF Investment (Million CNY)	Climate Focus
Jinan Municipal Fund	500	100	Climate investment to support Jinan's early CO_2 peaking around 2025
Qingdao Municipal Fund	500	100	Climate investment to support Qingdao's early CO_2 peaking around 2020
Yantai Municipal Fund	500	100	Climate investment to support Yantai's early CO_2 peaking around 2020
New Energy Fund	3,000	200	Value chain of new energy sector, such as new energy vehicles, low-carbon logistic, fuel switch, distributed solar and wind power, integrated urban renewable energy projects
Green Transport Fund	1,500	300	Rail transit equipment, public transportation such as urban light rails and new energy vehicles
Green Building Fund	2,000	400	Prefabricated green buildings and building energy efficiency
Green Engine Fund	2,000	400	Industrial transformation towards climate friendly industries
Green Technology Fund	2,000	400	High and green technology transfer to Shandong

17. Sub-funds will be managed by separate fund managers but will be based on the same principles and criteria as the core SGDF fund, taking a more programmatic approach in developing key sectors. The chosen sectors reflect considerable ambition and are viewed as having a strong transformational potential beyond the scope of the programme, which in the Secretariat's view justifies the risk profile of the investments. The Secretariat will not contribute funding to the sub-funds.

18. SGDF regulations will ensure that neither the main fund nor the sub-funds will finance projects involving fossil fuels.

Component 2: Project development (total cost: USD 3.5 million; no GCF funding)

Component 3: Knowledge and capacity development (total cost: USD 6.4 million; no GCF funding)

Component 4: Policy development (total cost: USD 0.1 million; no GCF funding)

19. SGDF will feature a USD 10 million technical assistance programme funded by ADB that will cover the cost of:

(a) A project preparation facility to review and advise on promising projects, improving their climate and social impacts, and helping project sponsors finalize the funding proposals;

(b) Procuring an independent firm to implement the green rating system and applying it to the assessment of each project and sub-fund against the investment criteria;

(c) Procuring an independent firm to implement the monitoring and evaluation system, conduct verification of completed projects, and report on post-evaluation through impact studies; and

(d) Additional knowledge, training and capacity-building needs.

20. The Secretariat views the technical assistance programme as an adequate mechanism to improve quality at entry, guarantee fair and transparent assessments and independent monitoring, minimizing the risks of fund mismanagement. Elements such as the green rating system are innovative and have the potential, if gradually mainstreamed, to contribute to a shift in the climate impact of investments in China.

Implementation arrangements and flow of funds

21. GCF funds, along with those of other international finance institutions, will be provided by ADB to the Government of China through a sovereign loan and on-lent to SDIHG through the Shandong provincial government. SDIHG will then provide the loan proceeds to SGDF via a limited partner agreement defining the setup of the fund and the loan and capital commitments from the limited partners. The loans from IFIs to SGDF will be kept under separate bank accounts and be drawn from at the time of investment. Liquidity will be managed through investment in AAA-rated climate or green bonds, ensuring uncommitted funds at a given moment have a positive environmental impact. Debt service will be paid back by lenders to SGDF, and from SGDF to the IFI, including GCF, as per the respective loan agreements.

22. SGDF will be overseen by the SDIHG board of directors. SDIHG is participated by the Shandong Provincial Development and Reform Commission (40 per cent), State-Owned Assets Supervision and Administration Commission of Shandong Province (30 per cent) and Shandong Provincial Social Security and Pension Funds (30 per cent). SDIHG will be a co-general partner, with the other general partner to be procured through a competitive process.

23. Proposals will undergo peer review by sectoral experts and review by management and the investment committee.

III. Assessment of performance against investment criteria

24. The performance of the programme against the investment criteria will depend on the subprojects that get financed. The assessment below is based on conservative estimates of the portfolio and the investment strategy presented in the funding proposal.

25. As indicated above, the combination of an investment framework that closely matches GCF (favouring impact and transformative potential, with quantitative and qualitative benchmarks, progressive financial incentives for more transformative/best practice projects), the relevant mitigation and adaptation potential and needs in Shandong, and the size and leveraging capacity of the SGDF, give the proposal a high rating across all investment criteria.

3.1 Impact potential *Scale: High*

26. SGDF targets a 75 to 25 per cent distribution of its funding between mitigation and adaptation. Based on these figures, on preliminary project design data from project developers and literature reviews, the programme is expected to reduce greenhouse gas emissions in the energy, buildings transport and land-use sectors by a minimum of 50 million tonnes of cabon dioxide equivalent (tCO_2eq), as a highly conservative estimate, or 2 million t annually for an average project lifespan of 25 years.

27. In terms of adaptation, the effects of climate change are already experienced in the form of impacts from extreme weather-related events. In the 2010–2015 period, floods and storms, droughts and snow resulted in 83.69 million affected people and 524,000 damaged houses, with a direct economic loss of nearly USD 8 billion; an average 1 to 3 per cent of gross domestic product has been lost since 2000 as a result of weather-related extreme events. Climate models predict higher temperatures (0.5–1.3 °C by 2020, and 1.5–2.7 °C by 2050), rainfall (by ~4 per cent in 2020, and 9–12 per cent in 2050), and more frequent extreme rainfall events. An estimated 10 million to

14 million people could benefit from reduced impacts of climate change, particularly heat islands in cities, floods, droughts and impacts on the province's 3,000-kilometre coastline.

3.2 Paradigm shift potential *Scale: High*

28. The programme aims to achieve a major shift in the way that public and private finance is allocated, making climate projects a bankable investment for private, commercial and institutional investors, and therefore contributing to achieving the mitigation and adaptation targets defined by the province. The financial structure of SGDF and its investment framework (aimed at providing a relatively small level of public concessional finance to make investments viable, while crowding in, rather than out, private finance) is a departure from traditional models of public investment in mitigation and adaptation, increasing the leverage and climate effectiveness of limited public funding. The crowd-in of private sector financing is made possible fundamentally by reducing early stage risks and overall cost of finance.

29. The proposed sub-funds that will be part of SGDF, which are not funded by GCF, address specific sectors with a high paradigm shift potential, proposing innovative solutions. While inherently risky, they represent a major effort to develop industry hubs in sectors (such as energy technology or transport) where a strong policy push and a critical mass of investment is needed to generate the enabling environment for investments to happen. Combined with the participation of high-tech firms with links to China's top environmental engineering schools (Tsinghua University), these programmes have a strong upside, with the chance to generate innovations with global impact.

30. Another innovative element of the programme is the adoption of green ratings that will provide an alternative to the usual financial ratings under which projects are traditionally appraised. The ratings will be carried out by an international rating agency to be procured. While barriers to the adoption of green ratings beyond the scope of the programme are expected, the piloting of green ratings may help generate valuable information that facilitates their gradual development and adoption in other regions. Relatedly, the introduction of international green standards in the Chinese context can also help move the growing Chinese green bond market towards stricter standards, enhancing their climate impact, as it can help pave the way to leveraging private sector investment nationwide.

31. Lessons learned in Shandong have a strong potential to be replicated both in China (where the active involvement of the Provincial Development and Reform Commission is indicative of high-level interest at the national level in the results of the programme) and in the wider region. ADB is strategically working on the replication of the programme through the region, including in Indonesia and other countries that are part of the Association of Southeast Asian Nations, with the potential to unlock large amounts of private investment in climate change in Asia.

3.3 Sustainable development potential *Scale: High*

32. In the context of Shandong (with high levels of air, water and soil pollution driven by large-scale use of coal, motorized transport and industrial development) the proposed investments in the areas of energy generation, distribution and efficiency, or transportation have a strong potential to yield relevant environmental co-benefits. Expected co-benefits include the displacement of around 19 million t of coal, resulting in the reduction of 162,213 t of nitrogen oxide and 141,221 t of sulphur oxide. Co-benefits will be explicitly considered when rating proposals, thus rewarding proposals (such as those related to water and waste management) that use the most environmentally and socially friendly alternatives. Biodiversity benefits, albeit not quantified, are also expected from investments in re-forestation in coastal areas.

33. The most-relevant social benefits, in addition to increased resilience to climate change, will likely be felt in terms of health, particularly of most vulnerable communities, ensuing from improved water, air and soil quality.

3.4 Needs of the recipient *Scale: Medium-High*

34. Shandong is a coastal province with a low availability of water resources and that is vulnerable to the impacts of droughts, floods and other climate-related impacts. Annual losses from such impacts have exceeded USD 1.5 billion annually over the last five years and are expected to increase in the future.

35. Proposed activities will be encouraged to support specific beneficiary groups identified as particularly vulnerable in national climate or development strategies. Advice in the proposal development stage, funded through Component 2, will support this objective. Each project assessed using the process set out in annex 9 of the funding proposal will be benchmarked against the priority adaptation investment needs of the province as determined by the climate assessment in section C1 and detailed in annex 14.2.

36. The programme's design addresses the province's lack of large-scale public finance, the most substantive need of the province to achieve a large-scale transformation of its economy, through the establishment of a high-profile, country-driven platform that allows the blending of public finance with concessional finance from international finance institutions and that of private sector finance on commercial terms.

3.5 Country ownership *Scale: High*

37. The programme's approach to mainstreaming finance for low-carbon local development is aligned with the country's national climate strategy and priorities, specifically the objectives under the nationally appropriate mitigation actions (NAMA) of China. Coherence with the relevant climate and sectoral policies will be part of the selection criteria of each of the subprojects.

38. The programme has government support at the highest level from the province's strategic economic development body, Shandong's Provincial Development and Reform Commission, which holds the largest stake in SDIHG. This is viewed as a positive sign for the platform to obtain the political backing and visibility necessary to succeed in its goal of harness private sector investment. This mitigates the risk of non-materialization of private sector financing. The provincial government has also committed to financing any shortfall in private investor funding at the facility level.

39. The executing entity for the programme, Shandong provincial government, has a clear mandate from the Government of China to meet the Government's 5-year plan targets, which include green and low-carbon economic development, poverty eradication and support to emerging industries. The implementing agency, SDIHG, is identified by ADB as having a good track record in implementing projects with the public and private record, including other funds. SDIHG has 17 subsidiaries and an equity of close to USD 2 billion. The Secretariat understands that the strong capacity and clear mandate of these agencies should facilitate the implementation and provide the necessary drive for the project to succeed.

3.6 Efficiency and effectiveness *Scale: High*

40. The Secretariat finds the programme to make efficient and effective use of GCF funding. At the subproject level, SGDF will not finance projects that are already bankable, financing instead those that have a viability gap. Projects with better performance against the investment framework will be eligible for more favourable tenors and interest from the SGDF, as detailed on page 7 of the

funding proposal. Cost-efficiency indicators will be based on McKinsey mitigation data for different sectors in China, although it is recommended that they be re-calibrated based on the reality on the ground.

41. GCF funding will represent only 12 per cent of the SGDF capitalization, with the remaining 88 per cent coming from other IFIs (ADB, AFD and KfW with over 20 per cent of the total[1]), Shandong's provincial government and the private sector. The co-financing ratio is thus 7.3:1. Further, SGDF is expected to leverage five times its funding (USD 7.5 billion) over the 20-year lifespan, including revolving and reinvested funds. In total, GCF would help unlock an amount of investment over 40 times the size of the GCF funding, acting as a catalyser for transformative investments.

42. As a result of this leveraging effect and the strong mitigation potential in the province, and considering a conservative mitigation potential estimate of 50 million tCO_2eq, the cost per t for the GCF would amount to USD 3.3 USD/tCO_2eq, or USD 33/tCO_2eq for SGDF as a whole. This figure makes it one of the most cost-efficient GCF funding proposals to date.

43. GCF funding will be provided in the form of sovereign loans according with the Board-approved financial terms and conditions for low concessionality public sector projects (0.75 per cent interest, 20 years) pari passu with the funding from other financing institutions (15 and 20 years, based on London Interbank Offered Rate or European Interbank Offered Rate).

44. Review of the financial model indicates that the level of concessionality at SGDF level is adequate to induce investment, as the SGDF produces an average financial internal rate of return at the project level of 6.7 per cent, including 3.6 per cent for public sector investors and 9.1 per cent for private sector investors.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

45. The programme, SGDF, seeks to leverage private, institutional and commercial finance to undertake climate mitigation and adaptation projects in Shandong province, China. Identified priority sectors of intervention include renewable energy, energy efficiency, urban transport, water and sanitation, and waste management, among others. The accredited entity (AE) has classified the programme as financial intermediation that will include high-risk projects for involuntary resettlement and moderate risk projects for environmental impacts. Given that infrastructure projects and projects with significant involuntary resettlement impacts may be included in the programme, the GCF Secretariat has categorized the programme as high-level intermediation or I-1. The environmental and social management system (ESMS) excludes projects that are assessed to be category A for environment and category A and B for indigenous peoples from funding by SGDF. Projects with potential risks and impacts rated up to category A for involuntary resettlement may be supported by SGDF.

46. The AE submitted an environmental and social management system (ESMS) for the programme as the environmental and social safeguards (ESS) document. The ESMS describes the implementation arrangements and responsibilities between the AE and the co-executing entity, SDIHG, as the management company of SGDF as well as the project sponsors for the environmental and social due diligence for projects. The ESMS includes a gap analysis of the environmental and social safeguard requirements of the AE and the national policies on involuntary resettlement, including measures that will be taken to address any gaps in order to comply with the standards of the AE. Furthermore, the ESMS details how the safeguards requirements of the AE will be applied at the project level from screening, assessment, and preparation of safeguards documents for different

[1] Final figures to be confirmed.

environmental and social risk categories and appraisal up to the review of reports on the implementation of ESS and monitoring for effectiveness. In addition, templates that will support environmental and social due diligence processes have been annexed to the ESMS, such as environmental and social screening checklists, outlines of an environmental assessment report, resettlement plans, and an ESMS implementation report, among others.

47. The project specific assessments, such as the initial environmental examinations and environmental evaluation report, include discussions on the policy, legal and administrative frameworks in the outlines. However, it will also be necessary for these documents to include gap assessments of the national regulations and the AE safeguards policy as well as any gap-filling measures that will be undertaken where discrepancies exist between the two. For example, a comparison of the AE standards for health, safety and labour and the national regulations can be added to the project-level assessment, including measures that will be taken to address any inconsistencies. The assessment by the GCF Secretariat recommends the update of the ESMS to include descriptions of the salient environmental and social risks of the programme, given the likely types of investments to be supported, the environmental and social context of Shandong as well as the environmental and social safeguard capacity of the executing entities.

48. The overall environmental and social risk level of the programme is high risk, which warrants disclosure of the ESMS document. Both the English and Chinese versions of the ESMS document have been disclosed by the AE on its website. At the project level, the AE commits to ensuring that SDIHG submits the following items for disclosure on its website: ESS documents for high and moderate risk projects; annual environmental and social monitoring reports; and annual ESMS implementation reports. Project information should also be disclosed to the public on SDIHG and SGDF websites or local government offices in the project area.

49. The programme has not yet identified projects that will be implemented in the priority sectors of intervention. Consequently, a detailed assessment of potential environmental and social impacts has not been undertaken, and mitigation measures for potential negative impacts are not provided.

50. Environmental: projects categorized as high environmental risk according to the ESMS of the AE are excluded from financing under the programme by SGDF. Exclusions related to environmental impacts include avoiding areas of critical habitats and cultural heritage resources as well as including areas that support cultural heritage resources or where cultural heritage resources may be found. Projects classified as moderate environmental risk projects, equivalent to Category B, will be required to undertake an initial environmental examination and/or an environment audit if there are existing facilities, and a corrective action plan (CAP) and/or an environmental management plan (EMP), including appropriate mitigation measures, environmental monitoring and reporting. The outline of the initial environmental examination appended to the ESMS is consistent with the content of an environmental assessment report. In the update of the ESMS, it will be necessary for the AE to provide clarity on the outline of the Environmental Evaluation Report annexed in the ESMS and its use in relation to the requirements of the ESMS.

51. Social: projects that involve significant involuntary resettlement impacts will be included in the programme by SGDF. Elements of a resettlement policy framework and/or livelihoods restoration framework for potential temporary or permanent impacts associated with physical and/or economic displacement are included in the ESMS. Projects for which involuntary resettlement is identified as a potential impact following screening should determine the scope of the resettlement planning required for persons to be displaced, both physically and economically, and prepare resettlement plans that include entitlements for displaced persons and income and livelihood restoration strategies.

52. The programme will not finance projects involving indigenous peoples or ethnic minorities.

53. SDIHG has the responsibility to ensure that tasks are undertaken regarding implementation of the ESMS. In addition, the capacity to fulfil this responsibility may be drawn from the

programme's technical assistance resources as well as from a pool of qualified environmental and social consultants. On capacity-building, the ESMS includes training for SDIHG and project companies on topics such as the standards of the AE and national regulations, implementation of environmental management plans, and the grievance redress mechanism. The GCF Secretariat recommends that in the update of the ESMS, the safeguards implementation roles of SGDF and SDIHG be described more clearly and in greater detail. Further the assessment of the institutional capacity of the executing entities, if undertaken, should be presented in the ESMS to form the basis of the proposed institutional capacity-building plan.

54. Plans for managing the environmental and social impacts for projects will be implemented and monitored for effectiveness. Environmental and social monitoring progress reports will be reviewed by the SGDF Safeguard Specialist. ESMS implementation reports will be prepared by SDIHG and reviewed by the AE. In the update of the ESMS, it will be useful for the AE to provide a clearer budget for establishing and implementing the ESMS at the programme-level that also includes due diligence, activity-specific management plans, and the monitoring and reporting of ESMS implementation.

55. The ESMS includes the elements of stakeholder engagement required for projects, however, the AE will need to elaborate further, through a stakeholder engagement framework, how the programme intends to engage and promote the participation and involvement of stakeholders and the minimum expectations at the project level. Description of stakeholder engagement will have to be provided in greater detail in the update of the ESMS. Meaningful consultations with affected people will need to be undertaken to facilitate their participation. This includes ensuring women's participation in the consultation processes as well as early in the project preparation process, and ensuring that their views and concerns are made known to, understood by, and taken into consideration by decision-makers. Stakeholders will need to include affected people and concerned non-government organizations, among others. Consultations with stakeholders are expected to continue throughout project implementation as necessary to address issues related to environmental and social impacts.

56. A programme-level grievance redress mechanism is provided in the ESMS for receiving, recording and resolving concerns raised with respect to the project. A member of staff designated to oversee the implementation of the ESMS within SDIHG will be the main focal person of the mechanism and will ensure its effective implementation, including disclosing information about projects. The ESMS describes the responsibilities of SDIHG, local authorities and the complainants, and timelines for the resolution of issues raised at each stage of the mechanism. The GCF Secretariat recommends that the update of the ESMS include a process for resolving grievances at the programme-level and a process for disseminating information on the mechanism to stakeholders at the project level.

4.2 Gender policy

57. The AE has submitted a gender framework and an initial poverty and social analysis together with the proposal, so it complies with the operational guidelines of the GCF Gender Policy and Action Plan. The gender framework has collected information on gender issues at the national level, including on: poverty; economic development; the policy framework for promoting gender equality and participation in the labour force; and access to education and political participation at the provincial level. The gender framework also identifies some opportunities presented by the project where women can benefit, for example, through new employment opportunities during the construction and operation of projects. The AE has outlined requirements for projects that will be financed under the programme, that is, social analyses with gender considerations and project-level gender action plans that include specific gender design features, targets and performance indicators in the design and monitoring frameworks for the collection of sex-disaggregated data. It is recommended that the AE ensure that these requirements are addressed by using tools such as

gender checklists and toolkits for various sectors, some of which have been included in the priority sectors of intervention by the programme.

58. The AE has submitted a programme-level gender action plan consisting of actions, indicators with targets, timelines and responsible agencies to assist in gender mainstreaming at the project level. The programme level gender action plan includes actions on the participation of men and women in public consultations on projects and promoting employment and income generation opportunities for women, which can be distilled at the project level by responsible agencies. The gender expertise of the AE will contribute to reviewing the implementation of the gender-related aspects of the programme. Targets for expected beneficiaries of the programme are sex-disaggregated and have been incorporated into the logic framework of the funding proposal for fund-level impacts.

59. It is recommended that the AE ensure that financial resources are set aside at the project level to ensure implementation of gender action plans. Further gender analyses at the project level that will be undertaken should assist in identifying actions that will be implemented to contribute to achieving gender results for the programme. Rationalization of targets in project level gender action plans should be supported by baseline data, which should be collected at the time of undertaking gender analyses for the projects or before commencing the implementation of the projects.

4.3 Risks

60. **Overall proposal assessment (risk):**

(a) GCF is requested to provide a sovereign loan of USD 180 million, to be used to investment into the equity of SGDF. The funding from GCF along with the funding from ADB, KfW and AFD will be used by the Ministry of Finance for on-lending to SDIHG. Through the Shandong provincial government, the SDIHG will use the funds for its equity investment as a limited partner into SGDF. The SGDF asset allocation is expected to be 80 per cent into direct investments and 20 per cent into sub-funds; and

(b) The proposal has potential to crowd in other investors including private sector investors at SGDF level and also at sub-investment level. The success of the programme depends on the ability of SGDF to source appropriate investments while adhering to the climate focus. Hence, the role of the fund manager of SGDF is crucial.

61. **Accredited entity/executing entity capability to execute the current programme (low risk):**

(a) ADB, the AE, has a long history of experience of policy advisory and financing investments in China. ADB has worked with the Government and private sector in the country; and

(b) SDIHG, a government-owned entity, is co-executing entity (EE) for the programme. SDIHG has a track record of successfully implementing public and private projects including multiple funds in Shandong. As per the information shared by the AE, the SDIHG has a sound financial position and employee set up. SDIHG will also support the programme by being a joint venture (JV) partner as the fund management company for the SGDF.

62. **Programme-specific risks (medium risk):**

(a) Fund Manager: the role of the fund manager is crucial to source the appropriate investments while adhering to climate rationale. The AE has stated that the fund manager is a joint venture (JV) between SDIHG and a top-tier asset manager to be selected on a competitive basis, which will hold a licence issued by the Asset Management Association of China. Though the other JV partner is yet to be selected, SDIHG being a JV partner is expected to have a positive impact. As a JV partner of SGDF fund manager, SDIHG is also relied upon to ensure that the sub-funds adhere to the climate focus. The AE has also stated

that the final-term sheet and limited partners agreement of SGDF are subject to the AE having no objection;

(b) Foreign currency fluctuations: the financing by GCF, ADB and other IFIs will be in USD/Euro. However, the investment to be made by SGDF is expected to be in local currency and/or into companies with revenue in local currency. SGDF, and partly the investee companies, therefore, will be exposed to currency fluctuation risk. However, this is expected to be partly mitigated by the lower interest rate vis-à-vis local currency funding; and

(c) Co-financing structure and crowding in: as per the funding proposal, the USD 180 million investment by GCF is expected to lead to USD 1.5 billion of total investment. To ensure that the desired level of leverage is achieved, it is necessary that GCF funds and co-financing are disbursed proportionately. The AE has clarified that loans from all the IFIs are disbursed over five years and are proportionately allocated. It is recommended that investment into SGDF by SDIHG and other public sector investors is done proportionately with the investment by the private sector investors who are expected to contribute 43 per cent of the capital of SGDF.

63. **Project viability and concessionality**

(a) GCF concessional resources will be used by SDIHG for making equity investment as limited partner of a fund. The fund will in return make ~20 per cent of its asset allocation as investment into sub-funds. It is necessary to have an optimum cost structure (management fees) for SGDF and the sub-funds to ensure that the concessionality of GCF resources reaches the end beneficiaries. The AE has stated that SGDF management fee structure will be determined through competitive bidding. The AE is also requested to ensure that the sub-funds have optimum cost structure;

(b) At the SGDF level, the average financial internal rate of return is about 6.7 per cent; the financial internal rate of return of public sector investors is estimated at 3.6 per cent and that of private sector investors is estimated at 9.1 per cent. Thus, the GCF concessional resources enable crowding-in from private sector investors at moderate returns; and

(c) The AE has also provided an estimate of return on equity (ROE) for the sponsors of the project funded by SGDF. The ROE is estimated to be 10–20 per cent with average ROE of 12 per cent. Therefore, GCF concessional resources are expected to be used by SGDF for enabling project viability and not for maximizing the equity returns to the sponsors.

64. **Compliance risk**

(a) A preliminary sanctions screening does not show any hits that would raise issues as the present with respect to the parties identified;

(b) SDIHG, which is a financial intermediary on the programme, underwent a due diligence review by ADB. At present, no red flags have been identified. Nevertheless, compliance suggests that the AE monitor any changes that may affect the stakeholders in a way that changes their risk.

(c) For the governance of the project, financial management, procurement, integrity due diligence, anticorruption, policy and legal, other institutional mechanisms and on-lending mechanisms will be implemented through the capacity development of SGDF;

(d) Compliance would like a little more detail about how these capacities will be developed (i.e. training, mentorship, partnering, etc.);

(e) Any relevant Chinese financial institutions could potentially become partners with SGDF after proper integrity due diligence is conducted and documented adherence to the international climate standards;

(f) Section G on risk assessment didn't highlight money-laundering/terrorism financing risk as relevant to the project. However, given the volatility of trade and other financial

relationships affecting the subject jurisdictions, compliance would suggest this be an ongoing effort of the parties to monitor for money-laundering/terrorism financing risks and to implement appropriate action when warranted;

(g) Compliance recognizes that ADB has long-standing experience in anti-money-laundering/combatting the financing of terrorism issues. However, due to the volatility of some of the financial issues, directly or indirectly, there remains a threat that should be carefully monitored. Compliance would rate this as a medium risk project, with the possibility that parts of it could be high risk.

65. **The GCF portfolio concentration risk (low risk):**

(a) In case of approval, the impact of this proposal on the GCF portfolio concentration in terms of the result area and single proposal is not material.

66. **Recommendation:**

(a) It is recommended that the Board consider the above factors in its decision.

Summary risk assessment		**Rationale**
Overall programme	Medium	GCF is requested to provide a sovereign loan. The funds from GCF and other international financial investors will be used by the executing entity to finance its equity investment into SGDF as limited partner. The role fund manager is crucial to source the appropriate investments while adhering to climate rationale. SDIHG, the executing entity will be a joint venture partner in the fund manager thus impacting the decisions at the SGDF level.
Accredited entity/executing entity capability to implement this programme	Low	
Project specific execution	Medium	
GCF portfolio concentration	Low	
Compliance	Medium	

4.4 Fiduciary

67. The co-Executing Entity for the Programme is the Shandong Development Investment Holdings Group (SDIHG), which is a wholly state-owned enterprise. SDIHG will comply by the ADB Guidelines through a Project Agreement signed in parallel to the Loan Agreement with ADB. ADB will enforce compliance of the Loan and Project Agreements during bi-annual review missions during the first 5 years; annual review mission from year 6 to year 10 and as required from year 10 to 15.

68. The financial management assessment of SDIHG was conducted following ADB's Financial Management and Analysis of Projects. Results of the assessment shows that SDIHG has financial management systems in place and that financial management procedures are well implemented to facilitate proper financial management and reporting. The overall financial management environment of accounting, reporting and monitoring systems are sufficient to support implementation of multiple loan facilities from IFIs.

69. All procurement activities financed from GCF and ADB loan, will be carried out in accordance with ADB's procurement policy and regulations for Financial Intermediary. Disbursement under the programme will follow ADB's Loan Disbursement Handbook.

70. The Fund Management Company (FMC) is being set up to manage the fund. The FMC will prepare the annual consolidated Statement of Utilization of Funds (SUF) to be audited annually in

accordance with international standards on auditing and with the Government's audit regulations, or with auditing standards acceptable to ADB. The audit will be conducted by an independent auditor whose qualifications, experience, and terms of reference fulfil ADB's rules and regulations.

4.5 Results monitoring and reporting

71. As a cross-cutting project, the intervention has a direct greenhouse gas reduction potential estimated at 50 million tCO_2eq over the programme lifetime of 20 years. The expected total number of direct and indirect beneficiaries is expected to be 10 million and 50 million, respectively, and is reflected as per the gender-disaggregated metrics of the relevant GCF impact and outcome indicators.

72. Overall, while the funding proposal is clear regarding the planned components and activities, and has a clear rationale and strategies for implementation, the AE will need to align the information under section C.3 (programme description) and C.8 (timetable of implementation) and ensure consistency with the activities section of information in the logic framework.

73. Regarding section H.1, based on Secretariat comments, the logic framework with GCF Fund Indicators and Programme Indicators continues to require additional improvements prior to funded activity agreement execution. The Secretariat clears the logic framework, based on the understanding that this clearance is subject to the agreement of the AE to resolve the above identified concerns to the satisfaction of the GCF Office of Portfolio Management as part of, or prior to, funded activity agreement negotiations.

74. Under section H.2, complies with GCF reporting standard, but shall be revised to include the methodologies on mid- and end-of-project evaluations.

4.6 Legal assessment

75. The Accreditation Master Agreement (AMA) was signed with the Accredited Entity on 17 August 2017, and it became effective on 6 September 2017.

76. The Accredited Entity has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the proposed programme. Pursuant to clause 4.20 of the AMA, the Accredited Entity shall provide a certificate confirming that all final internal approvals have been obtained and that it has the capacity and authority to administer the GCF Proceeds and Other GCF Funds (each as defined in the AMA) and comply with its obligations under the AMA with respect to the proposed programme, within the number of days approved by the Board, provided that such period shall not be less than 120 days. Section A.3 of the funding proposal mentions that the Accredited Entity expects to obtain its internal approvals in the first quarter of 2019.

77. The proposed project will be implemented in the People's Republic of China (PRC), country in which GCF is not provided with privileged and immunities. This means that, amongst other things, GCF is not protected against litigation or expropriation in this country, which risks need to be further assessed. The Secretariat sent to the Government of PRC a draft bilateral agreement on privileges and immunities in March 2016, together with a background note, in March 2016. However, no response has been received so far.

78. The Heads of the Independent Redress Mechanism (IRM) and Independent Integrity Unit (IIU) have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where the GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by the GCF are made only after the GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

79. Under the proposed programme, as described in the funding proposal and term sheet, the Accredited Entity will enter into a subsidiary agreement, in the form of a sovereign loan agreement, with the PRC, which will channel the GCF Proceeds, under an on-lending agreement, to the Shandong Province Government (SPG), which in turn will pass down such funds, under an on-lending agreement, to the Shandong Development and Investment Holding Group (SDIHG). SDIGH, acting as a limited partner, will invest the GCF Proceeds into the Shandong Green Development Fund (SGDF) and will also hold a fifty-one per cent (51%) interest in the general partner of SGDF. The SGDF will use the GCF Proceeds to finance eligible sub-projects in accordance with the programme management plan (PAM) to be developed and approved by the Accredited Entity and SPG.

80. The definition of the term "Executing Entities" in the AMA includes any entity that channels GCF Proceeds and/or carries out the implementation of a funded activity. Pursuant to this definition, each of the PRC, SPG, SDIHG and SGDF is an Executing Entity. The Accredited Entity will enter into Subsidiary Agreements with PRC in the form of a sovereign loan agreement, and with the SPG and SDIHG in the form of a tripartite project agreement (Project Agreement); however the Accredited Entity will not have a direct contractual relationship with the SGDF which would allow the Accredited Entity to directly require and enforce the relevant AMA and FAA provisions to the SGDF in its role as an Executing Entity.

81. Notwithstanding the foregoing, the Subsidiary Agreements to be put in place by the Accredited Entity with the PRC, SPG and SDIHG will contain the relevant provisions requiring SGDF to comply with all FAA and AMA obligations, including those relating to passing down concessionality, sub-project selection criteria and methodologies, and SDIHG will be required to monitor SGDF's compliance with such requirements. In addition, SDIHG, through its interest in the general partner, will ensure that SGDF complies with the relevant provisions under the Project Agreement, including the PAM, and that SGDF also require such compliance by the relevant investee companies.

82. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Delivery by the Accredited Entity to the Fund of a certificate or legal opinion within 120 days of the Board approval confirming that it has obtained all its internal approvals;

(b) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval, or the date in which the Accredited Entity has provided a certificate or legal opinion confirming that it has obtained all internal approvals, whichever is later; and

(c) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP083

Proposal name:	Indonesia Geothermal Resource Risk Mitigation Project
Accredited entity:	World Bank (WB)
Country/(ies):	Indonesia
Project/programme size:	Large

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The proposed project addresses a financing gap for geothermal development with the removal of early-stage development risks, a main barrier to geothermal development in Indonesia, one of the most fossil fuel reliant and energy intensive economies. GCF financing in the upstream development phase will help confirm both the availability and the scale of geothermal resources in the targeted areas.	There is a possibility of double counting greenhouse gas emissions as developers facilitate financial close beyond the de-risking phase.
The project will leverage significant financing in geothermal investments that would not be possible if the early-stage risk was not mitigated. The estimated ratios are 1:18 for GCF to private financing and 1:22 for GCF to total financing.	Geothermal exploration can be risky. However, in Indonesia there is a success rate of 75% expected on the entire operation based on accredited entity historical records for similar operations in Indonesia. This rate is 63% in the low case. Successful operations will generate an upside, which will cover the loss on failed operation, leading to financial self-recovery at the portfolio level.
The accredited entity has extensive experience in geothermal investment in Indonesia, which the project will leverage at implementation.	World Bank has no obligation to report on the subproject implementation after 10 years. The Secretariat has therefore requested of the accredited entity that GCF proceeds should only be committed against during the project implementation period, before end of year four, to enable tracking of all GCF-financed projects in the private sector window within the 10-year lifetime of the facility. Beyond year 10, the AE will provide access to automated financing reporting for the repayment of GCF loan.

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. As an emerging economy, Indonesia foresees the need for an additional 78 gigawatts (GW) capacity for power generation to meet both the demand driven by stable economic growth and its access goal of 99.7 per cent national electrification by 2025. Since Indonesia's low electricity tariff favours coal in the power generation mix, the country risks locking in several million tonnes of greenhouse gas (GHG) emissions. However, Indonesia has also committed to an ambitious 29 per cent reduction in GHG emissions by increasing the share of renewable energy in the power generation mix to 23 per cent by 2026. Geothermal energy could potentially contribute 7 per cent of that amount by providing 5.8 GW of geothermal generation capacity.

4. Despite its tremendous potential as a resource, the development of geothermal energy generation in Indonesia has been limited due to the prohibitively risky and expensive early-stage development costs. The exploration drilling risk is seen by developers, particularly private sector developers, as the primary barrier to obtaining financing as uncertainties associated with the availability of productive and developable resources increase investor requirements for a return on equity. This risk is further exacerbated by the geothermal tariff framework, which needs improvement to enable private sector investment.

5. Realizing these needs and their associated challenges, the proposed project aims to help the Government of Indonesia scale up geothermal energy generation by introducing a well-designed upstream risk mitigation mechanism and promoting a conducive regulatory environment. A new geothermal resource risk mitigation facility will be established under the proposed project to provide geothermal developers with contingent financing and soft loans for resource confirmation drilling with a view to financial close.

6. For the proposed project, GCF will contribute USD 25 million in concessional loans to public developers and USD 150 million in a reimbursable grant to private sector developers through PT Sarana Multi Infrastruktur (PT SMI). These contributions will leverage an initial investment of USD 575 million, including a USD 325 million loan from the International Bank for Reconstruction and Development (IBRD). Indonesia's Ministry of Finance and PT SMI will contribute USD 150 million for a reimbursable fund that will provide complementary financing for public sector developers; private sector developers will contribute USD 100 million in equity. If successful, the leverage potential after implementation would be significant, potentially achieving USD 4-5.5 billion in downstream investments. Additionally, the project is expected to enable carbon dioxide (CO_2) emission reductions of 187-218 metric tonnes of carbon dioxide equivalent ($MtCO_2eq$) over the lifetime of the project, or 6.2–9.3 $MtCO_2eq$/year, as well as a geothermal generation capacity of 1-1.5 GW.

7. The project will provide critical assistance to the Government of Indonesia as it seeks to achieve its goal of adding 5.8 GW of geothermal power generation to the power generation mix by 2026. The government has also highlighted the project as a priority for meeting its nationally determined contribution. For the World Bank, the accredited entity (AE), this is forecasted to be a flagship project that will have a transformational effect on Indonesia and reduce GHG emissions in one of the biggest coal-producing countries in the world. The project is well aligned with the GCF result area for reducing CO_2 emissions from energy access and power generation. A more detailed analysis is set out below.

8. Due to management of commitment authority, the project will be implemented in tranches, whereby the initial tranche accounts for 60 per cent of the total impact.

2.2 Component-by-component analysis

9. The project is structured with two main components.

Component 1: Geothermal resource risk mitigation facility (total cost: USD 650 million with an additional USD 100 million mobilized from private sector developers; GCF cost: USD 175 million, or 23 per cent)

10. The proposed geothermal resource risk facility will de-risk the exploration and resource confirmation phase of geothermal development projects. It will be managed by PT SMI and provide geothermal developers with up to USD 30 million liquidity for each transaction. Two investment windows will be added to the existing geothermal energy upstream development project to attract both public and private developers:

(a) The **public sector window** will target state-owned enterprises. For this window, PT SMI will provide soft loans to interested entities by blending funding from the International Bank for Reconstruction and Development and GCF concessional loans, which will be matched by contingent financing from payment initiation service provider funds. GCF financing for this window would be in the form of a concessional loan backed by a sovereign guarantee from the Government of Indonesia;

(b) The **private sector window** will support private sector developers. For this window, private sector developers will share the resource confirmation risk by committing equity in the exploration and resource confirmation phases. An equivalent of 25 per cent of the total resource confirmation cost will be required from each project's sponsor. The developers will then raise the remaining 75 per cent from the facility. Up to half of the facility-raised amounts will be through convertible bonds issued by the developer and bought by PT SMI using GCF proceeds. The convertible bonds can be converted into special purpose vehicle shares, providing a non-recourse instrument to mitigate the cost of geothermal exploration in case the outcome is not successful. An option to convert the bond into equity is held by PT SMI while the sponsor holds a termination right that they can exercise at anytime upon paying the termination price; and

(c) In the event of an unsuccessful resource confirmation operation, the drilling special purpose vehicle is valuated and the convertible bonds are written off up to the residual value that can flow back to GCF. In the event of successful drilling, the sponsor can either pay the termination price or PT SMI can auction the convertible bonds, the value of which would have increased due to the value increase of the special purpose vehicle. The GCF reimbursable grant will therefore cover up to 50 per cent of the facility financing at the exploration phase. The test drilling phase is covered by the World Bank loan alone. Additionally, for the private sector window, the liquidity from buying the facility bond will be disbursed to project developers alongside their 25 per cent equity contribution, so that the equity contribution is always spent before debt on subsequent project activities.

11. Early market sounding shows that several public and private sector developers are interested to invest once the resource risk mitigation facility is in place.

12. The facility is designed in such a way that the resource risk is shared by GCF and the private sector developers. This means that private sector developers will be required to invest in the exploration through equity, which then covers 25 per cent of the total resource confirmation cost.

Component 2: Technical assistance and capacity-building (total cost: USD 10 million; GCF cost USD 10 million, or 100 per cent)

13. This component will finance a support programme to enhance the capacity of PT SMI to govern the facility and manage the GREM portfolio. It will also build capacity within the key sector stakeholders and provide technical assistance to improve overall sector governance and the investment climate for geothermal development in Indonesia.

14. The GCF grant will cover approximately half of the cost required to run a project management unit as well as incremental operating costs related to the facility management by PT SMI. The grant will further be used for technical assistance activities for key stakeholders, such as the Ministry of Energy and Mineral Resources and Perusahaan Listrik Negara (PLN), the state electricity company of Indonesia.

III. Assessment of performance against investment criteria

15. Overall, the proposal is well aligned with the six GCF investment criteria. The impact potential and paradigm shift potential, in particular, stand out as the project promises to address the primary barrier for geothermal development faced by developers and hence unlock private investment.

3.1 Impact potential *Scale: High*

16. The facility is expected to leverage USD 4–5 billion in the first phase primarily from the private sector, which will lead to the development of about 1 GW of new geothermal capacity. The result will be an estimated 187–218 $MtCO_2eq$ in GHG emissions reductions compared to a baseline scenario where new coal plants are commissioned. This figure has been calculated taking into consideration the emissions incurred at the drilling stage and any possible deforestation at the project sites, though these are negligible. This scale of mitigation potential is considerable, representing 18.7–28.1 per cent of all emissions reductions from the 53 approved GCF projects to date.

3.2 Paradigm shift potential *Scale: High*

17. The project will address the primary barriers to public and private investment in geothermal development in Indonesia, including the high resources risk and the associated high drilling costs, and improve the investment climate in this sector. The risk mitigation facility, which also builds on the technical assistance of key institutions, will likely unlock investment in the Indonesian geothermal sector. The proposal outlines a viable strategy based on capacity-building and the creation of an enabling environment. The knowledge and experience of how to undertake such operations, if implemented successfully, would also be valuable for scaling up and replication within and beyond Indonesia.

3.3 Sustainable development potential *Scale: High*

18. In addition to the considerable GHG mitigation impact, unlocking the potential of geothermal energy will also deliver environmental benefits to Indonesia, mainly by preventing the construction of additional fossil fuel power plants. Due to increasing demands for electricity in Indonesia, and plans by the Government of Indonesia to build a power system with sufficient redundancy to address resilience concerns, the project will not result in any decommissioning of existing fossil fuel power plants. The technical assistance component will, however, mitigate this concern by supporting transmission and distribution planning, with the goal of achieving a 100 per cent grid dispatch of energy from geothermal sources.

19. Social and economic co-benefits will be brought primarily from increasing the country's energy security and jobs creation in the project's value chain. Indonesia expects demands for

energy to increase as the economy grows and the government improves access to energy. The deployment of geothermal resources will significantly reduce the country's reliance on fossil fuels and their associated price fluctuations. The geothermal projects are also expected to create temporary and permeant jobs for skilled workers in the 20 sites projected for this facility; these jobs will be in areas such as drilling, construction and operation of the plants. The AE also conducted a gender assessment and action plan at the facility level and it will carry out further site-specific work once all the sites are identified.

20. The Secretariat has updated this indicator to high, due to the increase achieved from the potential to capture upside that will result from the new instrument. It is suggested that any additional upside, beyond the value of the reimbursable grant, will be used for additional geothermal development in Indonesia.

3.4 Needs of the recipient *Scale: Medium to High*

21. As an emerging economy that is highly reliant on fossil fuels for its energy supply, Indonesia is committed to reducing its carbon footprint, but international support is critical for this transformation. The project addresses the key needs of local institutions through technical assistance measures that will enhance the environment for investing in geothermal development.

22. Indonesia's current power generation mix has been dominated by fossil fuels, with only 12.5 per cent of energy generated from renewable sources. This dominance is difficult to disrupt due to the incremental investment required for cleaner options. The financial market in Indonesia is shallow with limited options to address the risks of geothermal resource development, a gap that the project will fill.

3.5 Country ownership *Scale: Medium to High*

23. The proposal seeks to contribute to Indonesia's identified priorities for low emission and climate resilient development as outlined in its nationally determined contribution. The Government of Indonesia has clearly expressed its ambition to transform its power generation mix and reach a 29 per cent share for renewables by 2026. The country ownership is further strengthened by a commitment from the government to mobilize USD 150 million in parallel to the project.

24. The World Bank has significant experience with projects in Indonesia as well as projects in the geothermal development sector. Currently, the World Bank leads a global geothermal development plan and is supporting six upstream geothermal projects in five countries, including one in Indonesia – the Geothermal Energy Upstream Development Project (GEUDP). The executing entity (EE), PT SMI, which is also an accredited entity to GCF, has managed several World Bank projects and is currently managing GEUDP, the first window of the proposed facility. Under the oversight of the World Bank, the capacity built in the direct access entity will be applied to any future operations that occur after GCF intervention, as the facility will continue its efforts to develop geothermal energy in Indonesia.

25. The proposal is the result of collective efforts by concerned stakeholders, including the Ministry of Finance, PT SMI and other stakeholders in the geothermal sector in Indonesia, whose views are reflected in the project design.

3.6 Efficiency and effectiveness *Scale: Medium to High*

26. The total cost per tonne of CO_2eq reduced over the project lifetime is USD 21.36, and the total cost for GCF is only USD 0.99/tCO_2eq. However, these estimates will need to be recalculated

after drilling is complete to get a better idea of the ultimate mitigation impact and cost effectiveness.

27. Economic and financial analyses were conducted on sample developments of 55 megawatts (MW) and 10 MW, which are the common sizes of geothermal plants based on the technology available today. The financial viability of the geothermal resources discovered through the drilling is dependent on the enthalpy of the resource, as it influences the ultimate productivity of the well. Additional economic benefits will be dependent on the degree to which the new geothermal resource can be exploited to displace the existing coal supply, thus reducing GHG emissions compared to the counterfactual scenario. The economic analysis valued the power supply from each geothermal development at the weighted average of the cost of the diesel-based power supply it substitutes and the willingness to pay for an additional power supply to enable new household connections. The economic rates of return for sample plants range from 13–32 per cent, with financial internal rates of return of 6–13 per cent.

28. The reimbursable grant instrument provides a path for full or partial repayment of GCF funds, pending successful exploration and delineation drilling. The facility-level financial analysis of the private sector window provided by the AE models the outcomes and financial flows of 13 potential sites. This analysis shows full recovery of the reimbursable grant by GCF in the base scenario of 75% projects successful. If the success rate were to decline to 65%, or around two fewer successful projects, GCF would still recover 93% of the reimbursable grant.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

29. GREM is a financial intermediation project which aims to encourage and support geothermal exploration projects in Indonesia. It will be implemented by PT SMI, a state-owned infrastructure financing company established in 2009. Potential clients (sub-borrowers) of the project include state-owned and private companies.

30. The project is assessed as Risk Category I-1 (high-risk level intermediation) on account of the high environmental and social risks and impacts associated with geothermal exploration. A typical geothermal exploration project would involve mobilization of heavy equipment, including the setting up and operation of drilling rigs, construction of wellpads, the drilling of three to five wells of up to a depth of 2,500 metres and the subsequent testing of these wells, which involves the discharge of high-pressure steam and non-condensable gases. Moreover, geothermal exploration prospects are usually located in remote areas, which may include protected forests and/or inhabited by indigenous communities. Each exploration project would probably also include the construction of access roads, which, although not financed by the project, will contribute to the overall environmental and social risks of exploration. Other environmental and social impacts based on the locations of the subprojects may include those related to biodiversity and natural habitats, contamination of ground and groundwater, ambient noise, occupational and community health and safety, community nuisance, and effects on well-being and cultural heritage, among others. More long-term environmental and social risks are expected to be generated during possible geothermal exploitation of proven geothermal reserves and include direct and indirect impacts on natural habitats, land use changes, and natural resources, potential groundwater contamination, impairment of ambient air and water quality, contamination of ground, solid and hazardous waste from the operation of the plant, physical and economic displacement, and occupational and community health and safety impacts.

31. To address these risks and impacts, the AE has caused PT SMI to prepare an environmental and social management framework (ESMF) that incorporates a resettlement policy framework (RPF) and an indigenous peoples policy framework (IPPF), based on Indonesia's country safeguards system and the safeguards policies of the AE that are materially equivalent to the GCF

interim environmental and social safeguards (ESS) standards. Vetted by the AE, these instruments adequately address all aspects of environmental and social management of the project. They will guide the management of the environmental and social risks associated with the implementation of the project and ensure compliance with the policies of the government as well as of the AE.

32. The ESMF sets out the processes, documentary requirements and institutional arrangements for the environmental and social screening, scoping, assessment, review and approval of subprojects, compliance monitoring and grievance redress. Sub-borrowers are required to develop and implement detailed safeguards instruments following the process and specifications described in the ESMF. Proposed subprojects will undergo a screening process to initially identify potential risks and issues that will have to be assessed in detail. The result of the screening will enable PT SMI to confirm the scope of assessments that will be conducted. Environmental and social impact assessments and the environmental and social management plan (ESMP) are the mandatory safeguards instruments of the subprojects. Such safeguard instruments will be developed to meet the requirements of the Government of Indonesia as well as of the AE. The environmental and social impact assessments will cover subproject-related environmental and social risks related to natural environment, social, transboundary and cumulative impacts.

33. The ESMF has also identified the environmental and social risks commonly associated with geothermal exploration and provided mitigation options for sub-borrowers based on the standards of the accredited entity, the GCF interim ESS standards and the GCF Environmental and Social Policy and good international industry practices. These mitigation options include the adoption of a zero-discharge system through reinjection of geothermal brine, application of directional drilling to avoid sensitive areas, restoration and abandonment of exploration sites, occupational health and safety management, and emergency preparedness and response. These mitigation measures will be elaborated in the ESMPs of specific subprojects. Detailed and more specific assessment of risks will be undertaken by the sub-borrower for individual geothermal exploration subprojects.

34. The RPF provides guidance on the process for assessing and managing land acquisition and involuntary resettlement associated with the subprojects. The RPF describes the two options for obtaining land required by the project: through a market transaction and acquisition under eminent domain. The two options will trigger different mechanisms covered in the RPF. The RPF indicates that the majority of land acquisition for drilling activities will be through a willing seller-willing buyer approach – utilizing market transactions and without the option to resort to compulsory acquisition procedures should the transaction fail. The RPF describes the footprint of the infrastructure as most probably flexible, allowing the subprojects to avoid involuntary land acquisition, resettlement, and restriction of access and livelihood. However, in cases where there are constraints in the land options, the involuntary land acquisition will be governed by the principles, rules, and procedures set in the RPF. The RPF provides the comparison between the requirements of the policies and regulations of the government and the safeguard policy requirements and process for preparing the land acquisition and resettlement action plan (LARAP). The safeguard policy of the AE requires compensation to be paid to affected people at replacement value.

35. The IPPF describes the requirements and processes to be undertaken by the sub-borrowers in cases where the environmental and social screening process and subsequent assessments of subprojects indicate the presence of or potential impacts to indigenous peoples. The IPPF described the country's laws and policies pertaining to indigenous peoples, including guidelines for recognition and protection of the customary law community, or *masyarakat adat*, as well as the safeguard policy on indigenous peoples of the AE. The IPPF sets out the general requirements for subprojects, for example, ensuring that social impacts are identified, screened, and assessed for direct and indirect impacts on indigenous peoples. Depending on the nature and scale of the subprojects, the IPPF requires the development and implementation of an indigenous peoples plan (IPP) specific to the subprojects or a broader community development plan. It also provides for the process of community engagement to ensure that free, prior and informed consultation is facilitated resulting in broad community support for the subprojects.

36. The project underwent adequate public consultation and benefited inputs from key stakeholder institutions, including the concerned national government agencies, local government units, non-governmental organizations, private sector, academia and media. The discussions centred on the use and implementation of the ESMF, the mitigation measures, and the need for capacity development. Community-level consultations for individual subprojects will be undertaken by sub-borrowers following the process and requirements described in the ESMF that includes a process for stakeholder identification, preparation of stakeholder engagement plan, and disclosure of safeguard documents by the accredited entity, PT SMI and sub-borrowers.

37. The existing grievance redress system of PT SMI will be used to receive and resolve project and subproject complaints. In addition to the grievance redress system of PT SMI, the sub-borrowers will also be required to develop their own grievance redress mechanism at the subproject level. The subproject grievance redress mechanism specifies the process for receiving complaints, registering the grievance, assessing, acknowledging and responding to complaints, appeals, resolution and follow-up.

38. PT SMI through its Environmental Social and Advisory Evaluation Division will be responsible for implementing the ESMF and for monitoring sub-borrower compliance. The AE will provide oversight to PT SMI through periodic implementation review of safeguards at the project level. This includes the engagement of an independent monitoring agency to review the implementation of RPFs and LARAPs at the subproject levels. The sub-borrowers will be responsible for the implementation of subproject-specific ESMPs, LARAPs, IPPs and contractors' ESMPs.

39. The PT SMI environmental and social management system consists of ten environmental and social standards that also fully reflect the relevant interim standards of GCF. The company has extensive experience in implementing safeguards policies of the AE and other donors in at least four other financing programmes, including the GEUDP. A capacity-building plan will be developed following a needs assessment conducted by PT SMI. The implementation of the safeguards capacity-building will be supported by the AE.

4.2 Gender policy

40. The proposal contains a gender analysis and action plan and is therefore compliant with the operational guidelines of the GCF Gender Policy and Action Plan. The gender context speaks to Indonesia's overall rating in terms of women's employment: wage gaps between women and men; representation of women in parliament; land and inheritance and marital rights of women; ownership of enterprises; and educational attainment. It demonstrates that there are improving trends in the role of women, their engagement and levels of empowerment in many sectors. Despite all efforts, however, inequalities persist in most spheres, where women are seen to be less engaged and empowered.

41. The analysis tries to rationalize that there are positive outcomes and returns for women from potential work in the geothermal sector in that electricity is a necessary and important input for micro enterprises that are key contributors to rural job creation and poverty alleviation. There is also intent on the project side to ensure women are engaged in the workforce in the geothermal sector. The project will raise awareness and build consensus on the important role that women play in the sector and will therefore work towards attaining gender balance in the work force. The gender action plan (GAP) indicates specific activities, outcomes and impact assessments, as well as gender-related results. Consultations will take place with communities and there is a 20 per cent target for women's participation. Activities will address and document the opinions and views of women and men.

42. The assessment and action plan are based on a desk review of various documents with the exception of the consultation to be held with local communities. A gender assessment will be conducted once the site for the geothermal exploration is known and will be reflected in section F.3

of the revised funding proposal. consultation with both men and women in communities is critical to identify their priorities and needs in this regard. World Bank gender specialists assigned to the region will support the activities that will be identified to address gender-related issues.

43. The inclusion of gender-related impacts, outcomes and outputs is very important and is key to ensure that the activities indicated in the GAP are linked to component 2 of the project. Baseline, targets and indicators will be included in the GAP. Financial resources are allocated from the project budget under both component 2 and project preparation costs and will be reflected in the GAP.

4.3 Risks

44. **Overall proposal assessment (medium risk):**

(a) The funding proposal is for providing concessional loans (for public sector entities), reimbursable grants (for private sector entities), and a technical assistance grant. For the public sector window, both GCF and the AE will provide loans to the EE backed by sovereign guarantee. For the private sector window, the AE will provide a senior loan (50 per cent for exploration and 50 per cent for delineation), and GCF is requested to provide a reimbursable grant. Financing from the EE for exploration to the private sector developers will comprise a 50 per cent loan (AE portion for exploration) and 50 per cent convertible bond (financed through a reimbursable GCF grant). The repayment of convertible bonds (and consequently repayment of the GCF reimbursement grant) is linked to the value of the underlying projects, which in turn is linked to successful exploration and signing of power purchase agreements (PPAs) at remunerative tariffs;

(b) The programme supports the exploration of a geothermal project. However, to achieve the desired climate impact it is necessary that after successful exploration, the financial closure and construction of the relevant projects are carried out in a timely manner and the projects have steady operations. The AE has identified regulatory risk pertaining to tariff and PPAs. These risks can adversely affect the financial closure, construction and operation of the power plants; and

(c) After the project implementation period (10 years), the AE would not be taking on fiduciary and safeguard responsibilities. However, the tenor of the GCF loan is 20 years. The operation period of the projects, when the climate impact will materialize, will also be beyond the reporting period for the AE.

45. **AE/EE capability to execute the current programme (medium risk):**

(a) The World Bank is the AE for the proposed programme. PT SMI, 100 per cent owned by the Indonesian Ministry of Finance, will be the EE for the project. The Project Management Unit, established within PT SMI to manage other programmes supported by the AE, will be strengthened and will also manage the proposed facility. The AE has stated that the major procurement risk currently envisaged is the capacity of PT SMI for due diligence and oversight of complex drilling operations. To mitigate this, the AE will support PT SMI in developing due diligence and sub-borrower eligibility criteria. Successful implementation of the project depends on correct selection of the beneficiary projects by the EE with support from the AE; and

(b) The modus operandi of the convertible bonds is complex. The EE needs to actively manage the investments to ensure that the returns from the convertible bonds are commensurate to the value of the projects. The AE has provided that the technical assistance will be designed to address the capacity issues. GCF is relying on the AE to monitor the process followed by the EE.

46. **Project specific risks (high risk):**

(a) Regulatory risk: the desired climate impact will be achieved only when the successful exploration is followed by timely financial close and construction, and steady operation of the geothermal power plants. The AE has identified regulatory risk to the potential signing of the PPAs for the successful exploration projects. The most recent tariff policy requires the price of power to be competitive with the average cost of generation in a region. Further, there is uncertainty related to post-exploration business-to-business negotiations of the PPA price and the new requirement of ministerial approval for the PPA price. Without a supportive regulatory regime, the capex financed by GCF may not lead to the desired climate impact;

(b) The terms of the GCF financing: for the private sector financing, GCF and the AE are assuming different levels of risk. The AE will provide a loan that the EE (and the developers) have a definite obligation to repay. GCF financing to the EE is through a reimbursable grant, which the EE will use to invest in convertible bonds for the developers. However, the repayment of those bonds will be based on the value of the respective geothermal project. Even if the project has successful exploration, the value may not be adequate to recover GCF financing as the value may be adversely impacted by delayed signing of and tariff under the PPA. Thus, while GCF supports the developers by assuming the exploration risk (there is no definite obligation to repay GCF financing, unlike the contractual obligation to repay the AE loan), GCF is also exposed to the regulatory risk. Government of Indonesia is requested to expedite signing of the PPAs at a remunerative tariff for those projects that are successfully explored. Further, should the EE earn surplus on the investment, such surplus will not be provided to GCF; the returns for GCF are capped at the value of the reimbursable grant. The AE agreement with the EE will require the latter to use surplus amounts (if any) to support the objectives of the project; and

(c) Project financing volume: the total project financing is USD 510 million (including the first tranche and subsequent tranche from GCF). The Ministry of Finance and PT SMI will provide USD 150 million as complementary financing and the private sector will provide USD 100 million as leveraged equity financing. To achieve the desired capex size and climate impact it is necessary that the complementary financing is available on time. The AE is requested to ensure that disbursement to any project financed through the reimbursable GCF grant is done only after the project developer provides the equity contribution of at least 25 per cent of project cost.

47. **Project viability and concessionality:**

(a) For the reimbursable grant portion, the AE has assumed a 75 per cent success rate for exploration, and a 6.5 per cent premium on the convertible bond, resulting in full recovery of the reimbursable GCF grant. However, a reduction in the success rate to 65 per cent results in a loss of 7.1 per cent of the reimbursable GCF grant. The AE has informed that the geothermal development success rate is between 75 and 80 per cent for Indonesia. However, as per the transaction structure, GCF reimbursement grant accounts for 50 per cent of exploration financing to be provided by the EE to the private developers. If the success rate realized is 50 per cent (in line with the transaction structure) then GCF is expected to lose around 20 per cent of its reimbursable grant. The viability of the programme depends on the exploration, timely development and steady operation of the power project, which can be impacted by the regulatory risks pertaining to the PPA and tariff; and

(b) Part of the grant for capacity-building will be used for capacity-building within PT SMI. The AE is requested to take note of the PT SMI profitability and liquidity position and seek possible funding for such components from PT SMI.

48. **Compliance risk (medium risk)**

(a) By contract, the AE is bound to apply international practices to prevent money-laundering and terrorist financing in its administration of funds provided by GCF. However, compliance is not at present able to determine or identify specific risks as regards money laundering and/or the financing of terrorism or risks deriving from prohibited practices in the funding proposal;

(b) Sanctions screening should be conducted on the date of any disbursement or if any changes or additional parties are to be considered;

(c) In the absence of the specific section in the funding proposal addressing the risk of money-laundering and the financing of terrorism, and other integrity risks related to the prohibited practices, such as fraud and corruption, a second-level due diligence review is based on limited information and it would not be possible to perform a quality assessment. The following assessment is therefore focused only on some selected parts of the proposal and does not answer the above-mentioned questions on which the AE should elaborate, based on their first-level due diligence;

(d) Some significant risks of money-laundering and financing of terrorism may exist in the activities related to the proposal. However, the proposal does not state how far the AE will perform due diligence on counterparties and beneficiaries so as to prevent these respective risks. Nevertheless, as funded activity agreements may be issued under the terms of the funding proposal, GCF reserves the right to supplement its assessment in light of new or additional information provided; and

(e) Considering the available information, the preliminary outcome of the compliance assessment is medium risk.

49. **GCF portfolio concentration risk (low risk):**

(a) In case of approval, the impact of this proposal on the GCF portfolio concentration in terms of result area and single proposal is not material.

Recommendation:

50. It is recommended that the Board considers the above factors in its decision.

Summary risk assessment		**Rationale**
Overall programme	Medium	• The programme is for financing the exploration of geothermal projects. The desired climate impact, is contingent upon successful financial close, timely construction and steady operation of such geothermal projects after successful exploration. However, as identified by the accredited entity, regulatory risk exists pertaining to tariff and power purchase agreements • The recovery of the reimbursable GCF grant may also be adversely affected by the above issues • The accredited entity's proposed reporting period does not cover the operational period of such geothermal projects
Accredited entity/executing entity capability to implement this programme	Medium	
Project specific execution	High	
GCF portfolio concentration	Low	
Compliance	Medium	

4.4 Fiduciary

51. The EE for the project will be PT SMI, which is also a GCF AE. PT SMI will be responsible for the vetting process of the pipeline of projects and setting eligibility criteria for developers to access the facility's funds.

52. The project's AE is the World Bank. As AE, the World Bank will provide support to the EE in its implementation of the project. This includes working with the EE in defining the key features of the facility and supervising compliance with World Bank requirements and standards, such as the decision-making process and eligibility criteria, fiduciary requirements and safeguards' standards, stakeholder management, subloan and contractual arrangement, and providing independent advisory support on reviewing drilling results and capacity-building for drilling management.

53. Within PT SMI, a Project Management Unit has been established to manage the GEUDP, the expanded facility and handling the interface with developers.

54. More specifically, PT SMI and its Project Management Unit will be responsible for:

(a) Administering the facility and managing accounts;

(b) Appraising and approving or rejecting project proposals based on a technical, economic and financial review of applications from developers;

(c) Monitoring and evaluating progress and results at the facility level and preparing periodic progress and supervision reports as requested by the World Bank and GCF. This may include developing a system for gathering and maintaining the necessary data from the developers to track the individual subprojects and identifying mitigation measures for risks that may affect individual projects and the facility;

(d) Financial management of the project, accounting and financial reporting, arranging for the submission of audited financial reports;

(e) Preparing terms of reference for consulting services funded with World Bank/GCF resources to be approved by the World Bank; and

(f) Facilitating external evaluations and ensuring that recommendations are implemented.

55. PT SMI will follow World Bank procurement guidelines, including independent auditing arrangements, use of the International Financial Reporting Standards and quarterly financial reporting. A designated trust fund account will be established for GCF funds by the World Bank and PT SMI.

56. It is recommended that, as a condition of first disbursement, the AE provides a detailed budget, in particular for the grant component, that is fully satisfactory to GCF.

4.5 Results monitoring and reporting

57. This proposal addresses mitigation impact and the project expects to reduce between 6.2–9.3 $MtCO_2eq$ per year through a risk mitigation facility for geothermal exploration and delineation drilling. The lifetime emission reduction is expected to be in the range of 187–281 $MtCO_2eq$. The baseline is assumed as a business-as-usual scenario using the average 2016 grid factor for Indonesia in line with World Bank GHG accounting guidelines. For project emissions, the default emission factor for geothermal power plants in Indonesia was used, referenced from "Geothermal Power Plant Emissions in Indonesia" published in the Proceedings of the World Geothermal Congress 2015.[1]

58. The useful life of the project is assumed to be 30 years in calculating lifetime project emissions as well as baseline emissions. Given that the considerable horizon lends itself to changes in market conditions and political environment around energy and environment issues, the project

[1] Available at <https://pangea.stanford.edu/ERE/db/WGC/papers/WGC/2015/02012.pdf>.

could benefit from further elaborating on the baseline assessment to reflect evolving regulatory and market systems better.

59. In line with the suggestion from the Secretariat, the implementation timetable included specific milestones and deliverables and the logic framework inserted paradigm shift objectives and mid-term targets.

4.6 Legal assessment

60. The accreditation master agreement was signed with the AE on 13 November 2017, and is not yet effective.

61. The AE has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and that it has the capacity and authority to implement the project. It is recommended that, prior to submission of the funding proposal to the Board (a) the AE has obtained all its internal approvals and (b) GCF has received a certificate or legal opinion from the AE in form and substance satisfactory to GCF confirming that all final internal approvals by the AE have been obtained and that the entity has the authority and capacity to implement the project.

62. The proposed project will be implemented in the Republic of Indonesia, a country in which GCF is not provided with privileges and immunities. This means that, among other matters, GCF is not protected against litigation or expropriation in this country, risks that need to be further assessed. The Secretariat submitted a draft privileges and immunities agreement to the government of Indonesia on 7 December 2015. No developments have been made in relation to the negotiations since March 2016.

63. The Heads of the Independent Redress Mechanism and Independent Integrity Unit have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that GCF disbursements are made only after GCF has obtained satisfactory protection against litigation and expropriation in the country or has been provided with appropriate privileges and immunities.

64. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Delivery by the AE to GCF of a certificate or legal opinion within 120 days of the Board approval confirming that it has obtained all its internal approvals;

(b) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval or the date when all internal approvals by the AE are obtained; and

(c) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP084

Proposal name:	Enhancing climate resilience of India's coastal communities
Accredited entity:	United Nations Development Programme (UNDP)
Country/(ies):	India
Project size:	Medium

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
Integrated project linking ecosystem-based adaptation to related climate-resilient livelihoods, reinforcing ecosystem services conservation while building adaptive capacity of coastal communities	The sustainability of the coastal restoration activities will depend on several factors. However, the three involved States have committed to ensure the operations and maintenance post-project.
Project activities will contribute to ongoing national-level development plans and have the potential to mainstream climate resilience in coastal development in India.	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. The project proposal takes an ecosystem-based approach to building climate resilience in three coastal states in India: Andhra Pradesh, Maharashtra and Odisha. Rather than taking a hard infrastructure approach, the project is designed around the principle that an ecosystem-based approach is both cost-effective and brings additional co-benefits to enhance climate-adaptive livelihoods.

4. Like hard infrastructures, restored coastal ecosystems are proven to buffer extreme events; however, coastal ecosystem-based adaptation can also provide sustainable livelihoods to fishing and farming coastal communities.

5. The project is designed around three outputs. The first output aims to enhance resilience of coastal and marine ecosystems by restoring mangroves, salt marshes, seagrass and corals. The second output on climate-adaptive livelihoods seeks to enhance the resilience of vulnerable coastal communities through training and technical support for climate-adaptive livelihoods and value

addition. Finally, the third output seeks to strengthen governance and institutional framework for management of coastal areas through operationalizing a National Coastal Mission and a pan-Indian coastal resilience network, as well as building effective coordination mechanisms for training, knowledge-sharing and planning.

6. The climate change adaptation imperative is clear for India's coastline, with the funding proposal citing 250 million people directly threatened by the impacts of climate change. Targeted states were selected by the government based on a consultative multi-criteria assessment of climate change vulnerability, climate change exposure and considerations for adaptation across a range of India's coastline, including both east and west coasts, and the presence and extent of coastal ecosystems.

7. The proposal requests USD 43.4 million in GCF grant financing. The requested grant amount has been revised significantly downward from the original request of USD 100 million, as a result of extensive discussions between the GCF Secretariat and the United Nations Development Programme (UNDP) as well as between UNDP and the Government of India. Co-financing from the Government of India totals USD 86.9 million for a total project size of USD 130.3 million.

8. The requested grant amount from GCF has been lower by:

(a) Removing specific activities for which the tangible results were more difficult to assess or the climate rationale was relatively less strong.

(b) Scaling down the number of targeted sites by removing the more urban target landscapes (i.e. those with higher proportion of urban population).

9. Co-financing comes from three state governments, as well as the ministry responsible for executing the project. The three state governments across which the project will take place have committed to contribute USD 46.9 million collectively. India's Ministry of Environment, Forest and Climate Change (MOEFCC), which serves as India's national designated authority (NDA) as well as the project's executing entity, has committed to contribute USD 20 million. Most of the co-financing is in the form of cash (95 per cent) and a small amount in the form of in-kind support for the project (e.g. staff time).

10. In terms of environmental and social safeguards (ESS), the screening performed by UNDP designates this project as moderate risk, equivalent to category B in the GCF interim ESS. The review by the Secretariat confirms the environmental and social risk category assigned by the accredited entity. Please refer to the ESS findings for more information.

2.2 Component-by-component analysis

Component 1: Enhanced resilience of coastal and marine ecosystems and their services (total cost: USD 53.4 million; GCF cost: USD 25.6 million, or 48 per cent)

11. The first output aims to enhance resilience of coastal and marine ecosystems by restoring mangroves, salt marshes, seagrass and corals. The activities in output 1 will be carried out at three levels: nationwide, state-wide (along India's 13 coastal states and union territories) and in the 24 target landscapes of the 12 coastal districts of the three targeted states.

12. The climate vulnerability assessment of India's coastline (activity 1.1) will establish a methodology and baseline dataset for long-term monitoring and tracking of climate vulnerability along India's coast. The tangible benefits of this activity are more difficult to assess, especially regarding the "decision-support tool" for adaptation planning and related online mobile platform and app. On the other hand, the decision-support tool could be viewed as an innovative aspect of the proposal depending on its usefulness and uptake.

13. Ecosystem conservation, restoration and maintenance (activity 1.2) absorb the largest share of the requested contribution from GCF. The selection of specific restoration and maintenance activities is justified in the feasibility study (i.e. the number of hectares for each type of coastal

ecosystem). However, the cost per hectare of the ecosystem restoration and maintenance activities varies considerably.

14. Although presented initially as purely an adaptation project, significant mitigation benefits could result from the restoration and maintenance of coastal ecosystems through carbon sequestration. Over the 30-year economic lifetime of the project, it is estimated that 3,682,980 tonnes of carbon dioxide equivalent will be sequestered. Therefore, it was recommended to present this project as cross-cutting.

Component 2: Climate-adaptive livelihoods for enhanced resilience of vulnerable coastal communities (total cost: USD 49.6 million; GCF cost: USD 12.8 million, or 26 per cent)

15. In output 2, training and technical support will be provided for climate-adaptive livelihoods and value addition in the three targeted coastal states of Andhra Pradesh, Maharashtra and Odisha. A total of 1,744,970 people (50 per cent women and 12 per cent heads of household) will benefit from these interventions.

16. Two broad sets of activities are envisioned:

(a) Enhancing climate-resilient livelihoods and enterprises through value chains and strengthened access to markets (activity 2.1), including: enhancing market access for sale of all goods and services; establishing and strengthening value chains to support ecosystem-based commodities; and improving access to microfinance, hybrid finance and other forms of finance to support micro-, small- and medium-sized enterprises for value addition.

(b) Improving capacities of local communities for community-based adaptation and climate-adaptive livelihoods (activity 2.2), including the successful uptake of climate-adaptive livelihoods.

17. Specific livelihood activities and their respective climate rationales are summarized in table 3 (section C.3) of the funding proposal. Some livelihood activities are financed by the GCF, while others are financed by partners. Those funded by GCF are focused on aquaculture and climate-smart intensification (e.g. system of rice intensification). Livelihood support absorbs USD 9.2 million of the USD 12.8 million contribution to this output from the GCF. GCF funding for the livelihoods activities covers the costs of stakeholder engagement, capacity building and technical assistance. The Government of India's co-finance covers most of the costs of equipment and infrastructure for the activities.

18. The economic and financial modelling sheds additional light on the cost effectiveness of the interventions. The financial internal rate of return for the interventions is positive (above 15 per cent) for the GCF-funded livelihood activities and withstands stress testing under a decreased revenue modelling scenario. The financial analysis annex notes that while "the livelihood enhancement activities as described above are still financially viable without GCF grants", the capacity-building and support activities to be funded by the GCF grants "may not be conducted at all or be conducted at a slow pace" given local government budget constraints.

19. It is suggested that the accredited entity integrated impact evaluation into the project implementation to measure the tangible impact and success of output 2, particularly if these activities are to be scaled up or replicated in the future.

Component 3: Strengthened coastal and marine governance and institutional framework (total cost: USD 20.9 million; GCF cost: USD 3.0 million, or 14 per cent)

20. Output 3 seeks to scale up ecosystem-based adaptation across all of India's 13 coastal states, islands and union territories. In terms of results, this output aims to strengthen governance and institutional framework for management of coastal areas by operationalizing a National Coastal Mission and a pan-Indian coastal resilience network, as well as building effective coordination mechanisms for training, knowledge-sharing and planning in the 24 target landscapes.

21. There are several mechanisms, networks or institutions to be established or operationalized under output 3. The cost-effectiveness of these activities is difficult to assess, particularly the tangible results for end beneficiaries during project implementation. Activity 3.1 will establish multi-stakeholder coordination structures in the 24 target landscapes, establish a pan-Indian coastal resilience network for knowledge exchange, support the new National Coastal Mission in integrating climate change adaptation and support the new National Coastal Mission to integrate climate risk management and ecosystem based-adaptation principles into national policies and schemes. Activities 3.2 and 3.3 are similarly broad, including facilitating three biennial intersectoral dialogue events, developing ecosystem-based adaptation plans, establishing a series of annual workshops under the pan-Indian coastal resilience network, etc.

Project management (total cost: USD 6.5 million; GCF cost: USD 2.1 million, or 33 per cent)

22. GCF grant financing of USD 2.1 million represents 32 per cent of project management costs, which is proportionated to the GCF's contribution to the total project cost. In turn, project management costs represent 5 per cent of total project costs. This is broadly in line with similar adaptation projects, and in line with the GCF policy on fees approved at B.19.

III. Assessment of performance against investment criteria

3.1 Impact potential *Scale: Medium*

23. Climate change (mainly represented by rising temperatures, changes in monsoon rainfall patterns, increased drought frequency, increased frequency and intensity of cyclones and extreme weather events, ocean warming and acidification, and sea level rise) will damage coastal ecosystems and have negative impacts on water resources, agriculture and the livelihoods of coastal communities.

24. The project is expected to directly benefit more than 1.7 million people (50 per cent women) represented by households participating in the new climate-adaptive livelihoods in the 24 target landscapes. A total of 10 million people (5.8 per cent of the total population) is expected to benefit indirectly from improved shoreline protection and the integration of ecosystem-based adaptation into coastal governance in the 12 coastal districts in the 3 states.

25. The project will save 122,766 tonnes of carbon dioxide equivalent (tCO_2eq) annually, and approximatively 3.7 million tCO_2eq over the 30-year economic lifetime of the project through carbon sequestration from the restoration and maintenance of coastal ecosystems, especially from mangroves.

3.2 Paradigm shift potential *Scale: Medium*

26. Potential for scaling up and replication: The project will enable scaling up through capacity development for key public actors in assessing the costs and benefits of large-scale adaptation interventions, planning for ecosystem-based adaptation, allocating funds for these interventions, overseeing the implementation and ensuring maintenance. Capacity-building for diversifying livelihoods and establishing market linkages has the potential for scaling up into other coastal states.

27. The project has substantial potential for knowledge and learning through the establishment of a Pan-Indian Coastal Resilience Network in support of exchanging knowledge, lessons learned and best practices across the country. The dissemination of knowledge products on coastal adaptation will also increase government officials' understanding of and technical capacities on ecosystem restoration and climate-adaptive livelihoods across coastal states. It is recommended that this project include an impact evaluation framework to enhance learning and capture lessons learned, which can be used for replication and scaling up.

28. The project will contribute to the creation of an enabling environment through the new India Coastal Mission, which will provide a framework to include climate risk management and ecosystem based-adaptation in national policies and schemes. Moreover, ecosystem-based adaptation will be integrated in the development planning of the three targeted states.

29. The linkage between community-based interventions and state- and national-level planning and policies will contribute to coastal planning and ensure future development considers ecosystem-based adaptation as a cost-effective approach for coastal protection. However, this potential for transformation requires a long-term and continuous commitment from the national government and governments of the three states to cover costs of operations and maintenance and ensure the sustainability of the assets.

30. The proposal claims it will shift the paradigm towards a new strategy of integrating ecosystem-centred and community-based approaches to adaptation into coastal management and planning. This approach has the potential to be mainstreamed into policy, planning and regulatory frameworks for coastal governance with dedicated allocations for replication and scaling up.

3.3 Sustainable development potential *Scale: High*

31. The project activities include restoration and conservation of coastal ecosystems using an ecosystem-based adaptation approach. This will enhance the provision of ecosystem goods and services and buffer against extreme weather events.

32. Jobs in the restoration and maintenance of ecosystems will provide economic benefits. Moreover, sustainable rice intensification will increase yield, which will benefit vulnerable small-scale farmers.

33. The social benefits will include improved nutrition, safety, social cohesion and community empowerment, which will lead to a sense of ownership of the restored ecosystems and resilient livelihoods.

34. Livelihood activities have been developed to target women and community support groups. Empowering women by providing economic opportunities will have other benefits on the health and education of families.

35. The project contributes to achieving the Sustainable Development Goals (SDGs), especially SDG 1 (no poverty), SDG 5 (gender equality), SDG 11 (sustainable cities) and communities, SDG 13 (climate action), SGD 14 (life below water) and SDG 15 (life on land).

3.4 Needs of the recipient *Scale: High*

36. Globally, the Indian coastline is expected to be amongst the regions most affected by climate change, affecting approximately 250 million people (14 per cent of the country's population, or 3.5 per cent of the global population) who live within 50 kilometres of India's coast.

37. The three target states – Andhra Pradesh, Maharashtra and Odisha – have been selected by the Government of India based on their high vulnerability to the impacts of climate change and their representation of the range of India's coastline, including both east and west coastal areas. Moreover, the populations of these states are largely rural and depend primarily on agriculture and fisheries for their livelihoods. These livelihoods are particularly vulnerable to the impacts of climate change because (i) increased climate variability, rising temperatures and increasing frequency/intensity of droughts and floods are reducing agricultural productivity; (ii) storm surges are damaging agricultural land and property through erosion, coastal floods and saline intrusion; and (iii) climate change effects on ocean temperatures and acidity are resulting in migration of and reductions in fish populations and damage to breeding grounds.

38. The government does not currently have the full capacities and knowledge to promote ecosystem-based adaptation on its own. Moreover, most of the ecosystem restorations are of a public good nature and have no reflows, and thus will not attract investments from the private sector. With regard to the livelihood activities, the financial return at household scale is minimal.

39. The project will invest in technical assistance in order to strengthen institutions and implementation capacity to ensure long-term impacts are maintained.

3.5 Country ownership *Scale: High*

40. The project is aligned with various priorities of India's NDCs, including agriculture, planned afforestation (e.g. mangroves), coastal regions, disaster management and security of rural livelihoods. Moreover, the proposal supports the National Action Plan on Climate Change (2008). At state level, the project interventions are included in the state action plans on climate change for the three target states: the State Actions Plan for Andhra Pradesh (2012); Maharashtra State Adaptation Action Plan on Climate Change (2014); and Odisha Climate Change Action Plan (2010).

41. The new National Coastal Mission will provide a framework for incorporating ecosystem considerations into vulnerability assessments, decision-making and the monitoring of adaptation measures.

42. UNDP has long-standing experience in working with the Indian Government, as well as on the resilience of the coasts and livelihoods. The executing entity (MoEFCC) has been previously involved in almost 40 projects in the area of climate change and natural resources management.

43. In 2016, extensive consultations took place in the three states on priorities for adaptation interventions. The project will foster the participation of the public sector, private sector and civil society to ensure their ownership and commitment to sustain the project impacts in the long term.

3.6 Efficiency and effectiveness *Scale: Medium*

44. The analysis of Outputs 1 and 2 show cost effectiveness for the coastal restoration and livelihood activities. The economic internal rate of return for the coastal protection activities is 15–25 per cent, while that for the livelihood activities is 16–22 per cent depending on geographic location. However, seagrass restoration is only economically viable with a discount rate of 3 per cent.

45. For mitigation, the estimated cost per tCO_2eq is USD 9.80.

46. The project leverages significant co-financing from the Government of India. This co-financing was pledged through commitment letters and will be disbursed as per the annual workplan, which is aligned with the project disbursement schedule and implementation timeline. GCF will disburse in annual tranches, and the accredited entity will report on the co-financing mobilized and activities achieved in the annual performance reports.

47. The feasibility study demonstrates the value of ecosystem-based adaptation for similar ecosystems in South-East Asia. The proposed interventions have been tested in India and proven to be successful.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

48. The focus of the project is on enhancing the climate resilience of the coastal communities in India through an ecosystem-based, community-centered approach to adaptation. The key

components of the project include (i) enhancing the resilience of coastal and marine ecosystems and their services; (ii) climate-adaptive livelihoods for vulnerable coastal communities; (iii) and strengthening governance, institutional framework, and knowledge management for climate-resilient management of coastal areas.

49. The accredited entity has screened the project against its Social and Environmental Standards Procedure and deemed this project as having moderate environmental and social risk, equivalent to the category B in the GCF interim ESS. As such, the accredited entity has prepared an Environmental and Social Management Framework (ESMF), as required under the accredited entity's procedure and the GCF ESS for Category B projects. The project ESMF identifies potential risks and offers avoidance and/or mitigation measures and processes to reduce impacts from the various activities. The initial review by the Secretariat confirms the environmental and social risk category assigned by the accredited entity. Overall, the project activities are likely to have some short-term, small-scale environmental impacts during implementation that can be readily mitigated following the due diligence and mitigation approaches presented in the ESMF. The project will ultimately have considerable, long-term environmental and social benefits as it seeks to strengthen the resilience of the vulnerable ecosystems and communities in the States of Andhra Pradesh, Maharashtra, and Odisha involving 24 target landscapes in 12 coastal districts. The project activities are likely to have some short-term, small-scale environmental impacts during implementation that can be readily mitigated following the due diligence and mitigation approaches presented in the ESMF. The project will ultimately have considerable, long-term environmental and social benefits as it seeks to strengthen the resilience of the ecosystems and communities in the identified vulnerable coastal regions of the country. The project activities include restoration and conservation of coastal ecosystems using an eco-based adaptation approach. This will lead to improved ecosystem functioning that will yield short-, medium- and long-term environmental and social benefits. Examples of such benefits include improved hydrology and biodiversity conservation as well as enhanced provision of ecosystem goods and services, including providing buffers to environmental assets and communities in times of disasters and extreme weather events. This will, in turn, lead to enhanced climate resilience in coastal areas through maintaining such ecosystem goods and services and deriving benefits from sustainable livelihoods in the face of climate change in coastal areas.

50. Activities to enhance resilience of coastal ecosystems and their services will involve preparation of sites for ecosystem restoration, including (i) mangrove restoration; (ii) improvement of hydrology of mangrove areas, coastal lagoons, and river mouths; (iii) reforestation of catchment sites; (iv) dune vegetation restoration; and (v) rehabilitation of corals and seagrass beds. These activities are expected to yield environmental and social benefits in the short, medium and long-term. Examples of such benefits include improved hydrology, biodiversity conservation and enhanced provision of ecosystem goods and services, including providing buffers to environmental assets and communities in times of disasters and extreme weather events. This will, in turn, lead to enhanced climate resilience in coastal areas through maintaining such ecosystem goods and services and deriving benefits from sustainable livelihoods in the face of climate change in coastal areas. The implementation of ecosystem restoration activities is also expected to generate potential environmental impacts, such as effects on the hydrology of the coastal areas, erosion and sedimentation, and on local habitats. All efforts will be undertaken to reduce the environmental impacts of such works, e.g., work will be undertaken during the dry season and in such a way as to reduce erosion. In addition, site-specific planning will be undertaken prior to implementation to ensure that any potential negative environmental consequences are identified, and appropriate measures are undertaken to prevent such impacts as far as possible. Detailed ecosystem- and site-specific assessments, protocols and guidelines on ecosystem-based adaptation and hydrological rehabilitation will be developed to guide the implementation of the restoration interventions.

51. The choice of climate-adaptive livelihood activities will consider the suitability of the livelihood to the landscapes to avoid or reduce adverse environmental and social impacts. Further assessment of the impacts of likely livelihood activities particularly aquaculture systems undertaken by the accredited entity indicated low adverse environmental impacts of livelihood

activities on the receiving environment. The use of low impact sustainable aquaculture system is expected to promote sustainable resource use by reducing pressure on the wild stock and natural habitats and designed based on the assessed carrying capacity and other land use and environmental considerations as required by the national laws and regulations.

52. The ESMF describes environmentally sensitive areas such as national protected areas and wildlife sanctuaries where some activities may also take place. The policies related to national protected areas and other areas designated for conservation provide the recognition of the roles of communities in the management of such areas. A target landscape integrated management plans or area integrated management plans will be developed that describe the planning, management, and implementation of activities in the various sites of the project. The integrated management plans will be consistent with existing protected area management plans and will identify activities to be implemented that would only be allowable under the protected area regulations and by the protected area authorities. Further, any specific biodiversity management action plans that may be required following further due diligence of the site will be incorporated into the management plans. The ESMF describes mitigation measures to avoid and/or minimize impacts on flora/fauna, ground and surface waters, air, soil erosion, and on waste management, noise and vibration during construction, social impacts particularly on the vulnerable people, etc. Performance criteria for the project include avoidance of activities that have potential deleterious impacts on natural habitats which would include infauna, vegetation and turtle nesting or breeding sites.

53. The project does not anticipate any land acquisition or resettlement as a result of the activities. Most of the lands that will be utilized are public or government-owned, and where the land rights have been awarded to communities or individuals, the project will seek consent. However, the ESMF recognizes potential restrictions of access of people to natural resources that could also temporary impact on their livelihoods. Specific plans to restore temporary losses of income and restore temporarily the livelihoods of affected communities whilst the activities that restrict access are being carried out will implemented by the executing entity.

54. The project recognizes the presence of potentially vulnerable populations such as the scheduled caste and scheduled tribes. A Social Inclusion Planning Framework (SIPF) was developed as part of the ESMF which provides the process for ensuring that “other backward classes, scheduled castes, and scheduled tribes (OBC/SC/ST) are involved and gets benefitted from the project. The SIPF presented the considerations in developing integrated management plans or specific social inclusion plans, social assessments for sites where the presence of scheduled caste and scheduled tribes have been established, specific social inclusion plans, benefits sharing, appropriate consultations, grievance redress, and the process for obtaining support and consent of the communities.

55. The project makes provision for a complaint’s register along with a two-tiered Grievance Redress Mechanism (GRM) consistent with the accredited entity’s safeguards and stakeholder response procedures. The GRM has further been designed in consideration of the specific local context and draws on existing processes and procedures for the resolution of complaints and grievances in India. All complaints regarding social and environmental issues can be received either orally (to the field staff), by phone, in complaints box or in writing to the UNDP, MOEFCC or the Construction Contractor. A key part of the grievance redress mechanism is the requirement for the project proponent and construction contractor to maintain a register of complaints received at the respective project site offices. The ESMF described the Safeguards Manager/Officers and Community Development Manager as the responsible individuals to receive and follow through any complaints on the project. These roles will also need to be described as part of the ESMF section describing ESMF administration as these are recognized as key functions in implementing and monitoring the ESMF and safeguards processes of the project. Further, the ESMF also described potential conflicts within the communities over participation and benefits sharing. The GRM will need to include such aspects in its design and process including use of traditional conflict resolution practices.

56. The EMSF includes public consultation as part of the stakeholder engagement plan. The project was discussed with a wide range of stakeholders including relevant government departments, industry groups, NGOs, and individual community members and approved by the Government. Extensive on-ground consultation has been undertaken during the design of the project and the consultation with any affected communities will continue. It is anticipated that based on the communities' needs, the projects will be fully accepted. As part of the project due diligence, consultations were undertaken as to the likelihood of any of the project's activities involving indigenous people and/or ethnic minorities. A number of minority groups, e.g., scheduled castes and tribes were identified during the consultation. These groups will continue to be represented throughout the project following the guidance of the social inclusion planning framework. The project will be inclusive and seek to involve and empower minority groups recognizing also that the country has a number of laws that aid in the protection of such groups.

57. As the implementing agency, Ministry of Environment, Forestry and Climate Change (MOEFCC) will be responsible for the implementation of the EMSF via the delivery organizations such as state structures. The EMSF will also be part of the tender documentation. The MOEFCC or its delegate will assess the environmental and social performance of the contractors in charge of delivering each component throughout the project and ensure compliance with the EMSF. A national and state level project steering committee will provide overall guidance and strategic decisions on the project while project management units ate various levels will support the implementation and management of the project including implementation of ESMF, monitoring, and reporting.

4.2 Gender policy

58. The proposal contains a comprehensive gender assessment; therefore, it complies with the operational guidelines of the GCF Gender Policy and Action Plan. The gender assessment outlines structural and cultural factors contributing to gender and social issues in India that are relevant to the project. It also provides the context of gender issues, including national legal and regulatory frameworks that promote gender equality, livelihood opportunities in the formal and informal sectors, participation of women in national and local decision-making platforms, and access to resources and services, such as land, education and skills development by women and vulnerable groups, such as scheduled castes and scheduled tribes. The gender assessment also outlines the needs and priorities of women raised at stakeholder consultations conducted during the project conceptualisation and design stages, and it identifies entry points presented by the project that will ensure access to project benefits for both men and women as well as expected quantitative and qualitative outcomes.

59. The proposal contains a project-level gender action plan (GAP) that translates opportunities for mainstream gender in the project into actionable items. The GAP contains gender-responsive outcomes of the project activities, gender–performance indicators and assigned responsibilities of institutions involved in implementing the project. Additionally, gender-disaggregated targets and timelines for implementation of activities have been included in the GAP.

60. Direct and indirect beneficiaries have been disaggregated by gender under the GCF core indicators for impact potential in the funding proposal. Furthermore, the proposal's logic framework incorporates, at the fund-level impacts and outcome and output levels, indicators with gender-disaggregated targets, including some of those in the project-level GAP, to capture gender-sensitive results in the project's monitoring and reporting. In addition, the project ensures access to its benefits by vulnerable groups such as female-headed households. Targets for female-headed households as project beneficiaries have been included in the GAP and the logic framework of the project.

4.3 Risks

61. **Overall programme assessment (medium risk):**

(a) The GCF grant is USD 43.4 million accounting for 33 per cent of the total financing, with the remaining 67 per cent coming from leveraged co-financing from the Government of India, namely three State Governments and MOEFCC. Given the significant amount of co-financing, the project should ensure that co-financing from the Government of India is disbursed, monitored and reported as planned.

(b) The disbursement schedule is expected to be organized in 6 different tranches. It is recommended that the GCF disbursements of the grant in the 6 tranches is subject to satisfactory reporting based on key milestones in line with the baselines, targets, and indicators in the funding proposal to be evidenced in the APRs.

(c) The benefits directly linked to the climate impact of the project may be less significant than currently described in the proposal. The project assumes that the livelihood support activities create diversified income streams that will allow people to survive despite crop failures and declining stocks, which are climate change impacts. However, these risks could arise from non-climate impacts, such as crop diseases, insect pests or changes in market prices at the national/global level.

62. **AE / EE capability to execute the current programme (low risk):**

(a) UNDP has an extensive track record in preparation and implementation of projects in developing countries; and

(b) The Executing Entity, MOEFCC, has an extensive experience in executing projects funded by external donors. It will be engaging with three State Governments, which also have track records of implementing various sizes of forestry projects (from USD 2 million to 404 million).

63. **Programme-specific execution risks (medium risk):**

(a) Performance risk (medium):

(i) The project aims to improve the resilience of coastal and marine ecosystems by conducting vulnerability assessments in 13 coastal states. The project should quickly deliver detailed climate vulnerability assessments that clearly identify the areas of interventions. The State departments will have to procure reliable counterparties to deliver a high-quality research in a short time.

(ii) In component 2, the project plans to deliver 20 different activities in large areas of the Indian coasts. The efficient coordination and support from the hosting States will be critical to provide tailored support to the local needs. For example, specific livelihoods, beneficiary groups, and participating community organizations will be selected in each of the 24 target landscapes based on the livelihoods assessment and value chain analysis, which may be time consuming in some areas. The project component 3 envisages the strengthening of a coastal and marine governance and institutional framework and the capacities of the coastal communities as a mitigation measure. However, the activities planned in the project are expected to be executed separately in the 3 States, which allows the States to work independently with a parallel implementation, thus avoiding a complex coordination of the 3 States at the same time. It is suggested that the AE ensures that the GCF's funding is made available along with the co-financing from the GoI and/or the State Governments.

(iii) The Government of India announced plans to invest USD 58 billion to develop ports and hard infrastructure, such as steel and petrol-chemical sectors, in the coastal

areas through public-private partnership. To mitigate the risk of planned investment not incorporating ecosystem consideration, the project proposes capacity building activities for the existing interdepartmental platforms (CZM Authority) and to establish a national mission (National Coastal Mission), which will provide a policy and institutional framework for the project. The long-term government's commitment to ensure the balance between economic development and environmental impact will be critical.

(iv) One of the project activities is to switch current farming practices to new crops and methods. The AE has proposed awareness raising activities to induce farmers to change their behaviour.

(b) Economic and financial viability (medium):

(i) The economic analysis was carried out for Output 1 and Output 2 over a 25-year period. UNDP presented a sensitivity analysis with 3 scenarios for 3 targeted states. The EIRR for output 2 ranges from 20% to 26%. The EIRR for output 1 for Andhra Pradesh and for Odisha is more than 27%. In Maharashtra state, the analysis for Output 1 results in 2 out of 3 EIRRs below 10%. The project could consider strengthening the main activities delivering Output 1 in Maharashtra, so that economic viability is demonstrated.

(ii) The financial analysis was conducted for different activities under Output 2 over a 15-year period, resulting in internal rates of return of over 10%. Financial analysis is not considered for Output 1 and Output 3 (56% of the total project cost), given the public good nature of the activities under these two outputs.

64. **GCF's portfolio concentration risk (low risk):**

In case of approval, the impact of this proposal on the GCF portfolio risk remains non-material and within the risk appetite in terms of concentration level, results area or single proposal.

65. **Conclusion (medium risk):**

(a) It is recommended that Board considers the above factors in its decision.

Summary Risk Assessment		**Rationale**
Overall Programme	Medium	• The AE has relevant experience required for implementation of the project. • The State governments are providing considerable co-financing for the projects. • For successful execution of the projects, the AE needs to ensure that the co-financing is available in a timely manner.
AE / EE capability	Medium	
Project specific execution	Medium	
GCF's portfolio concentration	Low	
Compliance	Low	

4.4 Fiduciary

66. The national executing entity – also referred to as the national implementing partner in UNDP terminology – is required to implement the project in compliance with UNDP rules and regulations, policies and procedures, including the National Implementation Modality (NIM) Guidelines.

67. As the accredited entity, UNDP will disburse funding (received from the GCF according to the funded activity agreement disbursement schedule) to the MOEFCC, as the executing entity, for the purposes of undertaking the project. MOEFCC is accountable to UNDP for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

68. Under the UNDP national implementation modality, UNDP advances cash funds on a quarterly basis to the executing entity for the implementation of agreed and approved programme activities in accordance with UNDP standard policies and the NIM Guidelines. The executing entity reports back expenditures via a financial report on a quarterly basis to UNDP.

69. The financial management and procurement of this project will be guided by UNDP financial rules and regulations. During implementation, UNDP will provide oversight and quality assurance in accordance with its policies and procedures, and any specific requirements in the accreditation master agreement and project confirmation to be agreed with the GCF.

70. The project will be audited in accordance with UNDP policies and procedures on audits, informed by and together with any specific requirements agreed in the accreditation master agreement. According to the current audit policies, UNDP will be appointing the auditors.

4.5 Results monitoring and reporting

71. The adaptation project provides values for the estimated number of direct beneficiaries (approximately 1,744,970 people, of whom 50 per cent are female) in the 24 target landscapes of the three Indian states and for the 10 million people identified as indirect beneficiaries. The logic framework and arrangements for reporting comply with GCF performance measurement frameworks and reporting frameworks.

4.6 Legal assessment

72. The Accreditation Master Agreement was signed with the Accredited Entity on 5 August 2016, and it became effective on 23 November 2016.

73. The Accredited Entity has provided a certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

74. The proposed project will be implemented in the Republic of India, country in which GCF is not provided with privileges and immunities. This means that, amongst other things, GCF is not protected against litigation or expropriation in this country, which risks need to be further assessed. The Secretariat submitted a draft of the privileges and immunities agreement to the Government of India on 11 March 2016. Further clarifications have been provided in response to inquiries from the Accredited Entity concerning the status of the Green Climate Fund.

75. The Heads of the Independent Redress Mechanism (IRM) and Independent Integrity Unit (IIU) have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where the GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by the GCF are made only after the GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

76. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Signing of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval; and

(b) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP085

Proposal name:	Green BRT Karachi
Accredited entity:	Asian Development Bank (ADB)
Country/(ies):	Pakistan
Project/programme size:	Large

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
Innovative project with regard to (i) the world's first biomethanization hybrid bus with (ii) a dedicated biofuel plant meeting 100% fuel demand so the climate rationale benefits from a well-to-wheels analysis	The climate proofing of the road is a complex piece of engineering; according to Asian Development Bank (ADB) the skills are not present in Pakistan. A competent international firm is to be hired for engineering
The project has the potential for replication at the regional, national and global level as the first biomethane hybrid bus rapid transit (BRT) system	The operational and construction arrangements for the biogas facility will be confirmed only after the full completion of feasibility study, which is under development
Once constructed, the BRT will be operated through public-private partnerships while the Government of Pakistan bears the high upfront capital expenditure	The operational and maintenance systems for the hybrid buses need to be set up; capacity-building for operators and bus dealers is required for the new technology
Lifetime emission reduction of 2.6 metric tonnes of carbon dioxide equivalent ($MtCO_2eq$) with a GCF cost of USD 19/tCO_2eq	The relocation plan of businesses along the BRT line needs to be finalized and approved by the stakeholders
High leverage ratio of 1:11 for GCF financing, contributing only the climate change element, hence providing a clear additionality to the project	The political situation has changed with a new government having just been elected
First complete transport project to be tabled for Board approval	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. The project aims to establish a 30 km, fully segregated bus rapid transit (BRT) system operated with biomethane hybrid buses and a dedicated biogas plant for fuel supply, directly benefiting 1.5 million people in Karachi, Pakistan. The total project cost is USD 583.5 million. GCF is requested to provide USD 37.2 million in the form of loan, with an interest rate of 0.75 per cent and a door-to-door tenor of 20 years with a 5-year grace period, and USD 11.8 million in the form of grant, totalling USD 49 million. The project expects to have a GHG emission reduction of 2.6 million metric tonnes of carbon dioxide equivalent ($MtCO_2eq$) for a lifespan of 30 years and is categorized as A based on the E&S screening mainly based on the involuntary resettlement.

4. Karachi is one of the most densely populated cities in the world with an estimated population of 14.9 million. The current transportation system fails to provide adequate services to the residents with regard to connectivity, affordability, efficiency and safety. Furthermore, it relies heavily on informal networks and vehicles, which are often poorly operated and maintained, resulting in more congestion and GHG emissions.

5. The project is built on the ongoing efforts made by the Government of Pakistan to address the above-mentioned challenges. With support from the Japanese International Cooperation Agency, the Government developed a Transport Master Plan for Karachi. In line with that, the accredited entity (AE) has provided technical assistance to prepare this project, including the establishment of (i) TransKarachi, the executing entity for the project, a special purpose vehicle, 100 per cent owned by the provincial Government of Sindh, and (ii) Sindh Mass Transit Authority, the oversight body.

6. The borrower of this project is the Government of Pakistan, which will on-lend the GCF loans to the Government of Sindh. Given the high upfront investment cost for mass transit systems, the Government of Pakistan does not expect to recover the project cost and/or repay the debt from the future revenue stream, including tariff collection and other commercial operations. The project therefore excludes the operation of the BRT system from the project scope.

7. The project, however, will allow private sector participation in operations through public–private partnerships (PPPs) for different service areas, namely (i) bus operations; (ii) system control, encompassing the fare system, station services and a bicycle-sharing system; (iii) the financial clearing house; and (iv) commercial services such as property management and advertising.

2.2 Component-by-component analysis

Component 1: Infrastructure (total cost: USD 296.7 million; GCF contribution: USD 7 million)

8. This component aims to finance the core infrastructure for the BRT, including:

(a) Twenty-eight km of BRT infrastructure on the main corridor, including 25 stations and dedicated lanes, completed as designed.;

(b) Two km of common corridor BRT infrastructure, including three stations, dedicated lanes, pedestrianization and façade uplifting on the common corridor;

(c) Mixed traffic lane(s), pavements, green areas, on-street parking and street lighting rebuilt over the whole length of the corridor;

(d) Bicycle lanes built over the entire corridor;

(e) Two depots and one staging facility with commercial areas;

(f) Bus stops over 100 km of off-corridor bus routes; and

(g) Seventy-eight safe (bridge, tunnel or signalized if at-grade) pedestrian crossings along the BRT corridor.

9. GCF is expected to provide a USD 7 million grant for this component. This is to partially cover the incremental adaptation cost of USD 10 million to improve the drainage capacity of the corridors in line with the result of the climate risk vulnerability assessment and reassessment of the technical design of the corridor. The AE explored different design methods for pavements and concluded that a continuously reinforced concrete pavement strip lane pavement using cncPave software is deemed optimal against the baseline of the flexible pavement based on the South African Technical Recommendations for Highways.

Component 2: Equipment (total cost: USD 93.1 million; GCF contribution: USD 37 million)

10. This component is to procure and construct the following equipment and facility:

(a) A modern low-emission BRT fleet (mixture of 9 m, 12 m and 18 m in length);

(b) A distance-based fare collection system, BRT control centre and an intelligent transport system (ITS) to operate BRT services;

(c) A bicycle-sharing facility and e-pedicab vehicles; and

(d) A biogas facility.

11. **Buses:** 199 new biomethane hybrid buses will be procured, and GCF is requested to provide USD 27 million in the form of a loan. Biomethane hybrid buses are technically identical to compressed natural gas (CNG) hybrids but use a different type of energy source, namely biomethane instead of CNG.

12. Among different technologies, including diesel, diesel hybrid, CNG, CNG hybrid, biomethane hybrid and battery electric buses, the project opted for biomethane hybrids, highlighting the following reasons: (i) GHG as well as air pollution impacts are significant; (ii) the total economic costs of biomethane hybrid buses are comparable to conventional diesel buses; and (iii) CNG hybrid bus technology is proven with multiple existing manufacturers and has been operating in large fleets for more than five years in Chinese cities.

13. **Bicycle sharing and e-pedicabs:** for last-mile connectivity, which is one of the unique features of this project, 300 e-pedicab vehicles will be used as well as 500 bicycles, e-bicycles and cargo bicycles. GCF is requested to provide USD 3.8 million in the form of a grant for this subcomponent.

14. **Other equipment:** this subcomponent is to procure ITS and fare collection systems and to establish a BRT control centre that enables a centralized operation control.

15. **Biogas plant:** a dedicated biogas plant will be built and operated to meet 100 per cent of the biomethane demand from the BRT Red Line bus fleet, producing 64,000 m^3 of biogas per day using the bio-waste from a cattle colony in the region. The project expects that the facility can be operated in a cost-recovering manner while it contributes to the reduction of the operations and maintenance (O&M) of the BRT system. GCF is requested to provide USD 10.2 million in the form of a loan for this subcomponent.

Component 3: Environment and social mitigation (total cost: USD 22 million; GCF contribution: 0)

16. The project involves restructuring of the bus industry, aiming to absorb the existing bus operators under the new BRT system. As the cost for the bus fleet will be financed upfront by the project and then leased to the private sector operators, it reduces the investment requirement for the private sector to participate in the bidding process. Also, a bus scrapping programme and compensation mechanism for non-participating existing operators are part of the project to make sure that the current buses and vehicles are removed from the roads and are not competing with the new BRT system.

Component 4: Project management, capacity-building and monitoring (total cost: USD 59 million; GCF contribution: USD 1.05 million)

17. This component includes project management activities, including construction supervision, capacity-building of TransKarachi and Sindh Mass-Transit Authority (SMTA), support for the initial operation of the BRT system, and GHG impact monitoring and reporting. GCF is requested to provide USD 1.05 million in the form of a grant for GHG monitoring.

III. Assessment of performance against investment criteria

Table: Summary of Investment Criteria

Impact potential: High	Needs of the recipient: High
Paradigm shift potential: High	Country ownership: High
Sustainable development potential: High	Efficiency and effectiveness: High

3.1 Impact potential *Scale: High*

18. The project promotes a modal shift from passenger cars/private taxis to mass transit and introduces non-motorized transport such as bicycle lanes, bicycle sharing and e-pedicabs to connect passengers for the last mile.

19. The GHG emissions calculation is based on clean development mechanism methodology ACM0016, Mass Rapid Transit Projects, using a well to wheels analysis, with a possible reduction in emissions of 87,000 tCO_2eq per year and cumulative of about 2.6 $MtCO_2eq$ for the lifetime of the project.

20. It will directly benefit about 1.5 million people in Karachi, providing major time savings for residents of Karachi estimated at USD 59 million per annum. Enhanced access will increase the share of female passengers on public transport to 20 per cent from currently less than 10 per cent. Moreover, improved air quality in Karachi through an annual reduction in emissions of 723 t of nitrogen oxides, 5.5 t of fine particulate matter ($PM_{2.5}$) and 9.5 t of sulphur dioxide will improve the health of Karachi citizens.

3.2 Paradigm shift potential *Scale: High*

21. The project will set up the first biomethane hybrid BRT in the world. The integration of non-motorized transport (NMT) facilities, including cycle lanes and e-pedicabs, is another innovation of the project and can be integrated in other cities.

22. Within Karachi: the Transport Master Plan includes five other BRT lines, excluding the project line (Red Line), two of which are also included for pre-feasibility within this project. Using the same approach and assuming comparable ridership levels, the biogas facility could be expanded and would have sufficient capacity to cover 100 per cent of demand with biomethane hybrid units for all lines.

23. Other cities in Pakistan: based on the 2017 census, Pakistan has 25 cities with more than 250,000 inhabitants and 10 with more than 1 million that could opt for a BRT system; biogas is available in all cities either from landfills, sewage plants, agro-industries or animal waste. Pakistan wants to build more BRT systems with low-emission buses.

24. International: many cities are looking at electric buses without taking into account the potential of using biomethane and thereby also achieving zero emission units. The project therefore considers that it has a significant replication potential for other cities planning BRT systems.

3.3 Sustainable development potential *Scale: High*

25. The use of biomethane hybrid buses and the modal shift will have a positive impact on the air quality in Karachi, with an average annual reduction in emissions of 5.5 t $PM_{2.5}$, 723 t nitrogen oxides and 9.5 t sulphur dioxide.

26. The cattle colony in Karachi is the largest in Asia with 400,000 animals creating 7,200 t of manure a day. The fallen dung on concrete floors is drained into the Arabian Sea through seven main drains using 50,000 t of groundwater and fresh water a day. Besides the wastage of a huge quantity of fresh water, this has repercussions for marine life. The biogas plant will reduce fresh water usage while reducing massively the discharge of effluents to the Arabian Sea and reducing problems of odour and mosquitos.

27. The project will benefit Karachi, a city with an estimated total population of 14.9 million, 75 per cent of whom are poor or low income, through increased access to safe, reliable and affordable public transport. Owing to the increase in safety features, the percentage of female passengers on the BRT will be increased to 20 per cent compared with the baseline 10 per cent. Overall, the project is expected to generate 2,130 jobs directly through future BRT operations, including 1,424 jobs for station services (such as ticketing, security and cleaning), 615 jobs in bus operations (such as driving, conducting and mechanics) and 81 TransKarachi staff. The project will also encourage women's meaningful participation by ensuring that 10 per cent of BRT operations employees and TransKarachi staff are women.

3.4 Needs of the recipient *Scale: High*

28. Pakistan is ranked number seven in the Long-Term Climate Risk Index (1997–2006 averages) with losses amounting to 0.6 per cent of gross domestic product, equivalent to USD 3.8 billion. The BRT project will contribute to addressing the flooding vulnerability resulting from the adverse impacts of climate change. The drainage system, which is an integral part of the BRT infrastructure and the urban roads, will be carefully designed to adapt to this flooding risk.

29. The traffic congestion in the main streets of Karachi has deteriorated year on year; a well-managed mass transit system is needed in the city as well as in the rest of the country. BRT systems in place in Islamabad and Lahore have been met with great fanfare from residents of each city, especially in Islamabad, where the commute time from Rawalpindi to Islamabad has been reduced by about 45 minutes during peak traffic periods. The present mass transit system is not organized and runs on an ad hoc basis; having a scheduled and managed system is needed for residents to plan daily activities.

3.5 Country ownership *Scale: High*

30. The technology needs assessment (2016) of Pakistan identified the implementation of BRT systems as one of the priority technology needs in the transport sector. The perspective plan Pakistan Vision 2025 recognizes climate change as one of its priority areas and includes the modernization of transportation as one of its seven pillars. Also, in accordance with the National Climate Change Policy of 2012, GHG emission mitigation in the transport sector includes the development of mass transit systems in metropolitan cities, the adoption of environmentally friendly transport technologies and encouraging non-motorized modes of travel. The policy indicates that managing emissions in the transport sector is crucial for tackling climate change.

31. The Government of Pakistan is contributing USD 90 million in the form of a grant to the Government of Sindh for the project as well as taking all the sovereign risk of the project, thereby highlighting the priority enforcement policy for action within the transport sector.

3.6 Efficiency and effectiveness *Scale: High*

32. BRT and the adjacent infrastructure (e.g. cycle lanes, pedestrianization) whose amortization is in the range of 30 years will be financed by public funds. Private sector participation is considered for the BRT operations as well as for the biogas facility operation. The construction of the biogas plant and bus procurement will be done by the Government of Sindh/TransKarachi.

33. Procurement of the buses will be done via bulk procurement, then the operation of the buses will be leased to private sector operators on a PPP model, which will account for the total cost of ownership of the bus. Bulk procurement in the retrofitting and replace market is one of the better models, as the capital expenditure risk to the operator is replaced by operating expenditure, which private operators are more comfortable with assuming. In the first year of BRT operations the demand is expected to be 320,000 passengers per day. By 2021, savings from vehicle operating costs are expected to reach USD 3 million per year.

34. The co-financing for the whole project is good at 1:11 for the GCF contribution. The economic analysis yielded an economic internal rate of return of 18 per cent, demonstrating the project's economic viability. The economic analysis estimated the benefits of the project due to time savings, vehicle operating cost savings, improved road safety and reduced air pollution and greenhouse gas emissions. Together, these benefits yielded an EIRR of 17% over 23 years, which exceeds ADB's hurdle rate of 9%, demonstrating the project's economic viability. The EIRR is robust to a 20% increase in capex, a 20% decrease in ridership and a two-year delay in system opening, remaining above 9% in all three cases.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

35. The project is being prepared under the safeguard policy of the AE, which is materially equivalent to the interim environmental and social safeguards (ESS) standards of GCF. Under the Asian Development Bank (ADB) system, the project has been categorized as Category A due to its diverse impacts. GCF agrees with this categorization, noting that while the long-term negative environmental impacts are few and minor, the short-term risks and impacts of the construction involved would be numerous and significant. This categorization also appropriately reflects the project's social risks as it is expected to displace a number of structures and people's livelihoods. A comprehensive environmental impact assessment with environmental management plan (EIA/EMP) and a resettlement plan (RP) have been prepared.

36. Salient risks and impacts. The project is designed to improve the environmental and social conditions in its service area. Once completed, it will have positive impacts on air quality, noise, vehicular traffic, access to transport and the general economic development in the area. As such, there are only a few long-term and design-related risks for the project. These include: (a) minor changes in microclimate and local ecology due to the removal of more than 23,000 trees within right-of-way areas; (b) possible adverse impacts of the new transport system on women and gender equity; and, (c) the displacement of institutional and commercial structures and vendors. There will be, however, a number of significant short-term risks and impacts. These include: (a) possible traffic disruption/congestion during construction; (b) potential exposure of workers to poor occupational health and safety standards; (c) exposure of the host communities to health, safety risks due to labor-influx, including potential for the spread of HIV/AIDS and a possible increase in criminality; (d) labor exploitation and poor working conditions, including potential hiring of children by small subcontractors; (e) construction noise, vibration, dust and air quality impacts; (f) drainage and water quality impacts due to sedimentation/clogging of water channels; and (g) potential pollution and health impacts associated with improper disposal of construction

spoils, solid waste and hazardous materials (at camps and construction yards). The project will not affect any cultural heritage structure or site in the city.

37. The EIA/EMP has adequately addressed the identified risks and impacts and has identified measures that are consistent and compliant with GCF ESS standards. The cut trees will be offset by planting replacement trees within and outside the project boundaries, and in accordance with local regulations. A gender action plan (GAP) has been prepared to address potential impacts on women and gender equity issues. The displacement of structures and livelihoods are being addressed in the RP. In terms of construction-related impacts, contractors will be required to prepare a site-specific environmental management plan (SSEMP), which will be reviewed and approved by the TMTD. The SSEMP would provide detailed measures for air quality controls, noise controls, traffic management, occupational safety and health, drainage management, spoil and waste disposal. The contractors are also required to prepare other sub-plans, including utility relocation plans, tree planting and management of borrow areas, construction camps, emergency response and hazardous materials management. To address the risk of the spread of HIV at the job site and surrounding communities, the contractor will be required to provide an HIV screening and awareness campaign among workers. The EIA/EMP would need to address and provide measures to improve living conditions at labour camps and improve other working conditions, including compliance to mandated minimum wage and policies on the hiring of children. The EIA/EMP would also need to address potential increases in criminality due to the influx of migrant labour.

38. The EIA/EMP describes an elaborate institutional arrangement for the implementation and monitoring of safeguards. The institutional arrangements for the implementation of the RP, however, may need to be further clarified and integrated with the overall institutional arrangement for the project implementation. The EIA/EMP also provides adequate capacity for safeguards, including the hiring of an Environmental and Safety Officer (ESO) and an Equal Opportunity Gender and Social Specialist (EOSS) at the TMTD/SMTA as well as the engagement of an international and national safeguards specialist on an intermittent basis as part of the Construction Supervision Consultants (CSC) to provide guidance and training to the ESO and EOSS. Furthermore, contractors will be required to appoint an Environmental Management officer (EMO) and a Health and Safety Officer (HSO) who will be responsible for implementing the SSEMP. Both the EIA/EMP and RP also provide adequate monitoring for safeguards compliance, which includes in-house and independent environmental quality monitoring.

39. There will be no land acquisition for this project as the planned BRT corridor will utilize the existing road right of way. The depots will also be constructed on government-owned land. The involuntary resettlement impacts will thus be limited to the following: the economic displacement of some 493 vendors and the dismantling of portions of some 293 informal commercial structures (e.g. fences, parts of concrete floor slabs, makeshift tables for the display of wares, etc.), the relocation of utility lines, and the dismantling and relocation of about 80 formal commercial and institutional structures that have long encroached into the right of way. The latter includes the Sindh Police, Pakistan Rangers, charity organizations providing medical emergency services and food services to the poor, commercial banks, and petrol stations. All these impacts, including the issue of vulnerable households and the impacts on workers from the affected businesses, have been adequately and satisfactorily addressed in the draft RP.

40. It is acknowledged that the RP is still a draft and will be finalized only once the detailed engineering design is finalized. As indicated in the RP, the proponent will provide the following updates in the final version: (i) updated list of displaced persons and affected structures; (ii) additional coverage of the socioeconomic survey of displaced persons; and (iii) preparation of a livelihood restoration plan. The following, however, may also need to be addressed in the final RP: (i) the institutional arrangement for the implementation of the RP should be reconciled or made consistent with the overall project implementation arrangement; (ii) vulnerable displaced persons should be identified and their additional entitlements/assistance identified; (iii) there should be a contingency plan/procedure for addressing unanticipated damages to property or displacement due to changes in alignment, design and/or accidental damage by contractors; and, (iv) the

grievance redress mechanism (GRM) for the involuntary resettlement should be integrated with the GRM for all other issues.

41. The project has undergone an extensive consultation process, which is adequately documented in the EIA. However, the EIA will need to describe the plan for the continued engagement of the stakeholders with the project in accordance with its policies and standards. The project would benefit from periodic consultation with the stakeholders during the construction period. It is during this period that stakeholders provide valuable feedback and are in turn updated on the status of the project. The EIA provides a suitable arrangement for a GRM, which needs to be integrated or reconciled with the GRM in the RP.

42. Overall, the project safeguards conform with the GCF ESS standards. However, they would need to be updated to reflect the current project design as described in the funding proposal and to include additional details once the engineering design is finalized. The update would need to reflect final design enhancements such as (i) the provision of bicycle lanes and a bike-sharing system; (ii) last line connectivity and pedestrian facilities, including the provision of permeable pedestrian pavements; (iii) biogas fuel production, which is a critical component of the project, would have zero GHG emissions, as claimed; and (iv) the provision of bioswales and vegetation verges. These components or enhancements need to be reflected either as part of the project description or as part of the EMP measures. The final version of the RP shall include: (a) the results of the additional socioeconomic survey, which can only be undertaken after the engineering design is finalized; (b) a livelihood restoration plan for the affected businesses and vendors; (c) a clear description of the institutional arrangement that is integrated with the overall project implementation management; (d) a list of vulnerable project-affected households with the nature of vulnerability and additional entitlements/assistance specified; and (e) a provision for addressing unanticipated damages to property or displacement due to changes in alignment, design and/or accidental damage by contractors during construction.

43. A project-level GRM is described in the EIA. A grievance redress committee will be established with participation from the contractor, local government, and engineer and chaired by the Project Implementation Unit (PIU). Public notice of the GRM will be posted at the local government office and at the construction site, providing the purpose of the GRM and the contact information for any mechanism. The PIU and the Engineer will maintain a record of the status of any community complaints to be brought before the GRM. Costs related to disclosure and the GRM are part of the EMP implementation and will be borne by the PIU. The GRM will be used to receive and respond to complaints from individuals and the general community. Additional details on the GRM can be found in the RP and the ESIA.

4.2 Gender policy

44. The proposal contains a comprehensive assessment of gender issues in the transport sector, particularly in the public transport sector, as well as the female labour force participation status in Pakistan. The two studies that were used have been included in the funding proposal.

45. The two studies provide an overall view and a comprehensive view of gender issue in the country in addition to explaining the underlying causes for the many gender-related challenges seen in the transport sector and female labour participation. The challenge, as is explained in the assessment, is that the design of transport projects and services seldom take into consideration the challenges faced by women and girls, therefore women and girls experience harassment inside crowded public transport facilities. There are different forms of harassment that compromise women's safety and mobility, such as verbal abuse, physical innuendos, groping, leering or even direct physical assault inside public transport facilities and connected places. This affects women's ability to go outside of the home to engage in gainful employment opportunities while at the same time limiting their opportunity to get returns on education. Moreover, it affects the ability of girls to go to school. The lack of strict recourse mechanisms to address crimes and harassment aggravates the situation even further.

46. The AE therefore has focused its work on issues that it considers to be a priority, which include mobility and safety while using public transport facilities. In this regard, the action proposed is comprehensive in that it targets the practical needs of women by providing separate sitting and standing spaces for them, with spaces for prams and specifically marked spaces for people with disabilities. The public transport facility also provides signs that indicate rules for the use of the specific compartments designated for women. In addition, the project is also investing in changing people's perceptions through designing activities related to awareness-raising such as training BRT staff on harassment issues and putting up posters that promote respect on the transport system; and in improvements to policies, programmes and procedures, mechanisms to report and address incidents of sexual harassment, quick surveys to solicit the views of women and men to improve and respond to their service needs and hiring women conductors and security guards.

47. While many issues and activities have been identified based on the study "Rapid assessment of sexual harassment in public transport and connected spaces", the design of the project will take into consideration the affordability of services for lower-income groups and women, which has been assessed through focus group discussions. The time schedules of the BRT will also be designed to be improved from the existing schedules to suit women by making sure that the BRT services are available every 15 minutes even during the off-peak period. The public participation process, in the project activities, is such that it includes focused discussions with women, including non-governmental organizations that represent women's issues. Participatory approaches have been used to inform the design of the project and will continue throughout the project life. Women and vulnerable, poor and low-income groups will be part of the consultation process with a strong GRM system in place.

48. The project will have a female social staff to ensure ongoing consultations with women and address their issues, and to ensure that women and girls benefit equally from the project. TransKarachi will also engage one full-time social and gender specialist as staff, while SMTA will engage a social development specialist; in addition, consultant support (two gender specialists, one of which is engaged on a full-time basis) for implementation of the gender action plan is part of the SMTA and TransKarachi Capacity Building consulting package.

4.3 Risks

49. **Overall proposal assessment (medium risk):**

(a) The project is for financing a 30 km BRT and a biogas plant to generate biomethane fuel for the BRT buses. GCF is requested to finance a grant of USD 11.8 million and loan of USD 37 million along with ADB to the Government of Pakistan. GCF and ADB are not requested to assume the credit risk of the project. The AE has stated that the GCF grant will be used for adaptation and non-revenue generating activities; and

(b) The project involves private sector participation for operating the buses and the biogas plant. The AE is requested to ensure that such contracts are cost-effective and do not lead to undue gains to the private operators from the project financed with concessional resources.

50. **Accredited entity/executing entity capability to execute the current programme (medium risk):**

(a) ADB, the AE, has extensive experience financing investments in Pakistan. Since 1966, ADB has supported Pakistan with more than USD 27 billion in investments. The AE is also supporting another transport project in Peshawar. These aspects are expected to support the implementation of the proposed BRT project; and

(b) The executing entity of the projects are the Government of Pakistan, the Government of Sindh and TransKarachi. TransKarachi will implement and operate the BRT and manage service contracts. It will also develop the biogas facility on a Build Operate Transfer

contract, and the operations will be managed by a PPP entity. Thus, there is significant dependence on TransKarachi for project implementation and steady operations. It is a newly established entity and thus does not have a demonstrated track record of implementing such a project. However, the SMTA (regulator) Board chaired by the Transport Minister will oversee the project and the Project Management Unit(PMU) under SMTA is responsible for overall coordination of the project. The AE will also support the capacity-building of TransKarachi and SMTA.

51. **Project-specific risks (medium risk):**

(a) Construction and operations risk: the AE has identified a risk of potential deterioration in the security situation that can impair the project implementation and future BRT operations. As a mitigant, the Government of Sindh has committed to provide security to the project site, and the project design includes other security measures. It is recommended that the project also put in place prudent insurance cover to minimize the impact of any damage by human or natural factors;

(b) Negotiations with existing operators: to avoid competition with the BRT on parallel roads, minibuses will be removed or relocated. This also entails compensation to the existing public transport providers and a scheme of integrating them into the new system. The project involves leasing the BRT buses to private operators, allowing existing operators to participate in the bidding process. There will be negotiations with existing private bus operators and signing of service contracts with them. Conclusion of such negotiations and contracts in a cost-effective manner is necessary for the success of the project. It is recommended that such negotiations be monitored by the AE and concluded before the disbursement of funds from GCF;

(c) Contracts with bus and biogas operators: the project would enable the private operators (of buses as well as the biogas facility) to recover their operational costs through tariffs (in the case of buses) and the sale of biogas (for the biogas facility). It is necessary that the AE and executing entity ensure that the operational costs of the private operators are optimum, and the project does not lead to undue gains to the private operators of the buses and biogas plant;

(d) Surplus from biomethane plant: the AE has estimated that a low fixed price for the BRT will be determined by TransKarachi and a higher price (competitive with the CNG price, which is dependent on the international gas price) will be charged for the surplus to be sold to other offtakers. The AE is requested to ensure that any potential benefit accruing to the biogas plant operator from the sale of such surplus gas is considered in deciding the terms of the Build Operate Transfer (BOT) contract;

(e) costs savings: the buses will run on biomethane produced from the cattle manure. As the manure is available free of cost, the only cost for the biogas plant would be the O&M cost. Thus, the fuel cost is expected to be lower than the present fuel costs (diesel/CNG) of the buses in the city. The AE has stated that the BRT tariff is based on the existing average bus fare in the corridor. It is recommended that the savings in fuel cost vis-à-vis current fuel costs are passed on to the beneficiaries by way of a reduced tariff; and

(f) Co-financing by the Government of Pakistan: the Government is contributing USD 92.5 million for the project by way of a grant. However, USD 61 million of the contribution is for taxes (Goods and Services tax and stamp duties). The Government is requested to reduce the taxes on the project and contribute its resources towards other components of the project.

52. **Project viability and concessionality**

(a) The viability of the project depends on adequate cost recovery for the O&M of the project, the tariff of the BRT being at a competitive level and timely construction and steady operations of the project;

(b) The project will have revenue by way of fares, advertising and rent on storefronts in stations and depots; advertising and rent is expected to contribute 25 per cent of the total revenue. The AE has indicated that revenue-generating parking plazas along the BRT corridor have been excluded from the project scope and may be financed separately. As per the financial model provided by the AE, the Government would earn an annual tax revenue of USD 10 million (at current exchange rate) from 2020, with a gradual increase in such revenue, amounting to more than USD 150 million over 12 years (life of the buses). Considering these various sources of revenue, the Government is requested to consider availing of debt instead of grant financing from GCF although the specific components to be financed by a grant are non-revenue generating. It is also recommended that if the economic interest in TransKarachi / BRT system is transferred to a private sector entity or a foreign entity, the proceeds earned for such transfer shall be used towards pre-paying GCF's concessional financing.

53. **Compliance risk**

(a) The GCF anti-money laundering (AML)/countering the financing of terrorism (CFT) policy stipulates that AEs shall be responsible for identifying and mitigating the risks of money laundering (ML) and terrorist financing (TF) in deploying and managing GCF resources. Although the funding proposal does not highlight ML/TF as risk factor, the AE notes under section F.4 of the funding proposal that the executing entities will apply AML/CFT controls, consistent with the AE policies. Notwithstanding the assurances provided, the project activities involving GCF funding presents varying levels of integrity risk exposure. These risks are further elevated by security concerns highlighted in the funding proposal as a key risk factor which may impede the project's implementation. However, given the role of the AE in enforcing and monitoring AML/CFT compliance, these risks are significantly reduced.

54. **GCF portfolio concentration risk (low risk)**

(a) In the case of approval, the impact of this proposal on the GCF portfolio concentration in terms of result area and single proposal is not material.

55. **Recommendation**

(a) It is recommended that the Board consider the above factors in its decision.

Summary risk assessment		**Rationale**
Overall programme	Medium	GCF financing is to the Government of Pakistan. The project involves private sector participation. The accredited entity is requested to ensure the executing entity executes cost-effective contracts with the private operators The overall project has potential to generate revenue from various sources and also generate tax income for the Government
Accredited entity/executing entity capability to implement this programme	Medium	
Project-specific execution	Medium	
GCF portfolio concentration	Low	
Compliance	Medium	

4.4 Fiduciary

56. Asian Development Bank (ADB) is the Accredited Entity while the Executing Entities for the project are Islamic Republic of Pakistan, the Province of Sindh and TransKarachi.

57. As EEs, the Islamic Republic of Pakistan and the Province of Sindh: will be responsible for channeling GCF Proceeds for the loan through to the project; TransKarachi will be the responsible for undertaking the activities for the project. The borrower is the Islamic Republic of Pakistan,

which will enter into a subsidiary loan agreement with the Provincial Government of Sindh. The Islamic Republic of Pakistan has the loan agreement with AE, ADB, and an on-lending agreement with the Province of Sindh. TransKarachi will implement and own the BRT infrastructure and assets and is responsible for BRT operations and management of service contracts. ADB, in its role as AE, has overall responsibility and oversight for the project, including project preparation and implementation, financial management and procurement.

58. The government, Sindh Mass-Transit Authority (SMTA), and TransKarachi have assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, anti-money laundering, counter terrorist financing, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the Project Administration Manual (PAM) and loan documents.

59. ADB would administer any GCF and cofinancier funds (ADB administration will comprise oversight with respect to procurement, safeguards, and disbursement) and would conclude co-financing agreements with the confirmed participating organizations. More specifically, TransKarachi will receive fund disbursement requests whilst ADB pays contractors directly. No funds are routed through SMTA.

60. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).

61. The loan proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook (2017, as amended from time to time), and per the detailed arrangements agreed upon between the government and ADB.

62. Separate books and records by funding source will be maintained for all expenditures incurred on the project following International Public-Sector Accounting Standard for cash-based. The project financial statements will be audited in accordance with International Standards for Supreme Audit Institutions, by an independent auditor acceptable to ADB. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

4.5 Results monitoring and reporting

63. As a mitigation project, the intervention has a direct GHG reduction potential estimated at 2.6 million tCO_2eq (tank to wheels) over the project lifetime (30 years). The expected total number of direct and indirect beneficiaries is expected to be 1.5million, reflected as per the gender-disaggregated metrics of relevant GCF impact and outcome indicators.

64. Overall the FP and logframe accurately and consistently apply GCF Fund level (impact and outcome) RMF/PMF indicators, and the project has built in baselines and data collection that can inform progress reporting on infrastructure objectives (procurement and construction), behavioural and modal transport change aspects, and GHG emissions reductions. An innovative method, using on bus technology for fuel efficiency monitoring, will ensure that substantiation for a new and zero-emissions fuel modality (biomethane) is generated by the project. Metrics and measurements are based on a sound results based management approach v. activities tracking approach. And the FP is considered a strong case to apply impact evaluation methodologies, which will generate evidence for attribution and added value of the GCF incremental investment, as well as providing for the proof of concept/climate additionality of the project.

65. Under section C.3 the proposed output statements need to be reflected in the theory of change and align with information in the revised logic framework, and output statements of zero-emissions v. green BRT should be consistently applied throughout the document.

66. Under section C.8, the timetable of implementation will need to be revisited/revised in FAA negotiation to ensure feasibility of the proposal and sequencing of the timeline for proposed activities and procurements/construction.

67. The funding proposal theory of change would benefit from further details as per previous comments, to reflect on the causal pathways and climate lens (additionality and attribution to GCF financing).

68. Regarding section H.1, the logic framework complies with GCF standards and has been cleared through Secretariat Review.

69. Under section H.2, Secretariat strongly advise that within the duration of the loan lifespan, but after project implementation (ideally year 10-12) the project includes/conducts one ex-post calculation of GHG emissions applying CDM methodology ACM0016 comparable to testing monitored during project implementation for validation and evidence of realistic results reporting at impact level.

4.6 Legal assessment

70. The accreditation master agreement (AMA) was signed with the AE on 17 August 2017 and it became effective on 6 September 2017.

71. The AE has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project. Pursuant to clause 4.20 of the AMA, the AE shall provide a certificate confirming that all final internal approvals have been obtained and that it has the capacity and authority to administer the GCF Proceeds and Other GCF Funds (each as defined in the AMA) and comply with its obligations under the AMA with respect to the proposed project, within the number of days approved by the Board, provided that such period shall not be less than 120 days. Section A.3 of the funding proposal mentions that the AE expects to obtain its internal approvals on 28 September 2018.

72. The proposed project will be implemented in the Islamic Republic of Pakistan, a country in which GCF is not provided with privileges and immunities. This means that, among other things, GCF is not protected against litigation or expropriation in this country, which are risks that need to be further assessed. The Secretariat sent to the Government of Pakistan a draft bilateral agreement on privileges and immunities in March 2016, together with a background note, and a conference call was held in February 2017 with representatives of the Government of Pakistan. However, no response on the draft agreement has been received so far.

73. The Heads of the Independent Redress Mechanism and the Independent Integrity Unit have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by GCF are made only after GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

74. In order to mitigate risk, it is recommended that any approval by the Board be made subject to the following conditions:

(a) Delivery by the AE to GCF of a certificate or legal opinion within 120 days of the Board approval confirming that it has obtained all its internal approvals;

(b) Signature of the FAA in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval or the date on which the AE has provided a certificate or legal opinion confirming that it has obtained all internal approvals, whichever is later; and

(c) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP086

Proposal name:	Green Cities Facility
Accredited entity:	European Bank for Reconstruction and Development (EBRD)
Country/(ies):	Nine countries: • Caucasus and Moldova: Armenia, Georgia and Moldova • Middle East and North Africa: Jordan and Tunisia • Central Asia: Mongolia • South-East Europe: Albania, Serbia and the former Yugoslav Republic of Macedonia
Project/programme size:	Large

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The project targets 10 cities with higher than average energy and carbon intensity, all of which face significant climate change vulnerabilities and impacts. Successful green investments in these cities can have important catalytic effects and facilitate upscaling of related transformative municipal investments in other cities in their respective regions.	Although the overall climate rationale of the Green Cities Facility is relatively well positioned in the strategic sense (development of green cities), the specific mitigation baselines for the targeted sectors of municipal infrastructure/the municipal economy (pages 23 through 32 of the funding proposal) are described using a patchy urban sector narrative that does not offer climate-specific or indicative baseline data. For example, the contribution to the shift to low-emission sustainable development pathways and/or improved resilience of infrastructure or livelihoods against climate change is not defined nor outlined well enough through eligibility criteria and/or hurdle rates guiding the priority investment selection process. However, the expected impacts of the Facility against the baseline on page 35 of the funding proposal are relatively well articulated and described in a tangible way, but this is probably less useful if these cannot be compared/monitored against workable sector mitigation baselines.

Ultimately, the aim for cities in developing countries that adopt a green city approach is that, through integrated planning and investments, urban environments will: (a) Respond well to their climate, location, orientation and context, optimizing natural assets such as sunlight and wind flow; (b) Be quiet(er), clean and effective, with a healthy microclimate; (c) Have reduced or have no carbon dioxide (CO_2) emissions, as they are self-sufficient energy producers powered by renewable energy sources; and (d) Eliminate the concept of waste, as they are based on a closed-loop ecosystem with significant recycling, reusing, remanufacturing and composting.	Shifting planning paradigms in the context of broader sustainable development for targeted cities to a climate-focused approach will not catalyse impact on the scale the Secretariat would find justifiable for such a sizeable financial commitment unless: - improved integrated urban planning is well balanced and sequenced; - with a measurably transformative / tangible green infrastructure investment; - planned on a long-term basis.
The Facility's expected impacts against the proposed baseline are around 11.92 metric tonnes of carbon dioxide equivalent ($MtCO_2eq$), based on direct investment in about 20 low-carbon and energy-efficient infrastructure subprojects (the list will be confidentially shared with the Board). The accredited entity also undertakes that all climate mitigation projects in this Facility will reduce CO_2 emissions by at least 20 per cent	One of the proposed actions in the funding proposal to remove barriers to climate investments (defined as policy and strategy-related barriers, financial barriers and/or institutional and capacity barriers) is the Green City Action Plan (GCAP) and Policy Dialogue. Although well intended, the funding proposal proposes to develop 10 GCAPs that will prioritize low-carbon and climate-resilient investments without assessing the different stages of already existing GCAPs on the ground and specific and ongoing green city infrastructure development cycles, as some cities are evidently more advanced in their greening efforts than others. In other words, the degree of strategy differentiation and approach to the 10 cities in 9 countries could have been better calibrated.
The European Bank for Reconstruction and Development (EBRD) has analysed the mitigation costs of all municipal sectors under consideration in the proposed Facility and is	The Facility proposes to use a minimum Climate Resilience Benefit Ratio of 10 per cent as the criterion or selecting transformative climate adaptation investments as well as a

suggesting, on the basis of 55 reviewed EBRD investment projects from 2013 to 2017, to finance investments in district heating, energy efficiency in public buildings, solid waste management and street lighting that can deliver mitigation impacts at less than EUR 50/tCO_2eq, with GCF costs of around EUR 16/tCO_2eq.	specific methodology to do so, including a screening tool for identifying climate risks to specific project sites (see page 49 of the funding proposal). However, the resilience baseline that will be taken for adaptation investment is unclear, as the information provided on pages 32 and 33 is very broadly defined and inconclusive, especially from the entire resilience portfolio perspective.

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

Background/history of the project that helps Board members assess the funding proposal

3. The rationale for (climate change transformative) urban investment is based on United Nations Framework Convention on Climate Change (UNFCCC) document FCCC/TP/2014/13, which refers to integrated, cross-sectoral mitigation activities in urban areas, illustrating the transformational impact "… through strong mitigation actions aimed at low-carbon, climate-resilient development at the local level across the key sectors such as buildings, transport and waste, cities in aggregate could reduce their GHG emissions in these core sectors by an estimated 24 per cent by 2030 and by 47 per cent by 2050".

4. Urban areas account for approximately 70 per cent of global energy consumption and about 75 per cent of emissions, according to the most recent Intergovernmental Panel on Climate Change assessment report. As such, cities play a key role in carrying out climate change mitigation and adaptation actions. Cities can contribute significant greenhouse gas (GHG) emissions due to urban infrastructure and their density and development patterns. At the same time, cities also host most of the infrastructure vulnerable to climate change impacts.

5. The 10 cities targeted under this programme, located in the Caucasus, the Middle East and North Africa, Central Asia and South-East Europe, have higher-than-average energy and carbon intensity. In addition, they face a range of pressing environmental and social issues from the impacts of climate change, including deteriorating health and well-being of citizens. Addressing these challenges requires an integrated and comprehensive approach. Successes achieved in these cities can serve as important examples for other cities in the region.

Climate objective

6. Green cities are energy-efficient, reduce their reliance on non-renewable energy sources, actively encourage waste reduction and management, have green and resilient infrastructure, utilize low-carbon transport and water cycle management, and deliver an improved quality of life for residents.

7. The proposed programme aims to reduce 11.9 metric tonnes of carbon dioxide equivalent ($MtCO_2eq$) of greenhouse gas (GHG) emissions and benefit 23.23 million people in 10 cities by removing barriers for cities to invest in urban mitigation and adaptation measures. In particular, cities will be supported in identifying, prioritizing, financing, implementing and monitoring green

city investments. The project will support direct investments in at least 20 low-carbon, energy-efficient and/or climate-resilient infrastructure projects.

8. Key barriers addressed under the programme include:

(a) Lack of access to capital for green infrastructure investments;

(b) Institutional barriers, for example lack of capacities within municipalities to assess, plan and implement green urban investments;

(c) Lack of awareness among local stakeholders of the benefits of green investments;

(d) Gender-differentiated patterns of access to and use of municipal infrastructure;

(e) Limited capacity in civil society organizations for effective communication/outreach; and

(f) Significant legacy stocks of inefficient infrastructure which present challenges to cities in prioritizing investments.

9. The barriers to green city action will be addressed through four mutually enforcing components:

(a) Green City Action Plans (GCAPs) and Policy Dialogues to support cities in developing a strategy and policies in order for them to make informed action plans and investment decisions;

(b) Green city infrastructure investments to provide the finance needed for scalable and replicable green city infrastructure investments;

(c) Technical assistance and capacity-building; and

(d) Green capital market roadmaps to support cities in accessing finance for low-carbon and climate change adaptation-related infrastructure investments from diverse sources.

Financing (environmental and social safeguards)

10. The European Bank for Reconstruction and Development (EBRD) will categorize each urban subproject to determine the nature and level of environmental and social investigation, information disclosure and stakeholder engagement required. Category A(I1), B(I2) and C(I3) subprojects can be included in the programme. Investments in the following sectors are foreseen:

(a) Public buildings and facilities management. Energy-efficient buildings consider both the embodied energy required to extract, process, transport and install building materials as well as the operating energy to provide services such as heating, cooling and powering equipment. The design and construction of energy-efficient buildings is supported by building design standards that consider appropriate siting, solar access, water capture, reuse and treatment, operating efficiency, reduced reliance on non-renewable energy sources and the incorporation of alternative energy sources;[1]

(b) Water and wastewater. The water sector comprises of several core elements: water supply, wastewater, sanitation, storm water management and drainage. Integrated water resource management (IWRM)[2] is a systems-based approach to managing water resources. Within an

[1] Building codes ensure that minimum standards are achieved (subject to adequate enforcement). Verification and rating systems such as those issued/facilitated via green building councils and systems such as Leadership in Energy and Environmental Design (LEED) and Building Research Establishment Environmental Assessment Method (BREEAM) add to this by providing a marketable element to the built environment that can, and is, valued financially. Furthermore, the various tiers of the rating and verification system provide a market-based instrument that encourages more than just doing the minimum.

[2] IWRM considers watershed management (also known as river basin management) and how activities and demand at various points within the watershed impact health and access to water. In addition to the environmental elements of IWRM, social and economic factors are also taken into account, such as managing livelihoods and ensuring equitable access.

urban context (depending on the city), IWRM is likely to extend beyond city boundaries and potentially across multiple administrative areas;

(c) District heating. The main components for consideration relating to the energy sector include access, security, reliability and affordability. The Green Cities Facility (hereafter "Facility") considers these components as well as alternative energy sources, low-carbon options and energy efficiency. These factors are considered across multiple sectors: buildings and the built environment, transport, industry and commerce. In urban areas, buildings and transport are the two main sectors for the consideration of energy-efficient development;

(d) Urban/low carbon transport. Low-carbon transport solutions help reduce reliance on petroleum-based modes of transport and increase emphasis and incentivisation for non-motorized and low-carbon transport. Central to low carbon transport solutions is transit-oriented development (TOD) that utilizes mass transit/multi-modal transport hubs supported by high-density residential and mixed-use development along corridors and activity nodes/centres;[3]

(e) Street lighting. Street lighting is an essential public service typically provided by public authorities at the subnational and municipal level. Cities are increasingly investing in energy-efficient street lighting systems to replace or enhance their outdated systems. Reliable and bright public lighting reduces accidents and crime and allows for economic activity after sunset; modern energy-efficient street lighting technology can also significantly lower energy consumption as well as operations and maintenance costs; and

(f) Solid waste. Solid waste management refers to the collection, transfer and disposal of waste. The proposed cities employ a variety of waste management systems based on available technical and financial resources and the current level of environmental awareness in the city concerned.

11. Within the Facility, projects likely to be categorized as A(I1) include: waste processing and disposal installations for the incineration, chemical treatment or landfill of hazardous, toxic or dangerous wastes; large-scale waste disposal installations for the incineration or chemical treatment of non-hazardous wastes; municipal wastewater treatment plants with a capacity exceeding 150,000 population equivalents; and large-scale municipal solid waste processing and disposal facilities. Category A projects will be required to meet the performance requirements of the EBRD. All Category A projects within the Facility will ensure that systems are in place to appropriately mitigate and address projects' potential environmental and social risks.

12. The following financing structure is proposed:

(a) Component 1: GCAPs and Policy Dialogues supported by grant financing of EUR 4 million from GCF for technical assistance activities with co-financing (grant) by other donors (Austria, Japan and the Republic of Korea) of EUR 1.7 million. The GCF grant funding will be used for the preparation of at least 10 Green City Action Plans;

(b) Component 2: green city infrastructure investment supported by grant financing of EUR 30 million and concessional loan financing from GCF of EUR 180 million, co-financing (senior loan) from the EBRD of EUR 350 million, local contributions of EUR 60 million to 130 million, and EUR 29.5 million from donors. Both the EBRD and GCF will provide senior loans. The loan resources will be used to provide concessional loans for green urban

[3] Well-integrated transit and land development facilitates urban forms that reduce the need for travel by private motorized modes. Enhancing urban areas through good design which creates accessible and walkable spaces; including city greening and green infrastructure (e.g. flood control), serviced by efficient public transport, usually become attractive places for people to live while simultaneously helping reduce local pollution and GHGs and improving living conditions.

investments in cities, while the grant resources will be used for capital expenditure grants, principally for adaptation projects;

(c) Component 3: technical assistance and capacity-building supported by grant funding of EUR 9 million from GCF and co-financing (grant) from the Swedish International Development Cooperation Agency (SIDA) of EUR 4.8 million. The GCF resources will be used to provide technical assistance and capacity-building to cities on technical, financial, environmental, social and gender due diligence, enhance the capacities of city management, and facilitate project implementation and monitoring and knowledge-building;

(d) Component 4: green capital market roadmaps supported by grant funding of EUR 5 million from GCF and no co-financing from other sources. The GCF resources will be used for technical assistance to develop the tools and skills in cities to attract private sector finance for green investments, particularly local capital markets; and

(e) Project management: total project management costs are not detailed in the current version of the funding proposal.

13. GCF financing (EUR 228 million in total, consisting of a EUR 48 million in the form of a grant and a EUR 180 million loan) represents approximately 30.6 to 33.8 per cent of the total project cost of EUR 674 million to EUR 744 million. The EBRD will provide loan financing of EUR 350 million; other donors will provide EUR 28 million in grant resources and EUR 8 million in loan resources, while local contributions will amount to EUR 60 million–130 million.

2.2 Component-by-component analysis

Component 1 – Green City Action Plan and Policy Dialogue (total cost: EUR 5.7 million; GCF cost: EUR 4 million, or 70 per cent)

14. Policy and strategy support will be provided to the cities under this component, resulting in at least 10 GCAPs. These plans will set a benchmark and vision for the sustainable development of each beneficiary city and help municipal authorities and key stakeholders make climate-informed decisions about infrastructure investments.

15. The participation of cities in the Facility requires an initial climate-related trigger investment that meets the Facility's project-level eligibility criteria. If the criteria are met, the development of a GCAP will be laid down in the associated legal documentation. Such a trigger investment is important as (a) it demonstrates commitment on behalf of the city to begin the process of transformation; and (b) it gives greater certainty that the GCAP will be developed by placing a legal covenant on the GCAP development in the loan document.

16. The development of the GCAPs will be supported by bilateral donors from Austria, Japan and the Republic of Korea contributing a total of EUR 1.7 million.

17. Cities might need to develop legislation or amend regulations to enhance the enabling environment for green investments. Under this component the required technical assistance will be provided to support these processes, for example, supporting governments in amending budget laws where this has been identified as a barrier.

18. In addition, the component will involve policy support on gender equality and the introduction of gender equality principles into the investment practices of the cities, in line with the findings of the gender assessments.

Component 2 – Green city infrastructure investments (total cost: EUR 649.5–719.5 million; GCF cost: EUR 210 million, or 29–32 per cent)

19. Under this component, the financing and implementation of climate-focused infrastructure investment will be supported, as indicated in the GCAPs. There are at least 20 investments expected

from GCF and EBRD (depending on size of individual projects) with a financing volume between 598 to EUR 668 million.

20. The component will facilitate both sovereign and sub-sovereign finance for climate change mitigation and adaptation in the priority sectors in cities.

21. Technical, financial, environmental and social due diligence for each subproject will form an integral part of each investment.

Component 3 – Technical assistance and capacity-building (total cost: EUR 13.8 million; GCF cost: EUR 9 million, or 65 per cent)

22. This component concerns the targeted technical assistance and capacity-building that will be provided to cities to enhance their capacities in green investment. Capacity-building will focus on the following areas:

(a) Facilitating systematic and comprehensive strategic planning at city level with a focus on climate change mitigation and adaptation;

(b) Enhancing financial and operational performance at municipal level;

(c) Establishing and managing the implementation of environmental and social safeguards;

(d) Increasing public awareness and enhancing social, economic and environmental co-benefits; and

(e) Building the capacities of city administrators and key stakeholders to promote gender equality in their respective human resources policies and practices, and supporting the providers of municipal services with the implementation of these Green action plans.

Component 4 – Green capital market roadmaps (total cost: EUR 5 million; GCF cost: EUR 5 million, or 100 per cent)

23. This component aims to facilitate and provide a pathway for cities to access green finance and capital markets. At least eight green capital market roadmaps will be developed.

24. A range of stakeholders, from cities to national agencies, will be involved to develop the tools and skills cities need to attract private sector finance for green investments, particularly in local capital markets. The frameworks and standards for green investments will be established at national level in close cooperation with relevant ministries (principally finance and environment ministries), with a focus on opportunities to promote climate solutions.

25. At city level, the focus will be on assisting relevant city stakeholders (mayors' offices, city treasuries, municipal service companies, urban planning and environment departments) to work within national frameworks and standards to (a) raise awareness of the potential for capital market engagement in green investments to support climate investments; (b) help cities identify and qualify eligible investments and improve the use of screening, tracking and reporting procedures relating to mitigation and adaptation challenges to better align investment opportunities with expectation of green investors; and (c) mobilize capital. Multiple modalities for leveraging private finance will be considered, including commercial bank loans, energy service companies and, where appropriate, bond issuances. The results of this work will be packaged in the green capital market roadmaps.

26. Under this component, specific support will be provided on (a) strategies for addressing the barriers cities face in accessing green finance and local capital markets; (b) building the capacities of local governments and stakeholders to ensure the conditions and processes are in place to attract private finance; and (c) promoting the upscaling of finance for green financial instruments, including through green bonds.

III. Assessment of performance against investment criteria

27. There is no uniform definition of a "green city". However, there are several central themes that help to shape and define what a green city is. Such themes include energy efficiency (including built form) and reducing reliance on non-renewable energy sources; sustainable and low carbon transportation systems; green, resilient infrastructure; waste reduction and management; increased green areas; water cycle management and integrated planning. How a city develops as green varies according to geography, sector and pace at which it occurs. Decisions taken by city leaders on where, what and how investment will be directed to support green development needs to be considered using a system-based approach. A system-based approach recognizes the interconnectedness of sectors and the importance of intervention and investment sequencing. It also recognizes that cities will evolve to different levels of "green" at different rates and that this development is not uniform.

28. The complex nature of cities, vast amount of information available and pressure to "do more with less" creates a challenging environment within the context of green city development. It is often difficult for decision-makers to prioritize green investment when pressure for resources may be more pronounced in other more urgent sectors and for the provision of basic services. As such, green city development cannot only focus on the climate change and physical manifestation of "green" development but needs to include sustained education and support to capacity-building both at community and institutional levels. In this way, the development supports behavioural change and prioritising green development initiatives.

29. As suggested in the introductory remarks, cities in the EBRD region face a range of persistent obstacles that limit scaling up of climate action. A combination of these obstacles includes a huge legacy stock of inefficient and polluting infrastructure, market barriers and institutional barriers, among others. But the most significant barrier and obvious "elephant in the room" is a lack of access to finance for both climate- and development-focused infrastructure investments. This is coupled with inadequate urban planning capacity and an integrated green approach that limits cities' ability to scale up climate actions and related infrastructure investments.

3.1 Impact potential *Scale: High*

30. The proposed project significantly contributes to the shift to low-emission sustainable development pathways in the 10 proposed cities and nine countries of engagement. The Facility is based on a country-driven and evidence-based approach that systematically prioritizes and then finances transformational municipal climate-related infrastructure investments. The Facility investments will focus on urban infrastructure in six sectors: building energy efficiency; water and wastewater management; public transport; municipal energy systems; and lighting. Over the next five years, the Facility will help at least 10 cities to plan and implement comprehensive green city actions and interventions (direct investments in at least 20 low-carbon, energy-efficient and climate-resilient infrastructure is foreseen); it is suggested that about 11.9 million tCO_2eq will be avoided and beneficiaries will exceed 23.23 million individuals.

31. The project reinforces the increased use of climate information in decision-making regarding transformative urban infrastructure investments; further rolls out and initiates the development of GCAPs, which have been successfully piloted by the EBRD in several countries, such as Armenia and Georgia, and very recently in Albania; all three countries are covered in the proposed Facility. The GCAP process is already spurring subsequent investment in climate-focused municipal infrastructure; with more than EUR 400 million of identified investment needs and likely financial resources committed over the five years period. The GCAP in Tbilisi, for example, catalysed the development of multiple prioritized investments in areas including improvements in energy efficiency in public buildings; street lighting; solid waste management systems; and flood

management. In Tirana, investments are already made to address the city's water network challenges and the procurement of a fleet of electric buses.

3.2 Paradigm shift potential *Scale: Medium to High*

32. Most urban cities in the nine countries in focus of the proposed Facility are struggling to meet their infrastructure needs, maintain or provide adequate service delivery and upgrade city systems to keep pace with the rate of demographic and economic changes, urbanization and inevitable changes in population and demographics, whether positive or negative. In addition, limitations in human and financial capital, technical expertise and low community awareness all contribute to the challenges facing city leaders and governments in implementing urban upgrading and development initiatives. Compounding these challenges, climate change effects, scarce natural resources and depleted or degraded natural environments within and around urban areas often means that the required improvements and investments are starting from a low resilience baseline; increasing the potential upfront costs and often requiring significant justification to gain the necessary support to proceed. Similarly, increased vulnerability as a result of climate change and exposure to disaster events shapes the development needs of urban areas and places pressure on the service economy and infrastructure. Furthermore, inappropriate land use, poor governance, and weak legislation and enforcement capacity hinder the ability of urban and city centres to "go green".

33. The GCAP process and the proposed facility, above all, help to overcome barriers to low-carbon development and offer a systematic and comprehensive approach to green city development that can address the identified barriers. The Facility combines a systematic planning approach that encourages cities to consider the long-term costs and benefits of all actions, with flexible financing and technical assistance to resolve regulatory and market issues to mitigate the barriers.

3.3 Sustainable development potential *Scale: Medium*

34. GCAPs will help to realize the Sustainable Development Goal 11, which states, "By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels". Furthermore, the broad approach of the GCAP process promotes significant positive environmental externalities such as air quality, soil quality, conservation and biodiversity, among others, and as such improves the liveability of cities.

35. GCAPs are also carefully aligned with countries' and cities' international climate commitments and plans, such as nationally appropriate mitigation actions (NAMAs), national adaptation programmes of action (NAPAs), nationally determined contributions (NDCs) and national adaptation plans (NAPs), which are all properly analysed in the first stages of developing a GCAP. The priorities and actions identified in these strategies, as well as the targets, then influence the specific actions and targets identified by the GCAP. Through an iterative stakeholder consultation process, the GCAPs are able to synthesize these plans with cities' downscaled/local climate change challenges and the priorities of local stakeholder groups.

3.4 Needs of the recipient *Scale: High*

36. The cities in the region face a range of persistent obstacles that limit scaling-up of climate action, including a huge legacy stock of inefficient and polluting infrastructure, market barriers, lack of awareness and institutional barriers. The key barrier is a lack of access to finance for both

climate- and development-focused infrastructure investments coupled with inadequate urban planning capacity and an integrated green approach that limits cities' ability to scale up climate actions and related infrastructure investments.

37. The target region of the Facility is characterized by inefficient use of energy, acute environmental issues such as air pollution, and high carbon intensity (tCO_2eq/gross domestic product), with some countries almost eight times as carbon intensive as the global average. This energy inefficiency is reflected in, among other things, the poor energy performance of both public and private buildings in urban areas.

38. The targeted countries are vulnerable to the impacts of climate change. One of the main challenges is increasing water stress. Particularly in Central Asia, key challenges include predicted increases in the variability of precipitation and changes in snow melt patterns. These will have a severe impact on water availability. This is potentially a detrimental risk to the economies as they rely on water as a key resource, with the main sectors depending on agricultural irrigation and hydropower as the main source of electricity. Additionally, seasonal variability and the occurrence of extreme precipitation events lead to flooding and landslides that can have detrimental effects for key infrastructure.

39. The local capital markets lack the capacity and know-how to provide the long-term financing required for these green infrastructure projects. Local financiers and other sources of financing are further discouraged from financing such projects by the high upfront costs due to the technological requirements and the lower tariff structures prevalent in the region.

3.5 Country ownership *Scale: High*

40. The green investments supported will carefully be aligned with the countries' and cities' international climate commitments and plans, such as their NAMAs, NAPAs, NDCs and NAPs, which are all properly analysed in the first stages of developing a GCAP. The priorities and actions identified in these strategies, as well as the targets, then influence the specific actions and targets identified by the GCAP.

41. National ownership of the project is reflected not only in the no-objection letters and recent confirmations provided by the nine national designated authorities, but also in the co-financing, which will be provided by local actors in the range of EUR 60 million to 130 million. It reflects a significant level of ownership from the municipalities and other local actors.

42. Stakeholder consultations took place during the design of the project, including with the concerned authorities of the nine countries, to assess the market potential, stakeholder interest, financing options and barriers to the green investments. The development of the proposal has been an inclusive process, particularly through close engagement run through the regional offices of EBRD.

43. During the planning process in the cities, stakeholders will be extensively consulted as part of the iterative stakeholder consultation process of the GCAP. In this way, the national plans will be aligned with the local climate change challenges and the priorities of local stakeholder groups.

44. The EBRD has a proven track record of implementing municipal investments in the targeted countries. In addition, in 2017 the EBRD financed EUR 1,043 million in 34 infrastructure projects across more than 30 cities and municipalities that contributed to the Green Economy Transition of the EBRD. These investments ranged from investing in public transport infrastructure, new or upgraded water supply and waste water treatment, energy efficient district heating solutions and municipal solid waste projects.

3.6 Efficiency and effectiveness *Scale: Medium*

45. For mitigation, the estimated total cost per tonne of emissions reduced is in the range of EUR 56.52–62.39 per tCO2eq, which is a reasonable value given the large-scale multisector nature of the Facility. The GCF cost per tCO2eq is approximately EUR 19.12.

46. Because the programme will fund a series of investments in urban infrastructure in multiple cities under the Facility, the exact cost effectiveness will not be known until specific projects are selected for funding during the lifetime of the programme. As a result, GCF and EBRD must agree on a set of principles (as suggested below) to ensure continued cost effectiveness throughout the life of the programme:

(a) EBRD will conduct a financial analysis and economic analysis for every investment financed under the Facility, and financial internal rates of return and economic internal rates of return will be computed for each. All projects must be economically viable without concessional finance if the externality were priced. EBRD does not have a minimum hurdle rate but generally would expect such internal rates of return for all investments to exceed 10 per cent;

(b) GCF concessionality will be limited to the gap between the economic returns and the financial returns, although concessionality may also address barriers in terms of the additional capital costs of advanced climate technologies, first mover costs, etc. For environmental infrastructure, the concessional finance (in grant-equivalent terms) will not exceed the incremental cost of moving from business-as-usual to the targeted environmental standards. For sustainable energy and resource efficiency, the concessional finance will not exceed the economic value of the avoided emissions or resources saved (valued at the shadow price of those resources). Concessional finance may also help compensate specific transaction costs, such as first mover costs or certification of new technologies;

(c) All district heating, energy efficiency in public buildings, solid waste and street lighting projects will be required to deliver climate mitigation at a cost less than EUR 50/tCO_2eq, and, consequently, at an approximate cost to GCF of EUR 16/tCO_2eq as referenced in the funding proposal; and

(d) No more than 30 per cent of the Facility will be invested in transport projects, which tend to have a higher cost per tCO_2eq.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

47. The programme establishes a Facility aimed at fostering low-carbon, resilient urban development for cities and municipalities in Albania, Armenia, Georgia, Jordan, Moldova, Mongolia, Serbia, the former Yugoslav Republic of Macedonia and Tunisia (hereafter referred to as the "Facility region"), and ultimately at increasing private sector investment in sustainable urban infrastructure in these emerging countries. It proposes flexible financing for planning and sustainable development initiatives, and centres on four key objectives: (1) providing policy and strategy support to cities; (2) facilitating and stimulating green city infrastructure investments; (3) building the capacity of city administrators and supporting institutions; and (4) facilitating pathways for cities to access green finance and capital markets.

48. The Facility is considered to have an overall high environmental and social risk category, equivalent to Category A. The accredited entity (AE) anticipates that some subproject investments will have high environmental and social risk, equivalent to Category A; others will have fewer adverse environmental and social risks and impacts, equivalent to Categories B and C, consistent with the definition of the AE and GCF. A high-level description of investments that are likely to be

Category A is provided. These include waste processing and disposal installations for incineration, chemical treatment or landfill of hazardous, toxic or dangerous wastes; large-scale waste disposal installations for incineration or chemical treatment of non-hazardous wastes; municipal large-capacity wastewater treatment plants; and large-scale municipal solid waste processing and disposal. The environmental and social risks and impacts associated with the subprojects that will be supported under the Facility vary in terms of nature and scale depending on whether the subprojects involve rehabilitation and upgrading or construction of new facilities. Brownfield subprojects involving modernization and upgrading of existing facilities would generate environmental and social risks that are localized and readily mitigated using good international industry practices. Greenfield projects involving the construction of new facilities, on the other hand, may generate more significant risks and impacts. The assessment by the Secretariat recommends that for both types of subprojects, a robust stakeholder engagement process will need to be established and carried out. Environmental and social risks would include waste management, generation of effluents and emissions that may impair local air and water quality, and impacts from land acquisition.

49. Specific environmental and social risks and potential impacts including relevant policies will be undertaken during the development of GCAPs by participating cities and municipalities. The GCAP process will be based on a strategic environmental and social assessment that articulates the cities' green vision, strategic objectives and priority actions and investments to address priority environmental and social challenges that effectively contribute to achieving the city's environmental objectives. The GCAP process integrates environmental and social considerations in the prioritization of investments and in promoting an enabling policy environment. A set of eligibility criteria will be used to select and prioritize subprojects to be supported under the Facility. The criteria for mitigation and adaptation subprojects enables these subprojects to determine priority environmental challenges that will be addressed as identified in the GCAP.

50. The process, requirements and roles related to environmental and social due diligence, management and monitoring that will govern the Facility and range of subprojects are described in an environmental and social management framework (ESMF). The ESMF provides an overview of national-level climate-related policy landscapes, challenges and opportunities for promoting a green economy, as well as key environmental and social issues in the Facility region. The ESMF is centred on the environmental and social sustainability framework (ESSF) of the AE and will be applied to all subprojects of the Facility. The ESSF of the EBRD is based on the environmental and sustainability mandate in the articles establishing the bank, its environmental and social policy and the performance requirements.

51. Each subproject will be subjected to an environmental and social screening process to determine the risk category and the scope of assessment and management plans. The Facility will use a three-tiered risk category, similar to the risk categories of the accredited entity and aligned to the definitions by GCF. Examples of likely category A subprojects include large-scale waste processing and disposal installations, landfill of hazardous, toxic or dangerous waste and large-scale wastewater treatment plants. Likely category B and C subprojects will be those that will have moderate or low-level risks.

52. Based on the results of the screening, the scope of the subproject-specific environmental and social assessments including the necessary mitigation measures will be defined pursuant to the requirements of the Performance Requirements of the AE and GCF interim environmental and social safeguards (ESS) standards. The GCAP will inform the due diligence of the subprojects. As part of its due diligence, the ESMF commits to assessing the capacity of municipalities and municipal utility companies to successfully deliver on proposed projects and their capacity to comply with national regulations and with the policies of the AE and GCF. Such assessments involve a review of municipalities' or cities' environmental and social policies, management systems and resources as specified in the performance requirements of the AE and the interim ESS standards of GCF. As part of activities under Component 3, the development and enhancement of capacities of

cities and municipalities will be supported, including environmental and social due diligence and the application of national requirements and the environmental and social requirements of the AE.

53. Subproject investees will be required to act on the ESS assessment findings as well as on the outcomes of required stakeholder engagement processes to develop and implement steps to address identified impacts and issues, and to make improvements that meet the requirements of the environmental and social safeguards. Components of the Environmental and Social Management Plan (ESMP) subproject could include requiring targeted plans such as a biodiversity action plan, emergency response plan, resettlement action plan, stakeholder engagement plan, and/or other specific plans. Where subprojects do not meet the performance requirements from the outset, the municipality and the AE would need to agree on a environmental and social action plan, which would include technically and financially feasible measures for the municipality to achieve compliance.

54. A land acquisition and resettlement framework (LARF) is included in the ESMF and provides the basis for developing detailed land acquisition and resettlement plans (LARPs) when such plans are required of subprojects. Such plans would be developed once the nature and magnitude of the land acquisition and restrictions on land use or resettlement related to the specific subproject are known. Consistent with the fifth performance requirement of the EBRD, the LARPs will provide detailed information on the people affected by the project, the eligibility criteria and the procedures to be applied for the subproject.

55. The ESMF includes a stakeholder engagement framework (SEF) that outlines processes, strategies and responsibilities of subprojects in developing and implementing a stakeholder engagement plan (SEP). A template for developing a SEP as well as a stakeholder identification and planning tool are included as annexes to the SEF. While the SEF does not specify who within the subproject will or should be responsible for developing and carrying out the SEP, it advises (in accordance with International Finance Corporation guidance) that an SEP "should clarify who within the company will be responsible for carrying out these activities and give assurance that an appropriate budget and other resources have been allocated toward these activities". Such details on the stakeholder actions and roles will be further defined in the SEP, which is to be developed by the cities and municipalities.

56. A facility-level grievance mechanism is required as part of the SEF, and an annex is provided that outlines the requirements for subproject grievance management systems. The document details the requirements of the AE for handling complaints and provides guidance on key principles and the administration of grievance management. It includes a flowchart of a typical grievance management system, consistent with project compliant mechanism of the AE. Subprojects are required to make grievance procedures as accessible as possible, to ensure grievance management is undertaken in culturally appropriate ways, and generally to follow good practice and guidance on developing appropriate and effective grievance handling procedures.

57. Provisions for meeting the requirements of the AE regarding indigenous peoples are not included in the ESMF as the AE does not anticipate investing in subprojects that impact the lands or livelihoods of indigenous peoples.

58. The ESMF provides a broad description of roles and responsibilities of subprojects. A graphic overview of the management processes and responsibilities applied to the Facility's projects, consistent with the practice of the AE, is included in the ESMF annex. The ESMF includes various management plans that may be developed depending on the results of the subproject assessments. The subproject-specific environmental and social impacts assessments (ESIAs) and ESMPs will describe the risks and impacts that the management plans intend to address or mitigate, their links to the safeguards, and who would be responsible for developing and carrying out the plans.

59. A template for conducting an ESIA from a previous brownfield project and terms of reference (TOR) for conducting a brownfield ESIA are included as annexes to the ESMF.

60. Environmental and social monitoring and review of subprojects will be carried out at both the project and AE level by the in-house staff of the AE, project implementation units (PIUs), and procured consultants. The Municipal and Environmental Infrastructure team of the AE, risk departments and regional offices conduct due diligence, monitor project risks and prepare mitigation measures throughout the programme lifecycle. Loan agreements between municipalities and AEs require municipalities to report annually to the AE on the use of proceeds from the programme and on the environmental and social performance of the project. Implementation consultants officially report progress on a periodic basis to AE staff throughout the life of the programme. When the AE receives reports from municipalities and consultants, it identifies discrepancies and reconciles data and in turn provides a subproject-level report to GCF. The ESMF states that throughout the subproject lifecycle, both in-house staff of the AE and PIUs will evaluate the success and risks of subprojects. The specific details on how risks and the success of ESMF implementation will be evaluated, either during monitoring phases or in the evaluation phase, will need to be further defined at subproject level.

4.2 Gender policy

61. The proposal contains a gender assessment and it therefore complies with the operational guidelines of the GCF Gender Policy and Action Plan. It also provides a gender action plan and budget which makes the submission comprehensive. It provides a gender analysis, which describes the broad barriers women face with regard to engaging in and benefiting from municipal infrastructure and services in the areas of water, energy, transport and waste management. It has also provided overview of gender issues in the priority countries, as well as clear actions that need to be taken to improve the situation in the nine countries. Going forward, gender assessments will be undertaken for all investments in pre-investment due diligence, which is critical to the success of investments to address gender issues. It has indicated that it will use a gender mainstreaming approach, which is consistent with the GCF approach and therefore will ensure services and solutions are gender-sensitive.

62. When project implementation commences, further gender analysis will be undertaken per country/investment to identify specific actions and further develop baselines. This analysis will provide support to its clients to incorporate gender issues, which is complemented by stakeholder participation and benefits for both men and women, but with a focus on increasing women's economic empowerment.

63. The proposal contains a programme-level gender action plan including gender-related activities, qualitative and quantitative indicators and targets, and timelines and responsibilities for implementing the activities. EBRD has demonstrated in annex 10 its ample and impressive experience, and it is expected that the implementation of this project will bring the same rigor and attention, if not more, to the gender-related work in each of the countries.

64. EBRD has provided a clear monitoring and capacity support plan for the project, which will be provided through its gender team. Reporting will be based on the GCF reporting timeline and will be done through the gender advisory services programme. It is recommended that the proposed results framework is aligned with the overall results framework.

4.3 Risks

Overall proposal assessment (medium risk):

65. The funding proposal is for providing loan of Euro 180 m and grant of Euro 48 m for implementing climate focused municipal investments in 9 countries. The facility aims to help at least 10 cities and is expected to finance 20 projects. The loan from GCF and AE will finance municipalities, utilities, private entities and sovereigns for implementing such projects. GCF and AE will assume the credit risk of these entities – the borrowers under the program. The AE will select

the borrowers under the program in accordance with the criteria given in funding proposal and term sheet. The sub-project sponsors (e.g. municipalities / utilities) will have contribution of at least 10% of the total sub-project cost. The AE has also proposed to limit a country concentration to 25% of the facility.

66. There is co-financing of Euro 350 m loan from the AE, and Euro 28 m grant from donor finance. GCF and AE both will finance the program through senior loans. Although the creditor ranking, and security profile will be same for GCF and AE's loans, the AE has sought some flexibility in the amortization of GCF's loan. GCF is requested to provide longer grace period (up to 2 years more than grace period of AE's loan) and may have slower amortization. However, as per the term sheet the AE's loan will not be fully repaid prior to repayment of GCF's loan.

67. The AE has mentioned that it has well developed tools to assess the credit risk and design appropriate structures and security measures, and price risk. AE will assess the borrowing capacity against core criteria comprising of institutional framework, financial management, balance sheet strength.

68. The FP mentions that EBRD Operation Leaders are responsible for justifying the need for GCF funding to be provided on subordinated terms. Such requests will be assessed by relevant EBRD departments in line with the EBRD's approach to minimum concessionality.

AE / EE capability to execute the current programme (medium risk):

69. EBRD, the AE, has a track record of financing municipal infrastructure projects. The AE has well established municipal environmental infrastructure team. the AE has been investing into municipal sector since 1994 and has financed Euro 7.3 bn to 420 projects. The AE has informed that default rate for its municipal operations is exceptionally low. The Green Cities Facility's projects and objectives will receive on the ground support and management from the resident offices (ROs) of the AE functioning as local hubs for engagement with beneficiaries.

70. The executive entities under the program will comprise of EBRD, and the borrowers including the governments, municipalities, state/city/ privately owned utility companies, public private partnership companies, and energy service companies. The specific Executing Entity for each activity will be selected by the AE. GCF will rely on the AE for selection of appropriate EEs under the program.

71. The AE has provided clear eligibility criteria for the investment projects reflecting the mitigation and adaptation impact of the projects. The AE has approved Euro 250 m till date for the Green Cities Framework, which is the funding basis for this proposal.

Project specific risks (medium risk):

72. Implementation risk: the program includes implementation of subprojects across 9 countries and various cities. The borrowers / municipalities/ utilities will be the executing entities under the program. Some beneficiaries may have limited capacity or experience to implement such projects. The FP mentions that a detailed legal and technical due diligence will be carried out to develop robust and sustainable transition measures and milestones, which will be covenanted in the Loan Agreement and the Project Support Agreement. The technical assistance will focus on this area, with extensive training in contractual monitoring to be applied. Signing of the technical assistance assignments and their successful implementation will be covenanted in the loan agreement.

73. Resistance for tariff increase – The financial sustainability of the sub-project will be supported by potential increase in the tariffs and user fees. However, such increase may appear to be politically and socially unattractive. To mitigate this, the AE will take following approach: requiring tariff increases once the investment project is fully implemented thus allowing users to realize the benefits; respecting affordability constraints and ensuring mechanisms are in place to

ensure that low income groups are provided with financial assistance if affordability thresholds are breached ; combining tariff increases with measures to improve the overall operating efficiency of utility companies, which should have a positive impact on costs.

74. Foreign exchange risk – the financing from GCF will be in Euro. Part of AE's finance could also ne in the hard currency. The borrowers are likely to have revenue in local currencies, thus exposing them and indirectly GCF and AE to the currency fluctuation risk. The AE has mentioned that mechanism to address potential exposure to the increased costs associated with foreign exchange risks will be evaluated on a project by project basis. AE has flexibility to provide financing in local currency. However, its experience of financing local currency loans to municipalities and corporates has shown mixed results due to higher volatility in the local interest rates. the AE has also mentioned that the Availability payments (AP) - often the main source of revenue for debt service for PPPs- will be adjusted for the foreign exchange fluctuations in excess of inflation and there could be a hard currency 'floor price' for the APs, where APs expressed in foreign currency have a minimum throughout the term of the concession.

Project Viability & concessionality

75. The financial viability of the project is linked to the creditworthiness of the borrowers, transaction structure, ability to achieve optimum tariff increase and the success of the project. The AE is expected to structure the transactions to maximise the viability. The term sheet provides adequate flexibility in terms of higher grace period by GCF, concessional pricing of GCF and long repayment tenor to have a suitable loan structure for the borrowers. The AE has provided structuring criteria that includes a) minimum 10% contribution by the subproject sponsors, b) GCF's debt offered for a project not to be more than AE's debt offered c) minimum debt service coverage ratio of 1.0 for sovereign transactions, on a best efforts basis, and 1.1 for non-sovereign transactions.

76. The AE has mentioned that GCF's concessional terms will be offered to municipalities, where justified, to compensate for the higher cost of investing in transformative climate mitigation and adaptation technologies and GCF's concessional terms would enables prospective clients to invest in transformative sustainable infrastructure that they would otherwise not be able to do with EBRD finance alone.

77. The proposed size of GCF's concessional loan is based on AE's experience which indicates need of up to 40% of concessional financing is necessary for transformational municipal investment. Similar for the investment grants AE's experience indicates that grant of around 20% of total project value is necessary to mobilize EBRD's finance for such investments. The AE is requested to assess the concessionality requirement of each project and make GCF's resources available to the extent required and within the criteria provided in term sheet.

Compliance risk

78. The proposal involves cities in nine (9) countries in four regions. The risks associated with AML/CFT and corruption are generally medium risks as corruption remains prevalent in many of the proposed recipients. The proposal involves components which include land acquisition, improvements and procurement. It is important that the AE ensure that appropriate due diligence and monitoring activities be conducted to assure that the funds are not subject to money laundering, terrorist financing, or corruption. There is a risk that Politically Exposed Persons (PEPs) could benefit from the activities, and appropriate due diligence and controls should be used to ensure that there is no abuse of funds by PEPs.

GCF's portfolio concentration risk (Low risk):

79. In case of approval, the impact of this proposal on the GCF portfolio concentration in terms of result area and single proposal is not material.

Recommendation:

80. It is recommended that the Board considers the above factors in its decision.

Summary Risk Assessment		Rationale
Overall Programme	Medium	GCF's resources will be used to finance the municipal projects to be identified and assessed by the AE. AE has relevant experience and provides considerable co-financing in the program.
AE / EE capability to implement this program	Medium	
Project specific execution	Medium	
GCF's portfolio concentration	Low	
Compliance	Medium	

4.4 Results monitoring and reporting

81. This proposal addresses both mitigation and adaptation impact as illustrated in section E.1.2. For mitigation, the project expects to abate about 600,000 tCO_2eq per year. During the lifespan of 20 years, the project is expected to reduce about 11,923,000 tCO_2eq.

82. The project will directly benefit at least 10 cities. The number of indirect beneficiaries is estimated around at 23,230,000, of which 11,799,000 are women, targeting 50.79 per cent of the population in the project areas.

83. Section E.2.1 contains a theory of change diagram that shows a clear causal linkage/pathway between the problem statement and strategic result area, with clear reference to assumptions and risks.

84. The logic framework is in line with the GCF performance measurement frameworks. However, section H.2 relating to the monitoring and reporting timeline will need to be revisited. The arrangements for monitoring and reporting would benefit from additional detail relating to participatory monitoring, involving communities and local stakeholders, including civil society organizations, at all stages of the project/programme cycle. This should be further elaborated in this section.

4.5 Legal assessment

85. The accreditation master agreement was signed with the AE on 22 April 2017, and it became effective on 11 May 2017.

86. The AE has not provided a certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the programme. Section A.3 of the funding proposal, however, indicates that the AE obtained such internal approvals on 30 November 2016. It is recommended that, prior to the submission of the funding proposal to the Board, (a) the AE has obtained all its internal approvals; and (b) GCF has received a certificate or legal opinion from the AE in form and substance satisfactory to GCF confirming that all final internal approvals by the AE have been obtained and that the entity has the authority and capacity to implement the project.

87. The proposed programme will be implemented in Albania, Armenia, Georgia, Jordan, Moldova, Mongolia, Serbia the former Yugoslav Republic of Macedonia and Tunisia, countries in

which, except for Georgia, GCF is not provided with privileges and immunities. This means that, among other things, GCF is not protected against litigation or expropriation in these countries, and the risks need to be further assessed. GCF has signed a bilateral agreement on privileges and immunities with Georgia. The CF Secretariat has engaged with the other relevant countries as follows:

(a) With respect to Armenia, the Secretariat submitted a draft privileges and immunities agreement to the Government of Armenia on 11 May 2016. The agreement is currently under negotiation;

(b) With respect to Moldova, the Secretariat submitted a draft privileges and immunities agreement to the Government of Moldova on 11 May 2016. The negotiations of the agreement are yet to start;

(c) With respect to Jordan, the Secretariat submitted a draft privileges and immunities agreement to the Government of Jordan on 7 December 2015. The negotiations of the agreement are yet to start;

(d) With respect to Tunisia, the Secretariat submitted a draft privileges and immunities agreement to the Government of Tunisia on 27 October 2015. The agreement is currently under negotiation;

(e) With respect to Mongolia, the Secretariat submitted a draft privileges and immunities agreement to the Government of Mongolia on 14 November 2016. The agreement is currently under negotiation;

(f) With respect to Albania, the Secretariat submitted a draft privileges and immunities agreement to the Government of Albania on 11 May 2016. The negotiations of the agreement are yet to start;

(g) With respect to the former Yugoslav Republic of Macedonia, the Secretariat submitted a draft privileges and immunities agreement to the Government of the former Yugoslav Republic of Macedonia on 11 May 2016. The negotiations of the agreement are yet to start; and

(h) With respect to Serbia, the Secretariat submitted a draft privileges and immunities agreement to the Government of Serbia on 11 May 2016. The negotiations of the agreement are yet to start.

88. The heads of the Independent Redress Mechanism (IRM) and Independent Integrity Unit (IIU) have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by GCF are made only after GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

89. The AE will act as an executing entity and will also enter into subsidiary agreements with other executing entities. Given the nature of the programme, those further executing entities will only be identified, selected and appointed by the AE during the course of the programme. The criteria for selection of those executing entities have not yet been finalized and will be specified by the AE before the execution of the funded activity agreement for this programme. There is inherent uncertainty in the identity of such further executing entities and the specific means by which they will be selected, and therefore uncertainty in the specific means of implementation of the funded activity.

90. The Board, by decision B.09/04, set out the financial terms applicable to public sector loans, whereas the financial terms applicable to private sector loans are decided on a case-by-case basis. Currently, there is no GCF policy that sets out the classification of public and private sector loans. For the purposes of this programme, the financial terms applicable to public sector loans will be applied for all loans by the AE, whether to a sovereign, municipality or other recipient permitted

under the terms of the programme, including state- and municipality-owned companies and special purpose vehicles of a public-private partnership. In the absence of a Board-approved policy on the matter, legal uncertainty remains as to whether the programme meets the Board's expectations expressed in decision B.09/04.

91. In decision B.17/08, the Board specified that the terms applicable to public sector loans specified in decision B.09/04 may be applied in a fit-for-purpose manner, but it did not prescribe which entity was entitled to make such application of those terms. In this programme, the AE will determine the tenor of public sector loans within the upper limit set out in decision B.09/04. Legal uncertainty remains as to whether the programme meets the Board's expectations expressed in decision B.17/08 in this respect.

92. At the date of this assessment, the term sheet had not been finalized. It is therefore not possible for the Secretariat to fully assess the legal risks of the structure and provisions that can be agreed with respect to this programme.

93. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions outlined in the next paragraph:

4.6 List of proposed conditions (including legal)

94. The list of proposed conditions is as follows:

(a) The AE obtains all its internal approvals and provides to GCF Secretariat the certificate or legal opinion within 120 days of Board approval of the project;

(b) The AE signs the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval or the date when all internal approvals by the AE are obtained;

(c) The AE provides a handbook for the programme that includes the eligibility criteria for the selection of further executing entities for the programme; and

(d) The AE completes legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP087

Proposal name:	Building livelihood resilience to climate change in the upper basin of Guatemala's highlands
Accredited entity:	International Union for Conservation of Nature (IUCN)
Country/(ies):	Guatemala
Project size:	Small

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
Climate rationale is very well developed focusing on projected changes in the hydrological cycle	Off-site effects of the water cycle (larger basin sub-surface hydrology) addressed but not quantified
Strong stakeholder participation in proposal development	Stakeholders in the project area are historically less politically enabled
Large mitigation benefits in a project focused on community adaptation to climate change; unspecified (but potentially large) adaptation benefits downstream of project area	Mitigation benefits are only realized if continued management is applied in project areas during the project lifetime
Substantial co-financing from the Government of Guatemala and the Korea International Cooperation Agency (KOICA)	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. The project's overarching objective is to reduce the impacts of climate change on the hydrological cycle in target watersheds through improved land-use practices. This will lead to improved water recharge and productivity and contribute to the population and ecosystem's increased resilience to climate change. The total project area is 146,500 hectares (ha) of which 22,500 ha will be directly restored. This area includes agroforestry with annual crops, silvopastoral systems, and agroforestry with permanent crops or forest plantations and protection areas. The

selected areas are considered as water recharge areas. The number of direct beneficiaries is 132,000.

4. The impacts of climate change in Guatemala are twofold: in the short term, an increase in extreme events (e.g. hurricanes, droughts, frosts or floods) can be expected; in the long term, changes in annual average temperature and precipitation are estimated for the region, with the project region going from a hydrological surplus to a projected hydrological deficit. While extreme events have negative impacts on population and infrastructure, changes in average annual temperature and humidity can also modify the characteristics of flora and fauna and impact ecosystems. Both types of impacts are detrimental to agricultural productivity.

5. The total size of the project funding is USD 37.6 million. Of this amount, a grant request for USD 22 million has been made to GCF.

6. The environmental and social safeguards (ESS) classification of the project is category B due to changes in the vegetation and moderate changes in agricultural practices.

2.2 Component-by-component analysis

Component 1: Integrated climate smart watershed management (total cost: USD 15.2 million; GCF cost: USD 7.5 million or 50%)

7. This subcomponent will address the unsustainable land-use practices that currently prevail in prioritized watersheds. GCF resources will be used to restore key watersheds, whose degradation in the context of climate change threatens the provision of key ecosystem services (mainly water) further impoverishing the livelihoods of present and future communities. Capacity strengthening at the government and community levels will be undertaken, specifically among providers of extension services to local farmers, who are the key agents to be engaged to achieve positive changes in land-use practices. The PROBOSQUE forest incentive programme will develop sustainable management practices in the project's target area as well as building capacity and monitoring of management plans.

8. Improved land management practices and reforestation are considered an adequate intervention to improve the hydrological balance, predominantly through reducing surface run-off and improving infiltration of precipitation.

Component 2: Community-led watershed management systems promoted through grant facilities (total cost: USD 15.1 million; GCF cost: USD 8.8 million or 58%)

9. This subcomponent fosters climate action locally by taking advantage of the strong presence of community-based organizations (CBOs) in the area. For this purpose, a grant facility will be developed with GCF and Korea International Cooperation Agency (KOICA) resources to contribute to sustainable watershed management practices developed under the first subcomponent. Gender considerations will be mainstreamed in the selection criteria, with a capacity-building programme and a strong monitoring system installed to ensure that affirmative actions are taken to contribute to women's empowerment in the rural context.

10. International Union for Conservation of Nature (IUCN) has solid experience with such grant facilities and so have the CBOs in Guatemala, particularly under conditions similar to the project area where indigenous groups are concentrated. IUCN has a long-standing policy on mainstreaming gender considerations in its projects as well as the position of indigenous peoples and rural communities. The grant facility is described in a manual, and the selection criteria for grant recipients and thematic windows align with the investment criteria and safeguards GCF policies.

Component 3: Climate-related information provided to farmers and target stakeholders (total cost: USD 5 million; GCF cost: USD 4.6 million or 90%)

11. This component will upscale regional and national efforts regarding the generation of climate information to guide decision-making regarding watershed management practices for

agriculture, forestry and conservation purposes to target users. Culturally adapted early warning systems will improve access to information which will have a direct impact on the adaptation capacities of local communities living in the target watersheds. Existing meteorological stations will be strengthened and the project will continue the establishment of new hydrological and meteorological stations. These initiatives will help to advance the development of early warning systems that effectively couple scientific climatic data and local cultural practices and knowledge.

12. This component ensures that the transformational impact of the focus on maintaining the hydrological integrity of the landscape is made available to other, comparable areas in Guatemala such that effective upscaling may take place.

Project management costs (total cost: USD 2.3 million; GCF cost: USD 1.1 million or 48%)

III. Assessment of performance against investment criteria

3.1 Impact potential *Scale: Medium/high*

13. The project has significant impact potential in both mitigation and adaptation. In terms of overall impact, the project's main strength is its integrated approach to address complex and interrelated challenges. The project addresses a range of issues related to the hydrological cycle of Guatemala's highlands, both in terms of land-use practices and vegetative cover. By taking an integrated approach, the project impacts a range of result indicators.

14. Ecosystem-based activities will be implemented over 22,500 ha of forest land, benefitting a total of 132,000 rural people who are among the least economically developed in the country.

15. Beyond the project area, there is a significant positive impact through the increased availability of fresh water due to improved land management in the highlands. This benefit is impossible to quantify with the currently available information on sub-surface geography and hydrological networks, but expected to be significant given the use of freshwater supplies in lower areas, both in urban areas and for commercial agriculture.

3.2 Paradigm shift potential *Scale: High*

16. The project builds its logic around the functioning of the hydrological cycle, both locally in the highlands with respect to land-use practices and in the management of surface hydrological resources. This emphasis on an overarching principle that transcends sectoral and localized planning is a true paradigm shift for Guatemala and it could serve as an example for other areas in the country and indeed for the entire Central America region.

17. The local communities will use the plan in accordance with projections of climate change and in a way that enables their long-term use, while reducing environmental degradation and increasing the infiltration of precipitation. The local communities will be made aware of the importance of maintaining soil quality and avoiding soil erosion to secure a productive use of the natural resources.

18. The project has a substantial component on knowledge generation and dissemination, providing a strong vehicle for sharing the lessons from this project with other areas in Guatemala, thus fostering the potential for scaling up the approach to landscape management.

3.3 Sustainable development potential *Scale: Medium*

19. The activities developed with the local communities in the highlands are directly contributing to safeguarding the livelihoods and socio-economic well-being of the members of

those communities through proper land management and provisioning timber and other ecosystem goods and services.

20. The environmental co-benefits are high, due to activities aimed at improving the vegetative cover of the highlands, with many areas having steep slopes prone to erosion when not properly vegetated. The increased infiltration of precipitation leads to increased flows of groundwater, benefitting downstream areas.

3.4 Needs of the recipient *Scale: Medium/high*

21. The Government of Guatemala is implementing a number of forestry programmes throughout the country. The proposal, however, presents a planning approach that is new to the country and that needs to prove its utility and practice before it can be adopted on a wider scale. The integration of land-management interventions with basin hydrology has not been applied in Guatemala to date.

22. IUCN will implement part of the project through an on-granting facility. This will allow several local CBOs to participate in the implementation of activities, capitalizing on their experiences working with local communities and landscape management.

23. The highland communities are impoverished and not politically relevant, meaning that they tend to be under-served by the government. This project presents an important opportunity for these communities to improve their livelihoods and environmental condition.

3.5 Country ownership *Scale: Medium*

24. Country ownership is considered medium. Several government and non-governmental agencies have collaborated in the development of this proposal and will participate in the implementation of activities.

25. The project aligns well with national policies on climate change, such as the National Action Plan on Climate Change and the nationally determined contribution (NDC), and long-term strategic visions, such as Our Guatemala 2032. Sectoral strategies of interest include the National Forestry Agenda and the Forest Incentive Program for Smallholders.

3.6 Efficiency and effectiveness *Scale: Medium/high*

26. Guatemala is a medium-income country and has the largest economy in Central America. It also has one of Latin America's highest rates of inequality and one of the worst rates of poverty, malnutrition and mother-child mortality in the region, especially in rural and indigenous areas. Public investment is essential to overcome these problems, but constrained by lack of resources given that the country has one of the world's lowest government revenue bases in relation to the size of its economy. Given this situation and that climate-responsive investment is not a priority (between 2011 and 2014 it accounted for barely 0.93 per cent of the national budget), the most vulnerable populations would seem to have few hopes for effective adaptation.

27. The economic and financial analyses estimated the financial revenues of agroforestry and silvopastoral systems and the economic value of ecosystem services (regulation of water flows, erosion control, carbon sequestration) resulting from the project. A sensitivity analysis shows the project's viability under multiple climate change scenarios, which illustrates the adaptation rationale and impact. The economic rate of return is a robust 31%, demonstrating cost effectiveness.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

28. The project aims to reduce the impacts of climate change on the water resources in target watersheds in the country by promoting improved land-use practices and supporting restoration actions. The approach of the project entails building the capacity of the government entities responsible for improving land-use practices, providing grants to communities and CBOs, and upscaling regional and national climate information infrastructure and processes.

29. The accredited entity (AE) evaluated the proposed project as having moderate environmental and social risks and impacts, equivalent to category B in the GCF definitions of environmental and social risk categories. In assigning a moderate risk category to the project, the AE considered that the activities would be undertaken in rural areas where approximately 83 per cent are considered to belong to indigenous groups. While, overall, the ecosystem-based adaptation activities are expected to generate positive impacts on the resilience and livelihoods of the communities, there may potentially be minimal environmental and social risks and impacts from these restoration activities; for example, those related to the establishment of rainwater harvesting and storage, early warning systems, nurseries and seed banks, among others. The environmental and social due diligence by the Secretariat confirms the environmental and social risk category of the project proposal as moderate recognizing the likely risks and impacts will be within the project's influence area, reversible, and are readily mitigated using known best practices and methodologies.

30. The AE provided an environmental and social management framework (ESMF) describing the processes, procedures and guidelines for managing environmental and social risks and impacts of the project. The ESMF provided the necessary context for the environmental and social considerations of the project, the typical risks and impacts expected from the activities, and the mitigation measures. The identified risks and impacts in the ESMF are mostly related to capacity-building, local governance support and management planning, restoration activities, and climate information. Given that specific activities have not been identified, the potential environmental and social risks and impacts will be identified and analysed in detail once the specific activities and locations are known. Measures to mitigate the risks and impacts are outlined in the ESMF and further detailed in the environmental and social management plan (ESMP). The ESMP provides practical considerations for implementing the identified mitigation measures, including the feasibility of mitigation, responsible organization to implement the measures, schedule, completion and resources. The ESMP also provides the indicators for monitoring the implementation of the mitigation measures; for example, the number of grants awarded to indigenous peoples or organizations, early warning systems established, among others. Additional information on the types of restoration interventions, priority areas (departments), stakeholders and considerations for the inclusion of vulnerable groups, such as indigenous peoples, are included in the feasibility study for the project. Included in the safeguards documents submitted by the AE are the Environmental and Social Management System (ESMS) questionnaire, screening report and ESMS clearance (annex 7b) documenting the due diligence process of both the project executing entity and the AE. The document highlights the requirements related to the ESMS standards applied to the project, particularly the standard on indigenous peoples. Overall, the safeguards instruments presented by the AE provided adequate descriptions of the processes to mitigate identified risks and impacts. However, more-detailed assessments, such as the social and organizational assessment related to indigenous communities and stakeholder engagement plan, will need to be prepared once the specific activities and their locations are known and prior to the commencement of any work in the area.

31. The due diligence exercised by the AE highlighted several potential environmental and social risks and impacts arising from the project. Overall, most of the anticipated impacts are considered positive with limited potential adverse environmental and social risks and impacts. The adverse impacts may be manifested in the execution of specific restoration activities. The AE will undertake environmental and social screening for grant proposals and, where necessary, ensure

detailed assessments that are fit for purpose, such as the environmental and social impact assessment, will be prepared consistent with the ESMS of the AE.

32. **Biodiversity and natural resources.** There are protected areas with various formal and informal governance protections within the project areas. The activities to be supported by the project do not involve infrastructure, expansion of any protected areas or activities that may change the land uses (such as plantation). Restoration activities that will be undertaken in the areas where such activities will be legally or customarily allowed will be jointly implemented with the communities and CBOs. The restoration activities including water conservation and agroforestry will utilize traditional knowledge and practices and will use indigenous varieties of plants. The ESMF and the environmental and social risk screening result indicates that areas with known high biodiversity values will be avoided.

33. **Land requirements and tenure.** The project will not require lands to be acquired and, as such, no compulsory acquisition and resettlement is expected from the project. Respecting the traditional ownership and tenure regime of the lands, the AE and implementing entities will work with the existing land users and owners in implementing restoration activities. Lands for the early warning systems will use existing government facilities. Communities and traditional resource users will not be restricted during the restoration activities in their access to their natural resources.

34. **Pollution and environmental quality.** The project does not anticipate any emissions into the air, discharges into the water or contamination of the ground. Waste generated from the installation of early warning systems are considered insignificant and will be managed to comply with local ordinances.

35. **Community health and safety.** None of the activities involve the construction of critical infrastructure that may endanger the communities. The restoration activities and productive land-use options are based on traditional land uses traditionally practiced by the communities, for example, agroforestry and agro-silvopastoral systems.

36. **Indigenous peoples.** The ESMF indicated the presence of indigenous communities in the priority areas where restoration activities will be implemented. The indigenous peoples in the highlands are predominantly those belonging to the Mam, K'iché and K'akchiqel groups. The project, working with the communities, will support the restoration of degraded areas and no significant adverse impacts on the indigenous communities or their lands are anticipated. The indigenous communities, making up most of the population of the project area, will be the main beneficiaries of the project. The project plans to understand and promote the use of traditional knowledge and practices in the restoration of the areas. As the specific activities and the location of the restoration activities, including grants, are not yet known, the ESMF and the environmental and social screening described planning elements for more-detailed assessments of the indigenous communities, developing an indigenous peoples plan (IPP), and obtaining free, prior and informed consent. These are the requirements of the AE for the ESMS standard on indigenous peoples. A social and organizational assessment will be undertaken once the activities and locations are known and prior to the commencement of activities in the areas. The detailed assessment will inform the development of the IPP and will be the basis for further consultations and for obtaining potential free, prior and informed consent requirements from the specific affected communities. The social and organizational assessment will define the social and cultural criteria for the design of the practices, grants priorities and strategies for the early warning systems. Initial consultations were carried out in the districts of Huehuetenago, San Marcos, Totonicapán, Quiché and Chimaltenago where 71 per cent of the population are indigenous peoples. Succeeding consultations and engagement will also be defined and informed by the detailed assessment. Given that the majority of beneficiaries belong to indigenous communities, the AE and the implementing entities will also need to recognize and consider the inclusion of indigenous community representatives in the project decision-making processes. The AE has developed its own policy and standard that apply to indigenous peoples. The ESMF describes the application of the standard for indigenous peoples including the requirements of the AE for social assessments, provisions for an

IPP and guidance for free, prior and informed consent. Social and organizational assessments related to the indigenous communities (and, as may be required, an IPP) shall be developed to include measures to improve social inclusion and benefits sharing arrangements, a representative of indigenous peoples in the project decision-making process and continuing stakeholder engagement and consultations.

37. **Cultural heritage.** The social and organizational assessment will identify sacred sites and communal areas related to the traditional practices of the indigenous peoples. The restoration practices will utilize nature-based solutions, and the infrastructure such as early warning systems are considered low-impact and, therefore, no impacts are foreseen on tangible cultural properties.

38. The executing entity of the project is the Ministry of Environment and Natural Resources (MARN) through its Vice Ministry on Climate Change. MARN together with the National Forest Institute (INAB), Ministry of Agriculture and Livestock (MAGA) and National Protected Areas Council (CONAP) have implemented projects with multilateral development banks and are familiar with the ESS requirements and implementation. MARN is also the focal point for the Global Environment Facility and the national designated authority for GCF. Supporting MARN for this project, and as the executing entity, is the IUCN Guatemala Office. IUCN has a long history of supporting the Guatemalan government on biodiversity conservation, forest management, climate change adaptation, and water governance, among others. IUCN implements its activities with due diligence and management of risks and impacts guided by their ESMS and their standards. La Fundación para la Conservación de Guatemala (FCG) is a grant-making facility administering funds for biodiversity conservation and climate change adaptation. El Instituto de Agricultura, Recursos Naturales y Ambiente (IARNA), a part of Rafael Landivar University, is also being considered to support the technical outputs and design of the project. A national steering committee to be chaired by MARN will provide overall direction and guidance for the project. The responsibility of ensuring the implementation of the ESMF and ESMP resides with the IUCN and the project management unit (PMU), including the project execution units (PEUs).

39. Stakeholder consultations were carried out across the highlands particularly in the Departments of Huehuetanago, Quiché, Chimaltenago and Quetzaltenago. Additional workshops were undertaken with the government institutions, local municipalities and CBOs to receive feedback and validate the planned activities. The consultations and workshops ensured local representation and the active participation of men and women. A stakeholder consultation report is provided as part of the submission of the AE. Succeeding consultations are planned, particularly at the local level, once specific locations are identified. The consultations inform the communities of the project, gather their views and obtain their consent in fulfilment of the of the project's free, prior and informed consent requirements. The consultation will have to be culturally appropriate and the information provided in advance and in a form understood by the communities. The feasibility study has provided an initial stakeholder map of the project and succeeding consultations will need to consider, and update as necessary, the list of identified stakeholders and their mode of engagement.

40. A detailed project-level grievance redress mechanism is provided in the ESMF. The grievance redress mechanism is based on the existing IUCN three-stage grievance redress, reflecting escalation and levels of resolution. For the project, the complaints form will be translated into Spanish, local and indigenous languages and engage an independent ombudsperson trusted by the communities and part of the subnational steering committees.

4.2 Gender policy

41. The proposal contains a gender assessment report; therefore, it complies with the operational guidelines of the GCF Gender Policy and Action Plan. The national regulatory framework for promoting gender equality, the situation of women regarding participation in the formal labour market, access to resources and services such as education have been described in

the gender assessment. In addition, the assessment points out how climate change is impacting rural women in Guatemala and how gender considerations will be mainstreamed in the project.

42. The proposal contains a project-level gender action plan (GAP) that has outlines for each project output, gender-responsive activities with indicators, and sex-disaggregated targets to ensure that both project benefits and responsibilities are accessed by both men and women. Female-headed households, which the gender assessment identifies as predominant among non-agricultural households, will also be targeted in activities listed in the GAP. In addition, timelines for implementing the gender-related activities have been included in the GAP. In the logic framework of the proposal, sex-disaggregated targets have been included for some of the indicators at the fund-level impacts and project outcome levels. This will contribute to monitoring and reporting of gender-related results.

43. In the funding proposal itself, as a way of demonstrating the impact potential of the project, the AE has provided the expected number of beneficiaries disaggregated by gender. However, the number of beneficiaries relative to total population has not been disaggregated by gender. The stakeholder consultation report provided by the AE outlines the results of workshops conducted to seek inputs on the project during its preparation. Through consultations, men, women and indigenous peoples expressed the actions they would like the project to prioritize to address their needs.

4.3 Risks

Overall programme assessment (medium risk):

44. The Funding Proposal provides the climate change rationale based on the climatic information regarding the vulnerability of targeted project areas. Guatemala is a medium-income country and has the largest economy in Central America, with a growing GDP and moderate medium-term growth prospects. However, public investments that directly respond to climate change have not been a priority, and the limited resources in the government caused delays in the implementation of investment policies in the past as identified in the feasibility study. The FP states that the project is based on the political decision and willingness of the government to invest in climate change adaptation, and the project should take care of the public administration's procedures, so as not to delay the execution. The continued policy focus by the government administration will be critical for the success of the project. The AE including Project Management Unit will be relied upon for the alignment with national policies and risk oversight.

AE / EE capability to execute the current programme (medium risk):

45. International Union for Conservation of Nature (IUCN) is accredited as an international entity. The IUCN Guatemala has an extensive track record in preparation and implementation of projects in partnership with local and national governments, and CSOs in Guatemala covering 20 years.

46. The AE provides information on the EE's (MARN, FCG and IARNA) track record, examples of previous successes in managing a similar programme, pipeline of underlying projects, and corrective actions in case of underperformance under the grant facility. The track record of MARN and FCG does not deviate significantly from the average amount of project components in the proposal. The average project size that IARNA has managed is not provided.

Programme specific execution risks (medium risk):

47. Implementation risk: As identified in the feasibility study, the political crisis may cause the delay of the project execution. The project is envisaged to last for 7 years spanning over three government administrations. Therefore, the continuation of policy support is critical for the project

implementation. While the project governance relies on the National Steering Committee (NSC), the protests in a divided political environment could be a challenge to EE (MARN) in making timely decisions and providing strategic guidance. As a mitigation measure, audits are planned and budgeted on a yearly basis. The project audits are managed by IUCN FAH to ensure compliance and requirement from both IUCN and donors conditions. In case of NSC non-compliance with the set standards, the IUCN will have to implement corrective actions and report their implementation to GCF.

48. Co-financing level: GCF grants account for 58.5% of the total project financing (USD 37.6M). Co-financing will be provided by the government of Guatemala in the form of grant and in-kind contribution and KOICA in the form of grant. The status of co-financing needs to be checked again in case of GCF Board's approval and the GCF first disbursement is recommended to be subject to the verification of commitments of both the government of Guatemala and KOICA.

49. Economic viability: The AE has provided an economic analysis with 6% discount rate over 20 year-period. A sensitivity analysis was performed in 3 different scenarios based on the variation in the cost and benefits which results in positive NPV and IRR ranging from 21.11% to 37.06%. The financial analysis of estimating benefits and costs without considering ecosystem services has also been provided resulting a positive NPV and an IRR of 21.04% over a period of 20 years in the feasibility study.

The GCF portfolio concentration risk (low risk):

50. In case of approval, the impact of this proposal on the GCF portfolio risk remains non-material and within the risk appetite in terms of concentration level, results area or single proposal.

Conclusion (medium risk):

51. It is recommended that the Board considers the above factors in its decision.

Summary Risk Assessment		**Rationale**
Overall Programme	Medium	• Continuation of policy support is critical for the successful implementation of the project • AE shall monitor co-financing while providing GCF's funding to the project
AE / EE capability	Medium	
Project specific execution	Medium	
GCF's portfolio concentration	Low	
Compliance	Low	

4.4 Fiduciary

52. The Executing Entity for the project will be the Ministry of Environment and Natural Resources, Guatemala (MARN), through its Viceministry on Climate Change, Climate Change Department.

53. In accordance with IUCN regulations, a due diligence review has been conducted of implementing partners to guarantee that appropriate financial, procedural, and administrative capacities are in place to manage GCF funds.

54. As the AE, IUCN will provide overall management and oversight of operational, administrative, and financial issues of the project, according to IUCN rules and procedures approved by the GCF and outlined in the AMA.

55. The project will establish a Project Management Unit (PMU) which will be responsible for overall coordination, budget monitoring and control, and annual planning. Project Execution Units (PEU) will be established in-the-field in target zones, to guide day to day activities and budget expenditure under each output and will be led by corresponding co-executing partners. PEUs will respond to PMU technically, operationally and financially.

56. Project financial management and procurement will be undertaken in compliance with the IUCN Procurement Policy for goods and services, and IUCN financial management policy. Periodic financial reviews of project expenditures will be conducted to ensure funds are used for the purpose intended in the approved proposal. Disbursements from the GCF to IUCN HQ will be transferred to the IUCN office ORMACC - Guatemala as needed.

57. External financial audits in IUCN are carried out on a yearly basis by an independent firm and results are reported to the IUCN Council. IUCN's Oversight Unit at HQ performs internal audits to regional and national offices periodically.

58. For the activities of the project implemented by IUCN Guatemala Office, IUCN HQ will provide monitoring and oversight conducted by the Financial and Administrative Hub (FAH) whereas activities under the responsibility of implementing entities, IUCN will sign implementing agreements following its Procurement Policy for goods and services, which includes, amongst others, a due diligence process to be performed to partners receiving funds. This step was fulfilled during the preparation of this project. A risk assessment is conducted to review each organization's legal and operational capacities, financial stability, governance and management, internal controls, policies and procedures, and accounting and reporting systems.

4.5 Results monitoring and reporting

59. This is an adaptation project providing values for the core fund level indicators for direct beneficiaries (132,000 persons, of which 30 per cent are women).

60. Regarding section H.1, the logic framework is in line with the performance measurement framework of GCF. Section H.2, relating to the monitoring and reporting timeline, complies with GCF-specific reporting requirements.

4.6 Legal assessment

61. The Accreditation Master Agreement was signed with the Accredited Entity on 11 October 2016, and became effective on 13 January 2017.

62. The Accredited Entity has provided a copy of its signed internal approval decision confirming that it has the capacity and authority to implement the project.

63. The proposed project will be implemented in Guatemala, country in which GCF is not provided with privileges and immunities. This means that, among other things, GCF is not protected against litigation or expropriation in this country, which risks need to be further assessed. The draft bilateral agreement on privileges and immunities and the background note were submitted to the Foreign Ministry on 13 October 2017. As of November 2017, Guatemala was reviewing the draft bilateral agreement on privileges and immunities. No developments since then.

64. The Heads of the Independent Redress Mechanism (IRM) and Independent Integrity Unit (IIU) have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where the GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by the GCF are made only after the GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

65. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval; and

(b) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP088

The funding proposal of FP088 will not be considered by the Board at its twenty-first meeting.

Secretariat's assessment of FP089

Proposal name:	Upscaling climate resilience measures in the dry corridor agroecosystems of El Salvador (RECLIMA)
Accredited entity:	Food and Agriculture Organization of the United Nations (FAO)
Country/(ies):	El Salvador
Project/programme size:	Medium

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
Integrated approach to safeguard primary production and livelihoods of poor population against the impacts of climate change	Many of the proposed interventions would also be rational without the impacts of climate change
Involving all relevant levels of government and civil society organizations	Rural communities may lack trust in the government due to long-term violent conflicts that severely affected rural areas
Strong climate rationale, proposal contains wealth of scientific evidence supporting the proposed interventions	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. The Dry Corridor region of Central America is experiencing intense climate volatility – it is severely impacted by both El Niño and La Niña climatic events. The increasing intensity of these recurring events necessitates adaptation in the agricultural sector to safeguard the ecosystem services and primary productivity of the land. Notwithstanding climate change, El Salvador is already water-stressed, with the per capita availability of fresh water well below the critical threshold of 1,700 cubic metres per capita per year.

4. The agricultural sector of El Salvador is dominated by small-scale farmers with limited financial capacity to change their land use practices to a system which is more resilient to climate variability. Being a relatively densely populated country with agriculture as the principal source of employment, many farmers are cultivating lands that, even under favourable circumstances, are precarious both in terms of productivity and environmental resilience, and at severe risk of crop failure or environmental degradation and disasters during periods of drought or extreme precipitation, respectively.

5. The proposed project aims to enhance the resilience of the small-scale agricultural sector in a large swath of El Salvador through the implementation of improved land management, which will better utilize and manage precipitation to increase availability of soil moisture and groundwater resources during dry spells and lessen run-off (leading to erosion, flooding) during wet spells. The proposed interventions lead to an environmental and social safeguards (ESS) category B classification.

6. Total project finance is USD 127.7 million, with a request to GCF for grant finance of USD 35.8 million (28.1 per cent). The Government of El Salvador is contributing USD 78.0 million through two Ministries (61.1 per cent) and the Fund for the Americas Initiative (Fondo Iniciativa para las Américas - FIAES) is contributing USD 13.8 million (10.8 per cent), both in the form of non-refundable grants.

2.2 Component-by-component analysis

Component 1 - Resilient access to food and water in family farms (total cost: USD 92.41 million; GCF USD 21.97, or 23.8 per cent)

7. Under this component, the project will increase the resilience to climate change of farmers' access to food and water; sustainability of their livelihoods depends on these two most fundamental factors. Interventions in agriculture will be focused principally on promoting the resilience of staple grain production and of vegetable and livestock production where these already exist, using an integrated adaptive agroecosystem approach. Specific adaptation strategies focus on conservation and recharge of soil moisture, the introduction of crop varieties that can better withstand droughts, and small-scale irrigation, agroforestry and silvo-pastoral systems. Almost four thousand households will be equipped with rainwater collection systems for domestic consumption. To foster sustainability of the interventions, local organizations will be capacitated to maintain and expand the interventions.

8. The proposed interventions are all proven to be effective in other countries with similar conditions (including in Central America) and are responsive to the stated climate rationale. In addition to the adaptation benefits – the principal objective of the proposed project – there are also mitigation benefits through increased soil carbon, woody vegetation and reduced reliance on chemical fertilizers.

Component 2 – Increased resilience of flows of environmental services at landscape level (total cost: USD 23.63 million; GCF USD 8.53 million, or 36.1 per cent)

9. To safeguard the provisioning of water through stream flows in agricultural areas, upper catchment areas will be protected through revegetation with native tree species. Restoration plans will be drawn up with the affected communities, who will also participate in the activities of tree planting, assisted natural regeneration, and long-term maintenance of the protected areas.

10. This component is considered complementary to the interventions proposed under component 1 and is directly related to the climate rationale of the proposed project. The full engagement of local communities is considered a strong point as it will lead to increased ownership and guardianship of the protected areas.

Component 3 – Improved governance and information flow in support of sustainability and scaling up (total cost USD 5.4 million; GCF USD 3.64 million, or 67.5 per cent)

11. This component focuses on building capacity in local institutions to support land users in sustainable management of the natural resources. Additionally, adaptation issues will be mainstreamed into regulatory, policy, planning and incentive instruments.

12. This component has a good combination of approaches to support long-term sustainability of the intervention and includes government agencies at national and local levels and civil society organizations.

Project Management (total cost: USD 6.24 million; GCF cost: USD 1.7 million, or 27.2 per cent)

13. All project management costs are to be covered through the grant requested of GCF. Project management costs amount to 5.0 per cent of the total grant request to GCF.

III. Assessment of performance against with investment criteria

3.1 Impact potential *Scale: High*

14. The proposed project has both mitigation and adaptation impacts. While neither is very high relative to the investment, in combination the impact at the indicator level is considerable.

15. The funding proposal demonstrates a clear adaptation need for farmers in El Salvador. The economic analysis estimates the expected reductions in various crop yields due to climate change and the resulting costs to farmers.

16. The direct beneficiaries will see a great impact on their resilience both to droughts (reduced crop failure and yield depression) and floods (erosion, landslides, etc.). The broader population will see benefits through improved delivery of ecosystem services, particularly with regard to stream flow.

3.2 Paradigm shift potential *Scale: Medium*

17. The paradigm shift potential of the project is manifold. It presents an opportunity for scaling up and knowledge-sharing beyond the direct project area, and the policy-oriented activities under Output 3 contribute to the creation of an enabling environment not only for the specific activities of the proposed project, but for environmental management in general.

18. The paradigm shift potential rating is mitigated by the fact that many of the proposed interventions – although necessary and funded through the Government co-financing – are not strictly necessary from the perspective of climate change: they would make sense in the absence of climate change considerations too.

3.3 Sustainable development potential *Scale: Medium*

19. The project will have many ecological co-benefits for not only the direct beneficiaries through increased environmental resilience, but also the population at large through reduced flooding and increased availability of hydrological resources.

20. Social co-benefits include improvements in the diet of the direct beneficiaries and reduced incidence of water-borne illnesses among the households that receive rainwater collection systems.

3.4 Needs of the recipient *Scale: High*

21. The climate change rationale for the proposed project is high. Harvests are regularly lost or damaged during droughts or excessive rainfall, also leading to environmental degradation. The direct beneficiaries are among the poorest households in the country.

22. While El Salvador is developing economically, both wealth and income distribution are among the most skewed in the world, implying that the target beneficiaries of the proposed project are not benefiting from the economic development enjoyed by the urban elites. The government budget does not allow for the kind of investments that are required to overcome the impacts of climate change for the smallholder rural population.

3.5 Country ownership *Scale: High*

23. The proposal aligns well with national policies on climate change such as the Framework Law on Climate Change, the National Strategy on Climate Change and the nationally determined contribution (NDC), as well as with more general policy frameworks such as the National Environmental Policy.

24. During proposal development, the participation of representatives from the ministries and other governmental agencies was very evident.

3.6 Efficiency and effectiveness *Scale: High*

25. The project addresses a market failure resulting from information asymmetries and contributes to a public good by improving the supply of non-market ecosystem services. The economic rates of return range from 16-41 per cent over 20 years depending on the type of farm and location, and they are robust to different estimates of the value of carbon. The relatively high economic returns derive from the provision of ecosystem services, including carbon sequestration, and the increasing farm revenues compared to decreasing revenues under a climate change scenario. The financial internal rates of return range from 14-26 per cent over 20 years depending on the type of farm and location. While the financial rates of return are relatively healthy, they are equal to an annual payment of USD 30 per hectare (ha) and USD 74/ha to smallholder farmers. This is sufficient to make the practices viable, but not high enough to support a market for the provision of technical services, especially in the short and medium term while awareness is being developed among farmers of the benefits potentially generated from adaptation measures.

26. The proposed interventions are well-studied and have been applied under similar conditions in other countries for at least the last three decades, largely without referencing climate change impacts. While the expected climate change in El Salvador makes implementation of sustainable land management imperative, it has been the rational choice for land management for much longer.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

27. The accredited entity (AE) considers the project as having moderate environmental and social risks and impacts, equivalent to GCF category B. The risk category takes into account the smallholder farm activities that are mainly restoration and rehabilitation of degraded lands. The project supports activities to build the capacities of communities in ecosystem restoration, improving productive systems in degraded lands, and in integrating climate information into agroforestry and landscape management and practices. The Secretariat's assessment confirms the project as having an overall environmental and social risk category B as assigned by the AE.

28. The AE provided an environmental and social management framework (ESMF) that describes the due diligence process to be undertaken by the implementing institutions and the AE for project activities, as the ESS instrument. The ESMF is comprehensive and provides information pertaining to environmental and social risk screening, mitigation and management of risks, monitoring and reporting. An indigenous peoples planning framework (IPPF) is included as part of the ESMF, describing how the project fulfils and will continue to fulfil the requirements of the AE policy on indigenous peoples and cultural heritage as well as the country's obligations under international agreements and conventions such as the International Labour Organization Convention 169 and the United Nations Declaration on the Rights of Indigenous Peoples. In addition, the ESMF included a biodiversity management plan indicating the overall considerations for restoration activities within the identified protected areas. Furthermore, the ESMF has an

exclusion list with criteria for activities that will not be supported by the project, and eligibility criteria for the selection of sites for the project.

29. The AE has disclosed the ESMF on its website in line with the GCF Information Disclosure Policy. The AE will disclose applicable information for moderate risk subprojects and take additional measures to ensure that such information is available to a variety of local stakeholders. The ESMF outlines the measures that will be taken by the AE to ensure the widest dissemination and disclosure of project information, including any details related to applicable environmental and social safeguards, given the extent of beneficiaries targeted by the project.

30. The project's activities will be screened by the AE using a screening checklist which has been annexed into the ESMF. Activities will be screened to determine an environmental and social risk category for each activity and the ESS instrument to be employed in the management of potential risks and impacts. Potential impacts that have been anticipated by the AE include those related to biodiversity and indigenous peoples:

(a) *Indigenous peoples*: the IPPF developed for the project is well crafted and provides a good narrative of the consultation process including an agreement on the free, prior and informed consent that will be expected. The assessment takes note of the further requirements that need to be considered including continuing engagement and inclusion of representatives from the indigenous peoples in the development and monitoring of project activities. The IPPF includes recommended actions that can be implemented as part of the project with respect to use of traditional knowledge and safeguarding livelihoods of indigenous peoples. The ESMF workplan outlines timelines and responsibilities for the development of a participatory monitoring system to monitor implementation of the environmental and social issues, and capacity-building in the context of the project's activities. A process to obtain free, prior and informed consent from indigenous peoples was conducted with indigenous organizations of El Salvador for the project, and evidence is included in the IPPF. Additional steps will be undertaken throughout the lifespan of the project with respect to participatory monitoring and evaluation of the free, prior and informed consent agreement and documentation and disclosure of the lessons learned from the project;

(b) *Biodiversity conservation*: a number of international and national natural protected areas are located in the project area. Though the AE has stated that none of the project's activities are expected within natural protected areas, a biodiversity management framework has been provided as part of the ESMF for potential impacts related to biodiversity. The framework describes the characteristics of biodiversity in the project areas, the challenges being faced and how the project's activities will conserve biodiversity and other natural resources. Biodiversity management plans with defined mitigation measures will be prepared during the inception phase of the project after identifying specific intervention areas and assessing potential negative impacts. The project aims to protect and conserve biodiversity, including intervening in priority buffer zones without tree cover by implementing forest restoration activities;

(c) *Pest management*: with respect to pest control, the AE will apply an integrated pest management approach in cases where chemical pesticides are used as part of the project; and

(d) *Land tenure*: the AE has also incorporated tenure related matters in the ESMF workplan. In this regard, the AE will undertake a land tenure legal framework review to identify gaps and establish a land tenure task force with relevant institutions to recommend tenure solutions for sustainable agricultural practices and adaptation to climate change. This is a positive aspect of ESS that has been integrated into the project.

31. The cost of environmental and social measures outlined by the AE and that will be implemented as part of the project has been provided in a separate annex to the main ESMF document for the funding proposal.

32. The AE will also act as the executing entity (EE) of the project, and the national Ministry of Agriculture and Livestock (MAG) and Ministry of Environment and Natural Resources (MARN) will be implementing partners. A project management unit will be established to implement the project. In addition, the project will engage specialists with expertise and experience on biodiversity, tenure and indigenous peoples to work under the coordination of the project's safeguards officer who will be part of the project management unit and ensure overall compliance and support the monitoring of safeguards issues. As AE, FAO will maintain oversight of the project and its implementing partners, including where ESS matters are concerned. The ESMF workplan includes capacity-building for project staff on environmental and social safeguards in the first quarter of the first year of project implementation by the project safeguards officer. The safeguards officer will be responsible for ensuring compliance with safeguards' standards as well as monitoring and reporting on related matters.

33. The ESMF contains a summary of consultations undertaken during preparation of the project with a variety of stakeholders. Outcomes of the stakeholder engagement activities include identification of environmental and social risks associated with the project. The AE will conduct additional consultations at the inception phase of the project and during its implementation.

34. The project-level grievance redress mechanism described in the ESMF includes details of the AE's contact point for raising grievances related to the project. Provisions for grievances related to indigenous peoples are also described. Information on how details of the grievance redress mechanism will be disseminated to local communities that may be affected by the project are included in the ESMF by the AE.

4.2 Gender policy

35. The proposal contains a gender analysis and action plan and therefore complies with the operational guidelines of the GCF Gender Policy and Action Plan. More detailed information on the action plan is provided in annex 1 of the Environmental Social Management Framework. The context of gender issues is presented in the analysis at the national, sectoral and local levels. It reviews gender issues in the contexts of agriculture, labor, education, access to resources (such as land, technology, information etc.), vulnerability of women, men, youth and other social groups, the adaptive and vulnerability levels of women, men and others, decision-making over resources by both women and men, and the situation of female heads of households. This clearly provides an understanding of the gender and social issues in the sectors within the scope of the project. The analysis also describes opportunities and entry points that the project offers to ensure access to project benefits by men, women, youth and vulnerable groups. It has undertaken stakeholder consultation which engaged with women and their views are presented.

36. The proposal contains a project-level gender action plan (GAP) which has gender-related activities, performance indicators and targets and indicates that it allocates 35 per cent of the budget to the gender-related work:

(a) The gender assessment indicates that it will allocate 35 per cent of the budget to gender-related interventions with an overall target of 35 per cent for women, 5 per cent for indigenous people and 10 per cent for youth. There are clear activities targeted for women, youth and indigenous people, including training in nursery activities; training in sustainable production and new technologies; at a technical level, training of women technicians; and training of community extension agents and youth;

(b) Specific timelines will be provided at a later stage. Currently the timelines provided are across five years, but this will be further disaggregated as subprojects are determined and developed;

(c) Once subprojects are determined, a more specific work plan will be developed which will also include the timeline and establish a baseline. Targets provided in the gender action plan will be in line with those set out in the funding proposal; and

(d) Annex 1 of the environment and social management framework sets targets for female heads of household as part of the community that will be prioritized as indicated in the action plan.

37. Annex 1 of the ESMF provides the kinds of activities which can target women specifically, such as awareness-raising, capacity-building, farmer field schools (at least 38 per cent female participation), participation in stakeholder engagement discussions (3), rainwater harvesting, (501) and resilience practices for female headed households (19,000). These activities will contribute to the objective of ensuring women have access to information and technology.

38. The project will also create alliances with organizations specialized in promoting gender equality and women's empowerment to address the challenges for engaging women in project aims and activities. The intervention will seek to work with both female headed households and women in partnerships.

39. Sex-disaggregated targets have been set for a number of performance indicators and are provided in the GAP and annex 1. Project implementation for the gender component will be spearheaded by FAO to oversee the work of gender specialists who will provide technical assistance to the executing entity for implementation of the GAP, verify quantitative data, and monitor and report progress on implementation of the GAP.

4.3 Risks

Overall programme assessment (medium risk):

40. The funding proposal requests a grant of USD 35.8 million from GCF for investing in resilient access to food and water in family farms, landscape management, and improved environmental governance. The total project cost is USD 127.7 million, and the Government of El Salvador will contribute 61 per cent of the total project financing (USD 78 million). There is no co-financing from the AE.

41. El Salvador's economy is dependent on agriculture, which contributes 21 per cent of total employment. The project will focus on agroecosystem-based climate change adaptation. The funding proposal states that the activities to be supported with GCF financing will entail no revenue generation or cost recovery for the Government of El Salvador and the Government seeks 100 per cent grant resources for the project.ee

42. While the amount of government contribution shows strong support at the national level, the feasibility study highlighted weak governance, lack of institutional capacities, and limited budget as barriers to the Government's initiatives. Given the recent budget cuts that ministries have undergone, institutional stability and adequate resource allocation to the project will be essential. As per the term sheet provided by the AE, in the case of changes to the amount/disbursement of co-financing, the AE will consult GCF to address the measures to undertake.

AE / EE capability to execute the current programme (medium risk):

43. FAO has an extensive track record in preparation and implementation of projects in developing countries. The AE will also serve as one of the executing entities and will coordinate with the co-executing ministries (MAG and MARN) to ensure sound implementation of the project. The MAG and MARN will engage with project stakeholders during the implementation. These ministries have previous experience working with FAO and the funding proposal states that they have sufficient local presence and track record in implementing projects. In case several ministries and AEs are involved in more than one GCF-funded project in the country, there will be a coordination mechanism to share information, and AEs and executing entities will seek complementarities and synergies.

Programme specific execution risks (medium risk):

44. *Limited participation by the project beneficiaries*: given the poor living conditions and low incomes of farmers in the project target area, some farmers may find it challenging to fully participate in the project. The funding proposal states that unsecure tenure and short-term lease agreements encourage unsustainable agriculture practices. This may lead to a lack of interest among project beneficiaries as the project requires them to take responsibility as producers. The project proposes addressing this risk by recruiting a tenure specialist and establishing a land tenure task force to identify gaps and look at lease contract issues, land fragmentation and tenure rights recognition. The project will also facilitate access to land for identified beneficiaries and promote participation among land owners by presenting the demonstration farm and providing technical training.

45. *Local government support and coordination of ministries*: the funding proposal states that the political stance of local governments and lack of coordination between ministries may hinder project implementation. The activities under component 3 will address these risks to ensure the integration of national institutions and policy coherence (e.g. the creation of a strategy to facilitate political processes at the local government level, establishment of agreements to share information between ministries).

46. *Economic and financial viability*: as per the funding proposal, the economic analysis of the project considers benefits from a climate-resilient agriculture system and ecosystem services. The economic internal rate of return per category of farmers ranges from 16 per cent to 41 per cent over a 20-year period, whereas it ranges from 0.9 to 37.7 per cent over a 10-year horizon. The economic net present value remains positive in the case of a reduction of 20 per cent of expected benefits, a delay in benefit generation of 2 years, or 40 per cent of cost overruns according to the sensitivity analysis. The financial analysis of activity 1.1 (~30 per cent of project cost) results in a positive internal rate of return, ranging from 14.5 per cent to 26 per cent over a 20-year horizon, but over a 10-year horizon the net present value will be negative.

Compliance risk (medium risk):

47. The project is considered medium risk based on the preliminary assessment. A full assessment will be conducted at the FAA stage.

48. The proposal highlights the longstanding successful relationship between FAO and the executing entities, as well as the financial control mechanisms which will be put in place. In addition, the executing entities have considerable experience in managing donor funds for international organizations. These may be mitigating factors in considering whether there is a real risk of money laundering, financing of terrorism, or related illegality.

49. The proposal does not highlight land tenure issues, although an element of the project is the strengthening and developing land tenure regulation. Beneficiaries will be local farmers in some of the most vulnerable parts of El Salvador.

GCF portfolio concentration risk (low risk):

50. In case of approval, the impact of this proposal on the GCF portfolio risk remains non-material and within the risk appetite in terms of concentration level, results area or single proposal.

Summary risk assessment and recommendation:

51. It is recommended that the Board consider the above factors in its decision.

Summary risk assessment	Rationale

Overall programme	Medium	• The project has considerable co-financing from the government (61 per cent) of the project cost, though there is no co-financing from the AE. • The AE has relevant experience of working with the EEs. • The AE needs to ensure that co-financing is available in a timely manner for the successful execution of the projects.
Accredited entity/ executing entity capability	Medium	
Project specific execution	Medium	
GCF's portfolio concentration	Low	
Compliance	Medium	

4.4 Fiduciary

52. FAO will be the AE and will also act as executing entity for the GCF finance. MAG, MARN, and the Fund for the Americas Initiative (Fondo Iniciativa para las Américas – FIAES) will be co-executing agencies. FAO will be responsible for the financial execution of GCF funds, according to FAO rules and regulations and in accordance with the accreditation master agreement (AMA). Accountability on the use of financial resources will be facilitated through the review of annual and biannual project reports, as well as through audit and monitoring reports.

53. To implement the project, a project management unit (PMU) will be established, which will coordinate and support project implementation and day-to-day activities during the project life-cycle, in close consultation with the governing structures of the project.

54. During implementation, FAO will provide oversight and quality assurance in accordance with its policies and procedures. This may include monitoring missions, spot checks and participation at technical support committee meetings. The project will be subject to the audit regime of FAO, including the external audit and internal audit functions. FAO will have overall responsibility for quality assurance and oversight of co-executing entities. In addition to this, FAO will be responsible for the financial execution of GCF funds according to FAO rules and regulations mainly contained and detailed in the FAO Handbook (including those referring to financial monitoring, audit and procurement). Furthermore, FAO is responsible for financial monitoring, and is supported by a management team comprised of a Programme Assistant, Management Assistant, and a Strategic Operations Officer. This team will interact with and support the work of the PMU.

4.5 Results monitoring and reporting

55. As a cross-cutting intervention, the proposal reports in section E.1.2, that the project will directly benefit 50,000 farm families with a total of 225,000 beneficiary family members (117,000 women and 108,000 men) with 20,500 of these direct beneficiaries being indigenous peoples. Overall, the project will target 33 per cent (total beneficiaries) of the population vulnerable to climate change in the project area.

56. The project asserts that the intervention will lead to a reduction of 210,842 tonnes of carbon dioxide equivalent (tCO_2eq) per year during the project's lifespan of five years and the capitalization phase (14 years). Cumulatively, the project will sequester 4,216,835 tCO_2eq.

57. Under Section C.3, the programme description, the project has a theory of change diagram showing a clear causal linkage/pathway between the problem statement and strategic result area with clear reference to assumptions and risks.

58. The timetable of project implementation (Section C.8) is well structured and sequenced.

59. Regarding Section H.1, the logic framework is in line with the GCF performance measurement framework (PMF).

60. Section H.2 relating to the monitoring and reporting timeline complies with the GCF-specific reporting requirements.

4.6 Legal assessment

61. The Accreditation Master Agreement was signed with the Accredited Entity on 08 June 2018. It is not yet effective.

62. The Accredited Entity has provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

63. The proposed project will be implemented in El Salvador, a country in which GCF is not provided with privileges and immunities. This means that, among other things, GCF is not protected against litigation or expropriation in this country, and as such the associated risks need to be further assessed. The Secretariat submitted a draft privileges and immunities agreement to the government of El Salvador on 12 December 2015. The negotiations of the agreement started but have not moved forward since 8 August 2016.

64. The Heads of the Independent Redress Mechanism and Independent Integrity Unit have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by GCF are made only after GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

65. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval or the date on which the accredited entity has provided a certificate or legal opinion confirming that it has obtained all internal approvals, or the date of effectiveness of the AMA entered into with the Accredited Entity, whichever is later; and

(b) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP090

Proposal name:	Tonga renewable energy project under the Pacific Islands Renewable Energy Investment Program
Accredited entity:	Asian Development Bank (ADB)
Country/(ies):	Kingdom of Tonga
Project/programme size:	Medium

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The project will assist the Government of Tonga in achieving its energy transition towards 50 per cent renewables in the country's generation mix while laying the foundation for private sector investments in renewable energy	The required investment has been assessed based on current available data for renewable projects in the Pacific supplied by the accredited entity. However, the decreasing costs of solar and electricity storage technology might result in lower bids at time of implementation. A point of caution would be that unused funds reflow to GCF
The project will deliver infrastructure that enables transformation of the country's electric utility Tonga Power Limited (TPL)	A point of caution will be that all assets resulting from this investment are reflected in the books of TPL at cost, while the concessionality of GCF financing is passed to the end users in the form of lower electricity tariffs
The project targets Tonga, which is ranked as second most vulnerable country worldwide	While the infrastructure lays the technical foundation for Tonga's main grid to absorb more renewable energy in the future, the private sector may still be reluctant to invest in independent power plants due to the perceived country risk profile

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. The proposed Tonga Renewable Energy Project (TREP) is the second project submitted by the Asian Development Bank (ADB) under the approved GCF programme – Pacific Islands Renewable Energy Investment Program (FP036).[1]

4. Tonga is a small island developing State (SIDS) and is highly vulnerable to climate change and external economic shocks. It is ranked as the second most vulnerable country worldwide. Like many other small Pacific islands, Tonga's electricity production relies almost exclusively on diesel generation, which currently counts for 95 per cent of electricity generation. As an effort to reduce its greenhouse gas (GHG) emissions and increase its energy security, the Government of Tonga has set a target to increase the share of renewables in its power generation mix to 50 per cent by 2020 and to 70 per cent by 2030. A phased approach has been proposed and followed to achieve this goal.

5. To date, electricity generated from renewable energy sources accounts for approximately 27 per cent of the generation mix, which is still insufficient. A fundamental barrier to variable renewable energy solutions is the intermittency of supply, which makes systems unstable and operations unpredictable. Storage systems are a way of addressing these technical issues. At the same time, private sector investment appetite in grid-connected power plants is limited when operation of the grid is unpredictable. This is due, among other factors, to the poor financial returns linked to the intermittency of grid operations.

6. The proposed activities were a response to these challenges and aim to help Tonga achieve its transformational shift, moving away from fossil fuels. The storage system will lay the foundation for more renewable energy on the main island, the grid-connected photovoltaic (PV) system will provide the contextual asset for operating the storage system, and the mini-grid infrastructures are non-commercial investments on the outer islands that will help the country towards the 50 per cent renewable energy share plan.

7. The total project cost is estimated at USD 53.2 million. GCF is requested to finance USD 29.9 million in the form of grants, accounting for 56.2 per cent of the total cost. The remaining costs are shared among the accredited entity (AE) and other development partners, all in the form of grants. These include (i) ADB: USD 12.2 million; (ii) Government of Australia: USD 2.5 million; (iii) Tonga Power Limited (TPL): USD 3 million; and (iv) Government of Tonga: USD 5.6 million.

8. The project is classified as Category B for environmental and land acquisition and category C for indigenous peoples per the ADB Safeguard Policy Statement, which is equivalent to the environmental and social safeguards (ESS) Category B per the GCF accreditation framework.

2.2 Component-by-component analysis

Component 1: Battery Energy Storage Systems (BESS) on Tongatapu (total cost: USD 30.16 million; GCF cost: USD 18.16 million, or 60 per cent)

9. This component supports the installation of multiple units of BESS with a preliminary capacity of 10.1 megawatts (MW)/19.9 megawatt hours (MWh) to overcome the technical barrier to greater renewable energy integration to the grid and therefore unlock private sector investment into renewable energy development. The BESS will enable installation of about 7.8 MW of grid-connected renewable energy (4 MW solar PV and 3.8 MW wind power) generation capacity on Tongatapu (main island) to be financed by independent power producers.

Component 2 – Grid-connected renewable energy generation on 'Eua and Vava'u Islands (total cost: USD 5.41 million; GCF cost: USD 4.77 million, or 88 per cent)

10. This component will install about 1.15 MW of new solar PV connected to the existing grids in the two islands, associated with the necessary BESS to ensure grid stability. This is to meet the rising energy demand by phasing out the diesel generators. As a result of this component, the

[1] See FP036 <https://www.greenclimate.fund/-/pacific-islands-renewable-energy-investment-program>.

installed electricity generation capacity will increase from 2.86 MW (with diesel accounting for over 78 per cent) to 3.51 MW (with diesel accounting for less than 64 per cent). All assets under outputs 1 and 2 will be operated and maintained by TPL.

Component 3 – Renewable-based hybrid systems and mini-grids on outer islands (total cost: USD 8.06 million; GCF cost: USD 4.1 million, or 51 per cent)

11. Households on the outer islands have limited or unreliable electricity supply. They rely on either outdated solar home systems or small portable generators that are managed at the household level. This component will install renewable-based mini-grid systems coupled with small-scale BESS in the five targeted outer islands. The mini-grid systems under this output will be operated by each islands' energy company. The islands' energy companies provide the day-to-day operations, maintenance and administration of matters related to the electricity supply. TPL will be contracted by the Government of Tonga on a needs basis to provide periodic and preventive operations and maintenance for the assets.

Component 4 – Capacity-building and project management support (total cost: USD 3.15 million; GCF cost: USD 0 million, or 0 per cent)

12. The project management cost will be fully covered by the co-financiers.

III. Assessment of performance against investment criteria

3.1 Impact potential *Scale: Medium*

13. The project will lead to estimated GHG emission reductions of 13,616 tonnes of carbon dioxide equivalent (tCO_2eq) annually, which, over the project's 25-year lifespan, will lead to a total of 340,400 tCO_2eq. The foundation set in this project will also enable future renewable energy investments, further abating the CO_2 emissions of the country.

14. Although the project was classified as mitigation-only, it will benefit significantly the vulnerable communities, especially the marginalized populations on the outer islands, by enabling affordable energy access. Furthermore, the equipment and facilities to be installed are planned to be suitable to the specific climatic circumstances of Tonga, hence increasing resilience to climate and disaster risks throughout the project lifecycle. The project also targets almost the entire population of the country, totalling up to 96,000 beneficiaries.

15. Overall, the impact of the project is "medium" given the project size. However, this is common for SIDS that are geographically remote while lacking the local capacity to upscale the impact.

3.2 Paradigm shift potential *Scale: High*

16. The proposed project aims at shifting the energy supply in Tonga from the current situation of high dominance of fossil fuel to a low-emission and climate-resilient pathway. The storage system will catalyse transformation of the country power generation mix, by preparing the ground for private sector investment.

17. The paradigm shift will be evident to the population of Tonga, since the investment will be reflected in TPL finances. Assets will be registered at value in the utility balance sheet resulting in the reduction of electricity prices, a transformation that is scalable as renewables will increasingly replace diesel imports.

3.3 Sustainable development potential *Scale: Medium to High*

18. The project is expected to result in a range of economic, social and environmental benefits to the country. The foremost will be affordable electricity access for its inhabitants. Electricity tariffs in Tonga are at cost recovery levels, but due to the high cost of generation they are relatively high, averaging USD 0.32/kWh in 2016. By reducing the cost of generation, GCF concessionality will be passed on to consumers in the form of lower tariffs. Lower electricity prices will increase the economic returns on productive use.

19. The improved reliability of power supply from renewable sources will not only reduce the country's budget for imported fossil fuels but will also support household income-generating activities. The infrastructure will also increase the climate resilience of the country given the climate-proofing design of the system, enabling access to reliable electricity even in times of extreme weather conditions.

20. The project design also includes gender consideration and makes efforts to involve women in the project activities ensuring gender mainstreaming in the energy development plans.

3.4 Needs of the recipient *Scale: High*

21. The project will reduce the country's dependency on diesel imports, enhancing energy security on the one hand, and reducing the vulnerability of beneficiaries to diesel price fluctuations.

22. While the development of renewable energy in Tonga is overdue, access to both public and private finance has been very limited. The Government of Tonga has limited revenue resources and is not able to further invest in the project while also exempting all duties and taxes that will be incurred through implementation of this project. Access to private finance is partly limited due to the perceived high off-take risks. This barrier will be removed after installation of the BESS system and more flexible pricing by TPL. For this reason, GCF financing is considered necessary.

3.5 Country ownership *Scale: High*

23. The project is well aligned with the priorities of the Government of Tonga on climate change as reflected in its Second National Communication to the United Nations Framework Convention on Climate Change and its nationally determined contributions, both of which highlighted the need for renewable energy deployment and energy security enhancement. The project is also in part a response to the regional Framework for Action on Energy Security in the Pacific 2010–2020, which was endorsed by all Pacific Island leaders in 2010. The Government of Tonga exempted all duties and taxes to be incurred at implementation of the project, accounting for USD 5.6 million, further indicating country ownership.

24. ADB, as the AE, has abundant working experiences in the Pacific Region, including in the energy sector. This project is subsequent to the approved GCF Pacific Islands Renewable Energy Investment Program (FP036) which aims to shift the energy sector in the Pacific Island countries concerned. The TREM was developed with inputs from various stakeholders, including the Ministry of Finance and National Planning (MFNP), Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC), TPL, ADB and potential partners.

3.6 Efficiency and effectiveness *Scale: Low*

25. The economic rate of return for the project is 10 per cent, although a sensitivity analysis indicates that increased capital and operating expenses combined with lower diesel prices would reduce them to near the ADB hurdle rate of 6 per cent. When examining specific subprojects, only two have economic rates of return significantly above the hurdle rate, which illustrates the difficulties of providing cost-effective electricity infrastructure to small islands. It should be noted

that the economic analysis does not assume a price premium for delivering materials and installing infrastructure on the more remote outer islands. It also does not include the project's capacity-building or project management costs. These changes would reduce the economic returns, although probably not below 6 per cent.

26. The project's GCF cost per tCO_2eq reduced is USD 87.8 which is comparatively high. This is in part because of the climate-proofing design of the equipment and facilities to be installed in the project. Tonga's energy infrastructure is prone to natural disasters that are exacerbated by climate change, such as cyclones, earthquakes, flooding and tsunamis. The design will incorporate adequate climate-proofing and geohazard-preventive measures to lessen these extreme events. The higher cost is also a result of Tonga's remoteness to the market and its lack of human capacity and necessary equipment.

27. All financiers contribute to the project in the form of pure grants, including GCF, ADB, the Government of Australia and TPL. While the project will potentially result in economic savings from reduced imported fossil fuels, the high level of indebtedness of the country and TPL justifies to some extent the use of the GCF grant. This concessionality will be passed on to the end-users by enabling access to affordable energy, including for the most vulnerable communities in outer islands.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

28. TREP supports the shift in power generation in Tonga to low-carbon, climate-resilient and affordable energy that will be available to its current and future population. To achieve its objective, the project will support the following outputs: (i) installation of a BESS in Tongatapu; (ii) installation of grid-connected renewable energy generation in 'Eua and Vava'u islands; (iii) installation of a mini-grid renewable-based hybrid system with small-scale BESS in identified outer islands; and (iv) capacity-building and project management. This proposed project is part of the Pacific Islands Renewable Energy Investment Program.

29. The AE classified the project as category B for environment and land acquisition and category C for indigenous peoples pursuant to the AE Safeguard Policy Statement (SPS 2009), and aligned to the safeguards processes of the programme. This project is classified as category B for environment, due to likely impacts on the environment characterized as localized, reversible and readily mitigated; and as category B for land acquisition because of the need to lease privately owned lands and the potential impacts on non-land assets, including crops and trees. According to the Government, there are no indigenous peoples who are considered as distinct and vulnerable or requiring protection and due consideration. Thus the AE safeguard policy on indigenous peoples was not applied. Due diligence by the Secretariat confirms an overall environmental and social risk category as moderate, equivalent to the GCF category B definition.

30. The Pacific Islands Renewable Energy Program developed its own Environmental Assessment and Review Framework (EARF) and Land Acquisition and Review Framework (LARF) that describe the processes for further due diligence and management of environmental and social risks and impacts including resettlement and land acquisition for subprojects. The EARF describes the considerations for screening, assessment and design and implementation of measures to address the identified risks and impacts. The EARF further identifies the activities and projects that will not be supported by the programme including those classified as Category A. Similarly, the LARF provides the guidelines, rules and principles for the preparation of resettlement plans for projects that may have impacts generated by land acquisition and involuntary resettlement. The LARF was developed taking into consideration the various countries' legal and policy requirements on land acquisition and involuntary resettlement and the safeguard policy requirements of the AE.

31. The project is organized into two activity clusters: activities implemented in Tongatapu and those implemented in the outer islands, particularly the islands of O'ua, Tungua, Kotu, and Mo'unga'one of the Ha'apai group, as well as 'Eua in Tongatapu, and Vava'u. Two initial environmental examinations (IEEs) were prepared with technical assistance from the AE and as required under its own safeguard requirements for category B projects and the requirements of Tonga's Environmental Impact Assessment Act 2003. One IEE is for the island of Tongatapu, and the other IEE is for the outer islands. Both IEEs contain a description of likely environmental impacts and measures to avoid and mitigate such impacts through environmental management plans (EMPs). No significant environmental impacts are expected from implementation of the project. Further, no activities under TREP are expected to involve physical displacement or relocation of people. No distinct and vulnerable indigenous peoples will be affected. All the activities under TREP will be implemented in a culturally appropriate and participatory manner.

32. Installation of the proposed BESS for Tongatapu will be co-located with existing and proposed new sites, all of which are considered modified environments. Some land clearance will be required, particularly for the associated new solar farms at Fahefa and Matafonua, and the wind farm sites in the Niutoua area. However, the vegetation is not of high conservation or habitat significance. Bird and bat species in the wind farm area have been extensively studied, and species of high conservation status have been identified to be at risk from the activities. With the cumulative land clearance of approximately 20 hectares (ha), the project will implement measures to restore the vegetation along the boundaries of each of the developments.

33. The second IEE covers the works proposed for the outer islands of 'Eua, Vava'u, four islands in the Ha'apai group, and Niuafo'ou. All project component sites proposed are located in modified environments. The solar farm extension at Vava'u is proposed for a site within a largely unused coconut plantation. At 'Eua, the extension covers largely cleared land adjacent to the existing solar panel arrays. Some additional clearance is required on land adjacent to the current TPL lease area, but this site does not contain significant habitat or ecological values. For the mini-grids proposed in the four islands of Ha'apai and at Niuafo'ou, the sites are vacant grassy plots within the village areas. At Kotu, the site will require some clearance of trees and other vegetation. At Niuafo'ou, the solar farm, BESS and back-up generator will be located at the airport, where the site is relatively flat and with minimal vegetation.

34. The environmental impacts that will potentially occur during construction of the associated solar and wind farms include noise emissions, dust generation, erosion, health and safety impacts, and generation of waste materials. These risks will be avoided or mitigated through final design decisions and the implementation and monitoring of the EMP. Each of the construction contractors will be required to submit a site-specific EMP, which will be monitored through regular environmental audits undertaken by the Environment and Social Unit (ESU) of the Project Management Unit (PMU).

35. The associated solar and wind farms will also create a significant land use change, with some 22 ha of land converted from agricultural use. There will be changes in the visual amenity of the landscape, and loss of potentially productive agricultural land. These land use change impacts are outweighed by the higher economic return from energy production as opposed to agricultural production, and the benefit for Tonga as a nation.

36. The key environmental risks during the operational phase of the associated wind farms are noise, visual impact, and potential fatalities of birds and bats. The siting of the turbines provides enough buffer distance from residences and noise modelling predicts that noise will be within the international standard for wind farms. The siting also reduces visibility and landscape impacts with the turbines visible only at a distance from some coastal villages. The area has no evidence of habitat for vulnerable birds or bats as it is largely degraded agricultural land. Ongoing monitoring will be important for TPL to assess any impacts and implement mitigation strategies, if required. The coastal zone vegetation will be maintained as a buffer between the coast and the turbines.

37. The proposed project sites and the surrounding areas for Tonga are non-residential areas, with agriculture as the main land use. However, a significant proportion of the areas are currently under-utilized. The area around Lapaha has important archaeological and cultural sites, including the Langi (royal burial tombs). These sites are not in close proximity to the area proposed for the wind farm developments. There are no records of archaeological findings in the project areas. There is an existing cemetery near the area identified for the proposed solar facility near Matafonua. This cemetery area is not included in the proposed lease area and will be protected by the buffer between it and the solar facility.

38. For the outer islands of 'Eua and Vava'u the solar farm extensions will create a significant land use change, with some 2.71 ha of land converted from potential residential or agricultural use to energy production sites. There will be changes in the visual amenity of the landscape, and loss of potentially productive agricultural land. These land use change impacts are outweighed by the higher economic return from energy production, and the benefit for Tonga as a nation. In the case of mini-grids, the benefit of power availability for economic and social development outweigh loss of the land areas required within the villages.

39. There are no to minimal identified risks during the operational phase of the solar farm extensions and BESS facilities. For the mini-grids, the key environmental risks are noise emissions from the diesel generator, fuel spillage, and visual impact. The siting must maximize the buffer distance between the generator and the closest residences.

40. A resettlement plan was provided to fulfil the requirements of the AE's safeguard policy on involuntary resettlement and land acquisition. The resettlement plan was based on the social due diligence undertaken, including site visits, interviews, focus group discussions, and community consultations carried out between March and April 2017. However, this plan may need to be updated before project implementation to reflect any changes in land requirements and project design. Land ownership status for each of the proposed 12 (of 13) sites was confirmed by the Ministry of Lands, Survey and Natural Resources following site identification and provision of project scope to date. The project does not involve physical displacement of people and/or destruction of physical structures. It will, however, need to access a total of approximately 24 ha of private land allotments for Tongatapu and the outer islands, ranging in size from 1,500 square metres to over one hectare per allotment.

41. As part of the environmental and social assessments, community consultations were undertaken during field visits. The list of people met and a summary of concerns raised are provided. From a community perspective, the main issue raised was the requirement for investment in renewables to return a dividend to the people in the form of reduced power pricing. Consultation with government staff raised concerns about changing land use, land clearance, project coordination, and requirements of the environmental impact assessment process in Tonga. Consultations will be an ongoing requirement of this project, with communities informed prior to the commencement of any civil works, and will continue throughout the project. During preparation of the IEEs, consultation was held to identify any concerns. Similarly, the LARF relied extensively on consultation with landowners and those potentially affected by the project. No specific environmental concerns were raised in community discussions. Local communities and community leaders expressed support for the project, with the main concern raised being the reduction of power prices in order to make a tangible impact on peoples' lives.

42. The project will be implemented by the Energy Department of MEIDECC, and TPL. A PMU will be established under the Outer Island Renewable Energy Project and will be complemented by staff from MEIDECC and TPL. Under the PMU, an environmental and social unit will be established consisting of environmental and social specialists and experts to supervise and support the implementation of the EMP and resettlement plans.

43. Grievance focal points have been established with each relevant District/Town Officer to coordinate and address all complaints and concerns arising from any project component. Contact details are provided to all persons potentially affected by the developments. The grievance focal

points will be assisted and supported by the PMU ESU, which maintain a register of complaints, keep track of their status and report to the project steering committee. They will track complaints received, actions taken and the status of resolution, reporting regularly to the Committee and through the ESU biannual reporting process. All communications with the affected person(s) will be documented, and whether management action has been taken to avoid community concerns in the future. Complaint forms will be distributed to the grievance focal points to facilitate recording of complaints. Throughout implementation of the project, the Government and AE will monitor implementation progress and impacts of the project. The EMPs will be implemented by the executing agency through project implementation, specifically through the contractor EMPs, which will provide the framework for monitoring, particularly during construction activities.

44. During the decommissioning phase of the solar farms and BESS systems, the main environmental risks are associated with the end of life cycle for batteries and solar cells. Through careful design, including the choice of materials and design of closed-loop maintenance and end of life systems, the project can ensure that there are no legacy waste materials in the future.

4.2 Gender policy

45. The proposal contains a poverty, social and gender assessment; it therefore complies with the operational guidelines of the GCF Gender Policy and Action Plan. The assessment presents an analysis of social and gender issues in Tonga and discusses among other matters the legal and regulatory framework for promoting gender equality, access to resources and participation of men and women in decision-making. The assessment also describes challenges and opportunities for women in the energy sector in Tonga and presents entry points that the project offers to ensure access to project benefits by both men and women.

46. The proposal contains a project-level gender action plan (GAP) outlining gender-related activities for each project output, which include: participation in community-level consultations; hiring both men and women in technical and non-technical roles during project implementation; responsibilities between project implementers and executors; sources of verification for achievement of targets; and potential risks and mitigation measures that have been provided in the GAP. The GAP also includes sex-disaggregated targets, and the AE is encouraged to refine those that have been set for a number of performance indicators and are provided in the GAP, after obtaining baseline information before project implementation. Resources for implementation of the GAP have been allocated from the project's budget, including contractor's budget, and the beneficiary ministry. Additionally, timelines for implementing the gender-related activities are incorporated in the GAP. Furthermore, implementation arrangements of the project include recruitment of a social development and gender specialist to ensure the participation of target groups in the gender and social inclusion activities and the collection of sex-disaggregated data when monitoring the project.

47. The logic framework in the funding proposal contains an indicator at the outcome and output levels of the number of households, and individuals (males and females) with improved access to low emission energy sources. The GAP includes prioritization of vulnerable groups such as female-headed households for renewable energy access. These groups have been identified in the proposal's poverty, social and gender assessment, and are most likely to have inadequate resources to cover electricity connection costs. The AE is encouraged to incorporate, in the proposal's logic framework, prioritization of electricity connection for at least 10 per cent of female-headed households and businesses as indicated in the GAP. One gender-disaggregated target has been included in the logic framework for gender-related training. The AE is recommended to strengthen the gender perspective of the project's monitoring and reporting, particularly where the collection of sex-disaggregated information is concerned, by including additional sex-disaggregated targets in the logic framework as much as possible.

48. It is encouraging to note that the AE will also target businesses headed by women to access electricity which the poverty, social and gender assessment has identified as a challenge faced by women as part of the sector specific analysis.

4.3 Risks

Overall proposal assessment (medium risk):

49. The funding proposal is for providing a grant of USD 29.9 million by GCF for 10.1 MW of BESS, 1.15 MW of solar energy generation, building mini-grids, and capacity-building. The total project cost is of USD 53.20 million with co-financing in the form of grants from the AE and others.

50. Presently about 89 per cent of electricity generation in the country is from diesel generators. Thus, the project helps the country to move to clean energy and save the cost of importing diesel.

51. The BESS and renewable energy assets will be owned by TPL – the sole state-owned power utility, and a revenue generation entity. These assets account for ~60 per cent of the total project cost. The mini-grid will be owned by the MEIDECC. The AE states that overall the project will have a positive impact on the cashflows of TPL due to reduction of expensive diesel power, and the costs savings of TPL will lead to the reduction of overall energy generation costs and enable TPL to lower the tariff charged to consumers.

52. As per the projected financial analysis for TPL provided by the AE, TPL is expected to make an annual profit of approximately USD 3 million and offer a dividend of approximately USD 1.3 million annually (projections in Tongan Pa'anga, converted at current exchange rate).[1] The revenue-generating nature of the activities, the long commercial life and profit estimates for TPL can support financing partly in the form of reimbursable instruments and do not justify entire grant financing. It is noted that the proposed project is part of the Tonga Energy Road Map, 2010–2020 phase III and the AE partly financed phase I through a loan. However, the AE states that Tonga is officially eligible for 100 per cent grants by ADB in 2018 and therefore ADB cannot provide and administer non-grant financing for Tonga. Accordingly, the AE has requested grant financing from GCF.

AE / EE capability to execute the current programme (medium risk):

53. ADB is the AE for the project and has been operating since 1972. The AE has provided USD 168.5 million in loans, grants and technical assistance to Tonga to date. ADB has also co-financed phase I of the Tonga Energy Road Map, 2010–2020. TPL, the sole state-owned power utility, and MEIDECC (ministry) will be executing entities of the project. Representatives of the AE will also act as members of the project steering committee. The AE is also co-financing the project with a grant of USD 9.2 million and will administer the grants from GCF and others.

Project-specific risks (medium risk):

54. The project involves acquisition of agricultural lands; some are idle and others with cash crops and productive trees that will require compensation. A total of 58 acres is required for the TPL project from 18 individual land owners, 2 nobles and his Majesty. The contribution of USD 3.0 million from TPL includes all expenses related to land acquisition costs. The AE has informed that subproject sites have already been identified. For Outputs 1 and 2, TPL already owns or leases the required lands. For Output 3, MEIDECC has already consulted the landowners. The resettlement plan has been prepared and will be implemented in accordance with the Safeguards Policy Statement of ADB.

55. Construction and operation of plants: the AE states that ADB and TPL/MEIDECC will engage experienced turnkey contractors who have proven track records. To ensure proper operation and maintenance over the life of BESS, TPL will reserve a certain amount of revenue for upcoming operation and maintenance costs. Insurance requirements for all equipment and construction works (as well as standard public and property liability) are included in all economic engineering,

procurement, and construction contracts. During the operation stage, it is the responsibility of TPL to cover insurance of all its assets from the revenue it generates.

56. The funding proposal mentions that the BESS will allow installation of about 7.8 MW of grid-connected renewable energy capacity through independent power producers (IPPs). The effective utilization of BESS appears to be dependent on the development of incremental renewable energy projects, including the proposed 7.8 MW through IPPs. The AE states that the difference in timing of the implementation of the BESS and solar PV plants is likely to be minimal. TPL is currently pursuing arrangements for IPP connection of new solar PV and wind projects and is well advanced in negotiating with potential IPP partners for up to 6 MW of solar PV on Tongatapu. The TPL network is at maximum renewable energy penetration with the existing solar plants. It is recommended that the AE bases disbursement for the BESS on the satisfactory progress of solar/wind IPP projects.

Project viability and concessionality:

57. As per the financial analysis provided by the AE, the project has a financial internal rate of return of 9.2 per cent. Thus financing the project entirely through grant is not justified. We note the financial constraints of the Government of Tonga in contracting additional debt. However, as TPL is a profit-making and dividend distributing company, the project can be supported through a concessional loan to TPL without any guarantee from the Government of Tonga.

58. The funding proposal mentions that ADB and GCF funded projects in Tonga are tax exempt. However, the Government of Tonga is co-financing the project with a contribution of USD 5.6 million to pay duties and taxes (on goods and services, and civil works). The AE states that the Government of Tonga will not contribute other than through payment of taxes and duties. As the project is proposed to be financed entirely by grant, we request the Government of Tonga to waive any local taxes applicable to the project and use its contribution to finance other components of project cost.

Compliance risk (low risk):

59. The project is considered low risk based on the preliminary assessment. A full assessment will be carried out at the FAA stage.

60. Sanctions screening should be conducted on the date of any disbursement or if there are any changes or additional parties to be considered.

GCF portfolio concentration risk (low risk):

61. In the case of approval, the impact of this proposal on the GCF portfolio concentration in terms of result area and single proposal is not material.

Recommendation:

62. It is recommended that the Board consider the above factors in its decision.

Summary Risk Assessment		**Rationale**
Overall programme	Medium	GCF grant financing is for the development of renewable energy capacity to be owned mainly by the state-owned power utility. The utility is a profit-making entity and thus financing entirely
Accredited entity/executing entity capability to implement the programme	Medium	

Project-specific execution	Medium	through a grant is not justified. However, GCF is constrained as the AE has stated that it cannot provide and administer non-grant financing for Tonga, though in earlier phases it has provided loan finance. AE experience in Tonga provides confidence that the project will be successfully executed.
GCF portfolio concentration	Low	
Compliance	Low	

4.4 Fiduciary

63. A project steering committee and a PMU will be established to implement the project, with the PMU mandated to provide project management services to all executing entities.

64. The PMU will be responsible for collecting supporting documents, preparing withdrawal applications and submitting to MFNP, who in turn will be responsible for screening withdrawal applications and submitting these to ADB. All disbursements under the project, including ADB administered co-financings, will be disbursed in accordance with the ADB Loan Disbursement Handbook and with detailed arrangements agreed upon between the Government of Tonga and ADB. Only direct payment and reimbursement procedures will be used under TREP.

65. TPL/MEIDECC, in coordination with MFNP and assisted by the PMU, will maintain separate project accounts and records by funding source for all expenditures incurred on the project. The project accounts will follow international accounting principles and practices, in line with the New Zealand Generally Accepted Accounting Practices (GAAP) accounting standard. The present financial management of TPL was assessed using the ADB financial management assessment questionnaire and interviews and was deemed adequate for implementation of the project by the AE.

66. The detailed consolidated project documentation will be audited in accordance with the International Standards on Auditing and in accordance with the Government's audit regulations by an auditor acceptable to ADB.

67. Procurement of goods, works and related services under the project will be processed through TPL and MEIDECC, with oversight and approval by ADB and will be carried out in accordance with ADB procurement guidelines.

4.5 Results monitoring and reporting

68. As a cross-cutting intervention, the proposal reports in section E.1.2, the value of the core indicator: "Expected total number of direct and indirect beneficiaries (reduced vulnerability or increased resilience), number of beneficiaries relative to total population (adaptation only)". The project asserts that the intervention will lead to 13,616 tonnes of reduced CO_2 emissions per annum which, over the project's 25-year lifespan, would add up to a total of 340,400 tonnes of reduced CO_2 emissions. TREP will reduce global emissions by an estimated 340,400 tCO_2eq for a total GCF investment of USD 29.90 million at a cost of USD 87.8 per tCO_2eq. The proposal also states that the project will directly benefit an estimated 96,000 inhabitants (49.7 per cent female and 50.3 per cent male) of Tonga.

69. Regarding the timetable for implementation, this is clearly specified with activities and deliverables.

70. Regarding the logical framework section, the revised proposal better aligns with the climate results and indicators of the GCF performance measurement framework. The AE has revised the logical framework to address the issues raised by the due diligence review.

71. Section H.2 relating to the monitoring and reporting timeline complies with the GCF-specific reporting requirements.

4.6 Legal assessment

72. The Accreditation Master Agreement was signed with the Accredited Entity on 17 August 2017 and it became effective on 6 September 2017.

73. The Accredited Entity has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project. It is recommended that, prior to submission of the Funding Proposal to the Board (a) the Accredited Entity has obtained all its internal approvals and (b) the Fund has received a certificate or legal opinion from the Accredited Entity in form and substance satisfactory to the Fund confirming that all final internal approvals by the Accredited Entity have been obtained and that the entity has the authority and capacity to implement the project.

74. The proposed project will be implemented in the Kingdom of Tonga. The GCF has signed a bilateral agreement on privileges and immunities with the Kingdom of Tonga on 25 May 2017.

75. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) The Accredited Entity obtaining all its internal approvals and provide to the Fund the certificate or legal opinion within 180 days of the Board approval;

(b) Signing of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval or the date when all internal approvals by the Accredited Entity are obtained; and

(c) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP091

Proposal name:	South Tarawa Water Supply Project
Accredited entity:	Asian Development Bank (ADB)
Country/(ies):	Kiribati
Project/programme size:	Medium

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The proposal shows clear climate rationale, as there is an existential threat to the habitability of nation's main island due to sea level rise increasing the risk of overtopping events that destroy the island's fresh water aquifer lenses, which are the atoll's primary source of fresh water.	There is a high per-beneficiary cost (USD 967 per beneficiary, of which USD 478 is to be provided by GCF).
Country ownership is high and the project is well aligned with national priorities. The proposal addresses the needs of the climate change-induced displaced people. who are estimated to account for 20% of the predicted population growth of the island.	While the project operations and maintenance costs may be affordable, willingness to pay is low. Marketing is needed to improve willingness to pay. The Government of Kiribati has committed to provide a subsidy to ensure continued operation of the plant.
Power for the desalination plant will be provided by renewable energy. The project eliminates the need to boil drinking water. Taken together, this represents a mitigation benefit of 89,434 tonnes of carbon dioxide equivalent abated.	There is potential to revise the financial model by analysing the use of photovoltaics in non-event years (i.e. when the water lens is usable)
Accredited entity has experience with similar projects in similar environments.	-

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. Kiribati is one of the most remote and least developed countries (LDCs) in the world. It faces significant challenges due to its vulnerability to climate change. South Tarawa's water supply is entirely dependent on underground freshwater lenses, the quality and quantity of which are seriously threatened by climate change-induced inundations and prolonged drought. Should such events occur simultaneously or in quick succession, they may reduce the lenses' yield to zero for periods of up to five years. Taking a precautionary approach, the lenses cannot be relied upon as the main source of water in a future with climate change.

4. This project will provide the entire population of South Tarawa, estimated to be 62,298 people in 2018 (more than half of the population of Kiribati), with a reliable, safe and climate-resilient water supply. To achieve this, the project will:

(a) Construct a new 4,000 cubic metre (m^3)/day seawater reverse osmosis desalination plant powered by a new solar photovoltaic (PV) plant;

(b) Rehabilitate and extend the water supply network infrastructure to reduce leakages and ensure that all residents can access the new clean water source;

(c) Strengthen relevant institutions, provide capacity-building and establish long-term performance-based contracts for the operation of the new infrastructure; and

(d) Deliver an intensive five-year climate change, water, sanitation and hygiene awareness-raising programme with the strong involvement of local civil society organizations.

Climate objective

ADAPTATION

5. Most of South Tarawa is just one metre above sea level, with its highest point just three metres above sea level.

6. Climate change threatens to reduce, or even potentially eliminate, the fresh water groundwater lenses that are the primary water source. Sea level rise, storm surges and wave swell pattern changes could increase the frequency of these flood events from less than 1 in 100 years (at present) to 1 in 20 years, or even more frequently. By 2050 most of the land over the freshwater lenses will be vulnerable to overtopping by the sea.

Adaptation of human health and well-being, and food and water security:

7. By providing access to a resilient, good quality water supply, this project will directly improve water security and positively impact human health and well-being.

Adaptation of infrastructure and built environment:

8. The project provides infrastructure – a desalination plant, water supply network and a solar PV plant – and these have all been designed to be fully climate change-proof.

MITIGATION

9. The project will lead to mitigation benefits through and avoid greenhouse gas (GHG) emissions by:

(a) Substituting the existing diesel generators with a solar PV plant to power the water supply pumps and treatment works;

(b) Reducing the need to pump and treat water due to reduced losses from the network; and

(c) Ensuring households no longer need to boil drinking water using kerosene or firewood.

Financing information

10. The accredited entity (AE) has requested that the project be financed through a USD 29.8 million grant from the GCF. Co-financing will be provided by the Asian Development Bank (ADB) (USD 15.0 million grant), the World Bank (USD 13.8 million grant) and the Government of Kiribati (USD 1.6 million). The AE has estimated the climate incrementality of the project to be 52 per cent

of the total project cost (slightly more than the grant request to the GCF), which represents 49 per cent of the total cost.

11. Government subsidies will be required to meet operating expenditures over the long term. The project will require an annual government water supply subsidy to the Public Utilities Board (PUB) of Kiribati of about USD 926,000 (1.2 million Australian dollars (AUD)). The government is dedicated to ensuring the long-term sustainability of this project and has formally committed to this subsidy through a Cabinet decision.

2.2 Component-by-component analysis

Component 1 – Water supply infrastructure (total cost: USD 40.39 million; GCF cost: USD 21.66 million, or 54 per cent)

12. This outcome will involve the installation of a 4,000 m^3/day desalination plant and a 2.5 megawatt (MW) PV system on South Tarawa, together with rehabilitation of the water reticulation network.

ADAPTATION

13. The desalination plant will provide a climate-resilient water supply of 50 litres/day to each resident (in accordance with World Health Organization guidelines) and can operate even in the aftermath of flood events that are likely to swamp the island's freshwater sources. An additional 5 litres per capita per day (l/c/d) is added to this minimum standard for commercial and institutional consumption. Finally, an additional 2 l/c/d is needed to account for the impacts of increasing air temperature on domestic water consumption.

14. Importantly, given a changing climate and population (in number and behaviour) and the level of uncertainty that comes with these, the desalination plant has a modular design to enable the expansion of the plant up by up to 6,000 m^3/day total capacity in future without needing to upgrade the supporting infrastructure. These are considered robust engineering design features to better enable PUB to undertake necessary expansion works in future as the population and demand increase.

15. A climate event would lead to a sudden reduction in available water for periods of up to five years. Whereas this would not pose an existential threat to South Tarawa because the new desalination supply is in place, it would have an impact on water availability and would require a management response.

16. The existing water reticulation network is estimated to have a non-revenue water loss (NRW) loss rate of 67 per cent. Component 1 will include rehabilitation work to reduce losses to a realistic target of 25 per cent, significantly reducing pumping costs and conserving water.

17. The only other source of freshwater on the island is rainwater. This is considered less reliable, as droughts, which are linked to the El Niño/La Niña phenomena, seem to be becoming more frequent and lasting longer. The AE estimates that providing a rainwater-based drinking water system will be considerably more expensive than one based on desalination.

MITIGATION

18. While this is primarily a climate change adaptation project, mitigation benefits also accrue due to:

(a) The switch to PV from diesel to power the water supply and pumping operations;

(b) The reduction in energy use (due to lower NRW losses); and

(c) The fact that drinking water will no longer need to be boiled (which uses kerosene and firewood).

19. These benefits are expected to abate emissions amounting to 8.407 tonnes of carbon dioxide per year.

Component 2 – Water supply management (total cost: USD 13.32 million; GCF cost: USD 4.62 million, or 35 per cent)

20. The overall purpose of this component is to strengthen the management of the water supply infrastructure and ensure that the overall water supply system is adaptive and best able to respond to anticipated and unforeseen challenges in the coming decades, including those associated with climate change.

21. This will be achieved through private sector engagement in water supply services and capacity-building for the PUB, the Ministry of Infrastructure and Sustainable Energy (MISE) of Kiribati and other key government agencies with a view towards improved governance, management, sector coordination, regulation, and operations and maintenance (O&M).

22. The specific activities of Component 2 include:

(a) A five-year O&M contract for the desalination plant. The desalination plant will be procured through a design-build-operate contract including a five-year O&M component, O&M performance criteria (for example, available plant capacity in m^3/day, response time, etc.). A similar contract is being successfully implemented by the AE in Ebeye, Marshall Islands;

(b) The institutional strengthening of PUB, including network O&M, reducing network losses, ensuring continuity of supply, and improving water quality to make redundant the need for water boiling. On the management side the project will support customer service and billing, human resources, financial management, and asset management by PUB; and

(c) Additional water treatment will be needed to meet needs associated with climate change. Due to climate change (flood events and climate change-induced population growth), the desalination plant should provide an additional 814 m^3/day. The project will cover these needs for five years.

Component 3 – Climate change and Water, Sanitation and Hygiene (WASH) (total cost: USD 2.22 million; GCF cost: USD 1.29 million, or 58 per cent)

23. The present water supply situation in South Tarawa has led to a crisis in public health, with insufficient potable water available to facilitate hygiene practices, and the incidence of water-borne disease is high. Only 35 per cent of the population has access to improved sanitation facilities.

24. This component will set up three programmes that seek to:

(a) Market water supply services so that the community perceives the value of the resilient water supply established by Component 1;

(b) Engage with the community so that they adopt better WASH practices; and

(c) Facilitate a better enabling environment for the provision of services related to water and health.

25. Persuading people to stop boiling water using firewood or kerosene will have climate change mitigation benefits. The marketing of the new water supply services will help ensure the financial sustainability of the desalination plant.

26. However, the other activities of Component 3 relate more to development than climate change adaptation. The Secretariat requested that the proportion of GCF cofinancing for Component 3 be adjusted accordingly.

III. Assessment of performance against investment criteria

27. The project has a clear climate rationale. The vulnerability of the water lens to climate-induced seawater overtopping and prolonged drought events makes desalination a vital investment and the most cost-effective option to ensure the continued availability of drinking water to residents of the Tarawa atoll. The funding proposal has high cross-cutting impact potential.

28. Grant financing from GCF constitutes 49 per cent of the total financing. There are no alternative financing sources; allocations from the Asian Development Fund and the International Development Association are being fully used by the project, and users will pay according to their ability. The sustainability of the plant's operation may depend on subsidies committed by the Government of Kiribati through a Cabinet decision.

3.1 Impact potential *Scale: High*

29. From an adaptation perspective, the funding proposal adequately substantiates the climate threat faced by the Bonriki and Buota lenses, currently the only large freshwater sources in South Tarawa suitable for drinking water production, and on which most of the population depends. The two lenses face the possibility of the sea overtopping the water lens, a result of rising sea levels combined with storm surges and more prolonged droughts. These events have the potential of rendering the water lens useless for extended periods. It is expected that the water lenses may be unusable 20 per cent of the time.

30. The project's beneficiaries will be the entire population of South Tarawa: 62,298 people in 2018, increasing to an estimated 94,501 in 2041, an increase expected partly as a result of climate change-induced migration from other islands. The plant would have a maximum capacity of 4,000 m^3/day, sufficient to provide the beneficiaries with a reasonable 57 l/c/d: 50 l/c/d for domestic consumption to ensure good health and hygiene, 5 l/c/d for commercial and institutional consumption, and an additional 2 l/c/d to account for the impacts of increasing air temperature on domestic water consumption. The water lens currently yields approximately 2,000 m^3/day; in non-event years, the plant would help complement the water lens, whereas in event years it would operate at full capacity. The part of the investment attributable to adaptation purposes would be 2,414 m^3/day: 2,000 m^3/day as a substitute for the water lens when it is not available, plus 414 m^3/day for additional water demand resulting from climate change and climate change-induced migration.

31. Mitigation benefits are calculated as 89,434 tonnes of carbon dioxide equivalent (tCO_2eq) abated during the 20-year lifetime of the project, resulting from two sources. The first is the installation of a 2.5 MW captive PV solar installation that will cover Kiribati's water system (desalination plus water lens) energy needs during non-event years; during event years, it will be complemented by additional power from the grid. The second is the fact that desalinized water will eliminate the need to boil water to make it safe for drinking. Kerosene consumption is common (35 per cent of the population) and totals 1,489 m^3 annually. The project will hold campaigns to convince the population of the safety of the desalinized water in order to change their habits.

3.2 Paradigm shift potential *Scale: Medium/high*

32. The project can have a useful contribution to testing the viability and cost-effectiveness of desalination in Pacific small island developing States (SIDS), many of which are low-lying territories highly vulnerable to even modest sea level rises. The technology is not innovative; however, the use of solar power is an innovative option in the context of the Pacific SIDS water sector and well suited to their circumstances, in particular their dependence on very expensive fossil fuel imports.

33. The financial sustainability of the intervention is a relevant risk factor that needs to be well managed by the ADB and the Government of Kiribati. South Tarawa's residents are not used to

paying a high price for water and have limited confidence in the public utilities' capacities to effectively manage the infrastructure. As a result, willingness to pay is estimated to be low (AUD 10/month/household). From the information provided in the financial model, water revenues may not be able to cover operating costs; as such, the Government of Kiribati may need to step in, at least in the short term, to ensure the continued operation. The Government has indicated that it would be willing to provide subsidies to allow operations to continue; the ADB has argued that effort must be taken to ensure that such subsidies are politically sustainable even after changes in government, given the track record of government changes in Kiribati. As public confidence grows in the higher quality of water, water revenues may be able to rise, ensuring financial sustainability.

34. ADB is an active partner in the region and a key player in the eventual replication of desalination in the Pacific SIDS. There are several good opportunities and avenues for knowledge-sharing, including the annual conferences of the ADB-supported Pacific Water and Wastewater Association and possible regional desalination events.

35. The project does not identify any innovative financial mechanism that could help facilitate replication. Such replication would likely continue to be subject to substantial donor investments to cover the high level of capital expenditures.

3.3 Sustainable development potential *Scale: Medium/high*

36. The project is expected to generate substantial co-benefits associated with the availability of more and higher quality water. South Tarawa residents will benefit in particular from a reduction in water-borne diseases – a severe problem, particularly among infants – as a result of the shift from contaminated water supplies to desalinated water.

37. The project is also expected to have a positive impact on women, eliminating the time burden, stress and health impacts of procuring household water and reducing the energy needs of families and the public sector to pump and treat water (44.64 million kilowatt hours over a five-year period).

3.4 Needs of the recipient *Scale: High*

38. Kiribati is a highly climate vulnerable SIDS. With most of the country below three metres above sea level, its water resources and other assets are extremely exposed to sea level rise. Sea overtopping is a critical risk that can only be addressed with a source of safe and clean water.

39. Furthermore, Kiribati is an LDC with 66 per cent of the population in poverty or borderline poverty and a high level of unemployment. It is considered a 'grant-only' country by the ADB. The full country allocations from the Asian Development Fund and International Development Association are being used to co-finance the project, and the Government of Kiribati will contribute subsidies to the plant. The GCF allocation is vital to making the project viable.

3.5 Country ownership Scale: High

40. The funding proposal is in accordance with the national adaptation programme of action of Kiribati, which emphasizes the threat to the water lens addressed by the project. The solar PV installation is also in line with Kiribati's nationally determined contributions, by which Kiribati committed to reduce emissions (with appropriate international assistance) by 61.8 per cent by 2030, with the transition to solar PV as a key pillar. Considering that energy-intensive desalination is a critical asset to ensure the country's development and resilience, the solar PV installation is key to meeting these targets.

41. The funding proposal is also aligned with key national and sectoral policies. In its Development Plan 2016 to 2019, Kiribati committed to improving access to quality water and

sanitation infrastructure. This is considered important in a context of foreseeable revenue shortages from water sales, in which O&M costs may require subsidies from the Government. The ADB has indicated that the Government is aware, willing and able to cover such costs should water tariffs fall short of covering O&M costs. Furthermore, the public sector has a history of honouring commitments.

42. The ADB has vast experience in infrastructure projects in the region and has been working in Kiribati since 1974. The Ministry of Finance & Economic Development (MFED), the executing entity, is currently working with ADB as an executing entity on two other projects relating to sanitation infrastructure and road rehabilitation; MFED benefits from capacity-building projects by the ADB, which have also improved accounting practices and strengthened revenue management and policy.

43. Numerous consultations have taken place with a wide range of government departments. Twenty community workshops have been held across 13 villages to (i) provide objective information to the community; (ii) present the alternatives being considered, opportunities, issues and key stakeholders' roles and responsibilities; and (iii) serve as an opportunity to voice concerns and questions. This has informed design aspects such as the need to conduct awareness-raising on the expected quality of the water; its inputs with respect to willingness to pay of the beneficiaries are also reflected in the financial model.

3.6 Efficiency and effectiveness *Scale: Medium*

44. The economic analysis shows that the project is economically viable with an economic rate of return of 17 per cent. The sensitivity analysis shows these returns remain above the ADB hurdle rate even in case of a 20 per cent increase in costs or a 20 per cent decrease in costs.

45. However, the financial analysis shows an internal rate of return of −3.9 per cent, indicating the project is not financially sustainable on its own due to tariffs below the level of operating costs. Operations will therefore require an ongoing subsidy, which was committed by the Government of Kiribati through a Cabinet decision.

46. To improve financial sustainability, the Government of Kiribati and the ADB propose to restructure the water tariffs in a socially inclusive way using an increasing block tariff. The proposed tariff also provides a lifeline tariff of zero for poor households to discourage the use of more readily available but contaminated natural water sources. However, the proposed tariff structure still will not recover the full cost of the water supplied, and recent research indicates that increasing block tariffs often neither effectively targets poor customers[1] nor promotes an efficient use of scarce water resources.[2]

47. Due to the high vulnerability and financial situation of Kiribati, as well as its 'grant-only' status from the ADB, the need to use grants is adequately justified.

48. GCF will provide 49 per cent of the total financing, with the remaining 51 per cent being provided by the AE and the World Bank. The majority of the GCF investment will be concentrated on the desalination plant itself (USD 13.33 million, or 84 per cent of the activity) and the solar PV system (USD 9.11 million, or 97.5 per cent of the activity). The Secretariat disagrees with the rationale provided by the ADB to justify the share of resources requested to GCF, and considers that the co-financing ratio is lower than what should be expected. The desalination plant has a development component – providing more water to the growing population of South Tarawa – and a climate change one – the increase in dimensions to serve as a substitute for the water lens when it

[1] Nauges, C., & Whittington, D. (2017). Evaluating the Performance of Alternative Municipal Water Tariff Designs: Quantifying the Tradeoffs between Equity, Economic Efficiency, and Cost Recovery. *World Development*, Vol. 91, 125-143.

[2] Sibly, H., & Tooth, R. (2013). The consequences of using increasing block tariffs to price urban water. *Australian Journal of Agricultural and Resource Economics,* Vol. 58, 223-243.

is not available and to satisfy additional demand resulting from climate change. The climate change needs are calculated in 2,414 m^3/day, or approximately 60 per cent of the 4,000 m^3/day the plant will provide. As desalination is an absolute necessity to adapt to climate change and the most cost-effective option, it is considered adequate that the GCF financing request cover 84 per cent of the cost, which corresponds to the cost of providing the first 2,414 m^3/day (proportionally more expensive). Grant financing of the solar PV plant is justifiable, taking into account the high vulnerability of the island and the fact that it does not result in an undue subsidy to the project developer or to water users; considering willingness [and ability] to pay, subsidies may still be needed.

49. The project mainly has a cost for GCF of USD 478 per beneficiary, while also generating mitigation benefits. The cost per tCO_2eq avoided by the solar PV installation is USD 150/tCO_2eq, which is high but in line with costs for SIDS. The ADB has provided a clear justification that the proposed alternative, including its dimensioning, is the least costly option to make the water sector resilient. The ADB incorporates its experience and solutions in similar desalination projects in the Pacific (Marshall Islands).

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

50. The AE considered the project as having potential moderate environmental and social risk equivalent to category B of the GCF definition. Following its Safeguards Policy Statement, the AE has also screened the project for its potential risks and impacts related to involuntary resettlement and indigenous peoples, resulting in a category C ranking for impact to indigenous peoples and category B for involuntary resettlement. The safeguards approach for this project used the country safeguard systems of Kiribati and supplemented these with additional elements to meet the AE requirements.

51. The project's main physical infrastructure component is a desalination plant, a grid-connected PV solar power plant to compensate for the energy consumed by the desalination plant and distribution and reticulation network, and the outfall line for reject water. The desalination plant is designed to have an initial capacity of 4,000 m^3/day to supply a minimum of 57 l/c/d consumption by the year 2022. The PV power plant will be comprised of a 2.5 MW ground-mounted centralized PV system connected to the grid.

52. An environmental impact assessment (EIA) was prepared in accordance with Kiribati's requirements and procedures and with additional elements included to meet the safeguards requirements of the AE. The EIA describes the current environmental and social setting of the proposed project and identifies the potential environmental and social risks and impacts associated with the pre-construction, construction, and operational stages. The description of the baseline environmental conditions considered the marine ecology surveys, habitat surveys, and ambient characterization of environmental quality. Proposed measures to avoid and mitigate the identified potential environmental impacts are provided in the Environmental and Social Management Plan (ESMP) contained in the EIA. Measures to mitigate impacts of brine discharge to the marine environment were informed by the results of modelling exercises using the United States Environmental Protection Agency effluent plume model to understand plume movement and the decay of high salinity effluent.

53. The social due diligence of the project includes a poverty and social assessment, stakeholder analysis, participation plan and communication with a cost estimate, as well as a poverty reduction and social strategy. Social due diligence methods include not only a desk review, but also key informant interviews, site visits and consultations. A Resettlement Framework was developed to address potential resettlement impacts and provide the principles, procedures, and guidelines aligned with the applicable laws of Kiribati and the safeguards and requirements of the AE that will govern any land acquisition, involuntary resettlement and livelihood restoration that may result

from the project. A Resettlement Plan has been prepared to address impacts on land and/or assets specific to the desalination plant and the water storage and booster pump facilities. The Resettlement Plan follows the procedures set forth in the Resettlement Framework.

54. The AE has classified the project as category C for indigenous peoples, recognizing that the country has a single indigenous ethnic group and the beneficiaries are not considered distinct and vulnerable and the project does not necessitate application of the Indigenous Peoples Policy of the AE. No additional assessment and management plans related to indigenous peoples were prepared for the project.

55. Requirements for stakeholder engagement and project-level grievance redress mechanisms are integrated into the EIA, Resettlement Framework and Resettlement Plan. Summaries of stakeholder consultations are provided as an annex to the EIA, providing information on the stakeholder events, the issues raised and the responses to the issues.

56. The environmental and social due diligence identified the key environmental and social concerns of the project as gathered in the assessment studies conducted and also expressed by the communities during consultations with the communities. The key risks and impacts are associated with the installation and operation of the desalination plant, upgrade of the existing water supply infrastructure, and the installation of the solar PV system. A poverty and social assessment was also undertaken to characterize the existing socioeconomic baseline and identify potential social impacts of the project. Recommendations were gathered in the course of the assessment, which included ensuring greater public awareness and support.

57. Key environmental and social risks and impacts of the project associated with construction activities include the clearing of vegetation, erosion and sedimentation, impairment of water quality, occupational health and safety risks, possibility of being a community nuisance, issues relating to waste management including hazardous materials disposal, sourcing of aggregates and facilities for construction materials storage, and the conditions and rights of workers. Impacts are also anticipated in relation to the influx of laborers and the potential discovery of unexploded ordnance during earth-moving activities. The project's ESMP identifies the measures that will be undertaken during construction to avoid and mitigate the potential adverse impacts. The contractor will be required to develop a Construction Environmental and Social Management Plan (CESMP) that will contain the details of the site-specific mitigation measures based on the ESMP.

58. Due diligence on the acquisition of land and involuntary resettlement consider the impacts as minimal. No relocation of housing or restoration of income due to access restriction is anticipated for the project. As part of the due diligence, an evaluation of potential locations was undertaken, noting the environmental and social features of the potential sites. The desalination plant will be located on a property on a long-term lease by the government. The water supply infrastructure including reservoirs and pump stations will be mainly on government lands. Where government lands are not available, the facilities will be located on privately-owned properties acquired following the Resettlement Framework.

59. Impacts from the operation of the facility include waste generation, impacts of highly saline wastewater on the marine water quality and marine ecology, impacts of abstraction on the groundwater lens, chemical use and management, and the possibility of being a nuisance to host communities. The desalination plant will produce as a waste product highly saline water combined with backwash and rinse that is then mixed with domestic wastewater before the combined effluent is discharged to the sea. The effluent from the desalination plant may have deleterious impacts on the marine ecology, particularly on the benthic environment and water quality. The result of a modelling study was provided in the EIA, indicating the plume movement and dilution of brine from the point of discharge in the Betio outfall. Given the water movement conditions at the discharge point and the incorporation of diffuser ports, the configuration of the outfall means that a dilution factor of 100 is attained at just six metres from the point of discharge, reaching ambient salinity nearer to the discharge. The proposed outfall discharge, at a 30-meter depth and fitted with diffuser ports, will enable rapid dilution and is therefore not expected to adversely alter marine

water quality. Coastal zone and benthic surveys undertaken under various projects indicate that no mangroves and seagrass beds are found near the proposed outfall for the brine disposal. A marine survey completed for the Betio outfall in 2017 indicated that the reef flat in the vicinity of the outfall is primarily composed of rubble, rocks, debris and silt. The coral cover on the outer reef crest is low at less than 5 per cent and contains predominantly turf algae. The feed water for the desalination plant will be sourced from a 35-meter deep borehole with minimum impact on the overlying fresh groundwater lens used by the local community. The boring of wells will follow good engineering design that incorporates well casing, periodic monitoring and a sediment control plan to prevent contamination of the groundwater lens.

60. The project's ESMP summarizes the measures that will be implemented to avoid and mitigate identified risks and impacts. The ESMP provides information related to the measures, implementation responsibilities, verification and frequency. The Resettlement Framework and Resettlement Plan specific to the desalination plant identify the processes to avoid and minimize resettlement as well as the eligibility criteria and entitlement of identified affected or displaced persons. Monitoring and reporting are integrated into the ESMP and the Resettlement Framework and Resettlement Plan. The focus of the monitoring during construction is to confirm the effectiveness of the CESMP, focusing on waste generation, minimizing nuisance to communities, and overall community and worker safety. Monitoring will also be conducted during the implementation of the Resettlement Plan to ensure delivery of entitlements and compensation, consultations, grievance redress, and completion. Indicative costs related to land acquisition are provided in the Resettlement Framework and Resettlement Plan.

61. The project will be implemented through MISE and the PUB. MISE and PUB will ensure that monitoring, particularly in relation to the ESMP, is undertaken in accordance with the schedule and identified measures. The Portfolio Management Unit will designate a responsible person to implement the safeguard measures after construction and during implementation. Capacity development will need to be incorporated into the project to ensure that there is sustained competency within the implementing organizations to carry out the ESMP and provide support and oversight to contractors and other stakeholders.

62. In the course of developing the project and in undertaking due diligence, there were several consultation events held to gather comments and feedback from stakeholders. Numerous consultations were held with several government agencies, including civil society organizations, development partners and land owners. Twenty community consultation events were also held in 2017 and were attended by about 426 participants, with women comprising more than half of the participants. The consultations were to provide information on the project and provide an opportunity for the community to raise any concerns and views that they may have about the project. The Portfolio Management Unit will develop and periodically update the consultation and communication plan that will guide the external communication of the project. The disclosure of the project will follow the AE and government requirements and will include disclosure of the safeguard documents by the AE at the local level. The project will establish a project-level grievance redress mechanism complementing the institutional mechanism of the AE. During construction, the contractor will be required to develop a system to receive complaints in each worksite. The name of the person designated to receive complaints will be disseminated to the communities and included in the project notice boards. During implementation, PUB, which is responsible for infrastructure service delivery, will be required to establish a system to receive and resolve complaints.

4.2 Gender policy

63. The proposal contains a gender assessment and a gender action plan, and therefore complies with the operational guidelines of the GCF Gender Policy and Action Plan. It describes the context of gender issues in Kiribati with regard to laws and policies advancing women's rights, gender equality and women's participation in decision-making. It illustrates the existing gaps in economic development between men and women and other groups; literacy, role of men and

women in household water supply and health. These all provide the context which is relevant to addressing the specific concerns of women and men during the implementation of the project. Consultations have had a good level of participation of women (58 per cent) and men. The proposal provides disaggregated targets and indicators with baselines and budgets. It also indicates that there will be an international social inclusion and gender specialist assisting with the implementation of the project activities based on the action plan and on findings of studies that will be undertaken. For example, the specialist will assist with the willingness-to-pay assessment and the development of a water use strategy, which will be done at the household level. It has also identified specific activities to address inequalities, in this case targeting men as targets who have a critical role in fetching water to be engaged.

Clarification and suggestion for inclusion

(a) The Secretariat notes that the target set by MISE for women's participation in the community work is relatively low, at only 10 per cent

(b) With regard to the international social and gender specialist, it would be important in terms of sustainability to have cross-institutional learning between the Ministry of Women, Youth and Social Affairs and other Ministries.

4.3 Risks

Overall proposal assessment (medium risk):

64. The funding proposal is for GCF to provide a grant of USD 28.5 million for (i) the development of a seawater desalination plant powered by a solar PV plant; (ii) the establishment of a water supply network; and (iii) institutional strengthening and awareness-raising. The total project cost is USD 57.6 million with co-financing through grants from the AE and the World Bank.

65. The project aims to provide the entire population of South Tarawa (more than half of Kiribati's population) with a reliable and safe water supply. PUB, a state-owned enterprise, presently supplies water in South Tarawa. It is estimated that the water network reaches 69 per cent of the population, and water supplied (less than 20 litres per person per day) is insufficient to meet even a basic level of demand. The proposed plant's capacity is to supply 57 liters of water per person per day. Diesel currently provides 79 per cent of the electricity for this; it will be replaced by a PV supply.

66. Based on the working hypothesis tariff presented by the AE, the project is not expected to cover its O&M costs. To ensure the continued operations of the project and provision of climate adaptation services, the Government of Kiribati has committed to subsidising the operation and maintenance of the works.

AE / EE capability to execute the current programme (medium risk):

67. The ADB is the AE for the project and has been working with the Government of Kiribati since 1974. Since then, the ADB has approved 14 loans and grants totaling USD 66.5 million, as well as 41 technical assistance projects worth USD 19.6 million. The ADB is currently working with the Government of Kiribati, with MFED serving as executing entity, on other projects. No major financial management issues have been reported, and fund flow and disbursement procedures/arrangements have been assessed as adequate by the AE. The ADB assessed the financial management and procurement capacity of MFED as adequate through project preparatory technical assistance.

Project specific risks (medium risk):

68. Construction and operation of the plant: The project involves construction and operations of the desalination plant, solar power plant and water supply network. The desalination plant is expected to be procured through a design-build-operate contract, and will be designed to international standards. The project will use consulting firms to provide procurement support to MFED and PUB, including the preparation of bidding documents, bid evaluation and contract award. A defects liability period of around one year will commence from the substantial completion of the plant and will run concurrently with the O&M contract. The experience of the ADB in the Pacific region and initial market sounding suggests that there are firms interested in bidding.

69. The AE has highlighted the risk of geophysical hazards such as earthquakes and tsunamis. The AE has not provided information in the funding proposal about insurance coverage that will be obtained for the project. The AE has confirmed that the grant agreement will include that the executing entity will take out and maintain suitable insurance coverage, or make other arrangements satisfactory to the ADB for insurance consistent with sound practice. It is recommended that the AE ensure that adequate insurance coverage is available for the project to protect it from any damages during the construction and operation of the project.

70. With regard to the ability to charge customers, most domestic consumers presently do not pay for pipe-delivered water. In 2013, the Cabinet required PUB to cease charging for domestic water as consumers considered the service inadequate. However, the domestic consumers are charged at USD 5/m^3 plus delivery charges for the water delivered by PUB tankers. To ensure the adequate O&M cost recovery of the project, the Government of Kiribati will need to start charging the customers. The AE has indicated that the Government has committed to tariff implementation.

71. With regard to willingness to pay, the AE has presented a working hypothesis tariff informally derived from community consultations. It will be necessary to implement a new water tariff structure once a sustainably continuous water supply system commences operations. The tariff proposed for implementation will determine the cost recovery that can be achieved and corresponding level of government subsidies needed. Reliable data on household water consumption, willingness to pay, and income is required to determine the most appropriate tariff for South Tarawa. This information is expected to emerge from a pilot programme. Following a review of results from the pilot areas, the Government of Kiribati, the ADB and the World Bank will discuss whether a willingness-to-pay study is required to complement earlier assessments and help shape the proposed tariff. In case the actual tariff varies significantly from the working hypothesis tariff, the required support from the Government of Kiribati for operations can vary. In case the Government is able to levy a tariff higher than the working hypothesis tariff, the increased revenue may reduce GCF grant contribution.

72. With regard to continued governmental financial support, the working hypothesis tariff does not recover the full cost of the water supplied. The tariff has a high variation ranging from zero for poor domestic consumers to USD 65 per month for higher-income consumers. With respect to water supply operations, PUB is expected to incur an annual average operating loss (excluding depreciation) of about USD 623,000 a year during the life of the project (2022–2040). Hence, the steady operations of the plant and consequential climate impact depend on the ability and willingness of the Government of Kiribati to support PUB in case of the under-recovery of costs during project operations.

Project viability and concessionality:

73. As per the details provided by the AE, the project has a negative financial internal rate of return (IRR) of −9.6 per cent due to constraints in setting up water supply tariffs that take into consideration the poor population. The economic IRR is estimated at 22 per cent, with a sensitivity scenario lowering the economic IRR to 14 per cent. This signifies the potential of economic benefits of the project.

Compliance risk (low risk):

74. The preliminary assessment is for **low** risk, with a full assessment to be undertaken at the FAA stage.

75. Sanctions screening should be conducted on the date of any disbursement or if there are any changes or additional parties to be considered.

GCF portfolio concentration risk (low risk):

76. In case of approval, the impact of this proposal on the GCF portfolio concentration in terms of results area and single proposal is negligible.

Recommendation:

77. It is recommended that the Board consider the above factors in its decision.

Summary Risk Assessment		**Rationale**
Overall Programme	Medium	Based on the working hypothesis tariff presented by the AE, the project is not expected to cover its operations and maintenance costs and will need continued support from Govt. for steady operations. AE's experience in Kiribati provide comfort for successful execution of the project.
AE / executing entity capability to implement this programme	Medium	
Project specific execution	Medium	
GCF's portfolio concentration	Low	
Compliance	Low	

4.4 Fiduciary

78. ADB's role as an AE is to assist all government agencies involved in preparing and implementing the project. MFED is the Executing Entity for the STWSP. ADB's financial management and procurement policies and guidelines will be applied during implementation of the project.

79. The AE has done the assessment of the financial management capacity of the executing and implementing agencies has been undertaken during preparation for STWSP. AE has identified the mitigation measures in the funding proposal and will put them in place.

80. The STWSP grant proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook. KFSU will maintain separate books and records by funding source for all expenditures incurred on the project following the Government's financial regulations. KFSU will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices.

81. The Kiribati National Audit Office will audit the project account annually in accordance with International Standards on Auditing and with the Government's audit regulations. The annual audit report for the project accounts will include an audit management letter and audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether grant proceeds were used only for the purposes of the project or not; and (iii) the level of compliance for each financial covenant contained in the grant agreements for the project in accordance with ADB's Loan Disbursement Handbook and the project documents.

82. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

4.5 Results monitoring and reporting

83. As a cross-cutting intervention, the proposal reports in section E.1.2 the value of the core indicator "Expected total number of direct and indirect beneficiaries" (through reduced vulnerability or increased resilience), number of beneficiaries relative to total population to be 62,298 direct beneficiaries in 2018 (estimated 32,034 women and 30,264 men), increasing to an estimated 94,501 in 2041 (estimated 48,668 women and 45,833 men if gender ratio is same). This is the entire population of South Tarawa. This represents 53.7 per cent of the Kiribati population in 2018, and is expected to increase to 59.8 per cent in 2041.

84. The project asserts that the intervention will lead to 4,471 tonnes of reduced CO2 emissions per annum, which, over the project's six-year lifespan, would add up to a total of 89,434 tonnes of reduced CO2 emissions. The proposal also reports against the core indicator "cost of tCO2eq", which is estimated to be USD 20/tCOeq (below the GCF minimum benchmark of USD 230 per tCO2eq). "Volume of finance leveraged" is reported as amounting to USD 27.6 million in public sector investment of the overall USD 65.21 million in total project costs. The total finance leveraged is further broken down by funding source.

85. Regarding the theory of change diagram provided in section C.3 of the project description, even though it shows a clear causal linkage/pathway between the problem statement and strategic result area, there is a need to revise the diagram in terms of presentation. It does not follow the standard format of a theory of change, which should be inclusive of the assumptions and risks as well as the overall goal for project intervention. If possible, the theory of change diagram should be revised.

86. With regard to section C.8 relating to the timetable of implementation, this will need to be updated as the current presentation does not align with the standard GCF format. The plan will need to be populated with detailed components, outputs and key activities and brought in line with the information provided in section C.3. Also, the timeline should be updated (some dates have already passed).

87. Regarding section H.1, though the logic framework aligns with the climate results and indicators of the performance measurement framework of GCF, there is a need to revise the section in terms of presentation. The activities section will need to be amended to include more information on the descriptions of the inputs rather than simply referencing certain sections of the funding proposal. Some targets (midterm and final) are not provided for some indicators, and some will need to amended to align with the milestones included in section C.8.

88. The arrangements for monitoring and evaluation are appropriate and detailed. However, it would also be useful if the AE would provide a description of the type of methodology it would use to conduct the midterm and final evaluation. Accordingly, these evaluations should be undertaken through a counterfactual analysis (i.e. a 'with or without' scenario) that facilitates comparison between what happened and what would have happened in the absence of project interventions.

4.6 Legal assessment

89. The Accreditation Master Agreement was signed with the Accredited Entity on 17 August 2017 and it became effective on 6 September 2017.

90. The Accredited Entity has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

According to Section A.3 of the funding proposal, the Accredited Entity expects to obtain such internal approvals on 31 October 2018.

91. The proposed project will be implemented in Kiribati. The GCF has signed a bilateral agreement on privileges and immunities with Kiribati.

92. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Delivery by the Accredited Entity to the Fund of a certificate or legal opinion within 180 days of the Board approval confirming that it has obtained all its internal approvals;

(b) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval or the date when all internal approvals by the Accredited Entity are obtained; and

(c) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP92

Proposal name:	Programme for integrated development and adaptation to climate change in the Niger Basin (PIDACC/NB)
Accredited entity:	African Development Bank (AfDB)
Country/(ies):	Nine countries: Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Niger and Nigeria
Project/programme size:	Medium

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The project has a very strong climate rationale with a well-established political process and buy-in at the highest level (Niger Basin Authority consists of Heads of State of member States). It is part of the implementation of a well-designed, long-term strategic plan for the Niger River Basin and hence has high potential to catalyse further finance beyond GCF investment (high sustainability potential). More importantly, it has the potential to demonstrate the ability of GCF to support transboundary adaptation and adaptation at scale (with about 114 million beneficiaries)	This is a complex transboundary project in a vulnerable region with fragile communities. It will require considerable project management and coordination, which has been well articulated in the funding proposal. The high-level political buy-in, basin and national strategic plans and established partnerships with relevant regional/international institutions (including co-financiers) with local knowledge should help to minimize implementation risks
The project has a good financial structure with substantial co-financing from major donors and, more importantly, the countries. The countries involved are mostly highly indebted poor countries that have demonstrated commitment by accessing loans for an adaptation project. Communities have also demonstrated their commitment by contributing in kind to reduce the cost of some interventions	
A comprehensive and integrated approach to managing climate risks has been adopted through the use of a basin-wide integrated water resources management and decision	

support system. This will allow optimization of allocation of the scarce water resources.	
Mainstreaming of climate information and early warning into the integrated resource management of the basin across a range of decision timelines is well articulated. The core elements include: ▪ Better observation of climate extremes and forecasting of hydroclimatic impacts; ▪ Better packaging of climate information and early warning for last mile demographic/gender-disaggregated targets; and ▪ Better impact evaluation of interventions.	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. The Programme of integrated development and adaptation to climate change in the Niger basin (PIDACC) is a transboundary Niger River Basin initiative consisting of nine West and Central African countries (Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Niger and Nigeria), of which six are among the world's most highly indebted poor countries. The total population of the riparian countries is about 275 million, of which 110 million live in the basin. The climate-sensitive livelihoods (agriculture, livestock, forestry, fishing, river transport, tourism, handicrafts, etc.) of about 80 per cent of the basin's population are at risk from climate variability and change as the onset and cessation of the rainy season is becoming increasingly uncertain.

4. The proposal presents a strong climate rationale. The Niger Basin of the Sahel constitutes one of Africa's most vulnerable regions to climate variability and change, and it experienced a series of devastating droughts and famine in the 1970s and 1980s leading to a significant reduction in water availability and groundwater/aquifer recharge (e.g. Lake Faguibine). Over the past six decades the total annual rainfall has reduced by 20–40 per cent and has been further exacerbated by losses due to evapotranspiration, which is estimated at 44 per cent. This year-on-year amplification of recurrent droughts has resulted in fragile ecosystems and reduced social resilience that disproportionately affects women, children and disabled people in the basin. The region has attracted significant scientific interest as the global scientific community struggles to explain processes that have led to the drastic reduction in rainfall over the past century. There has also been a lack of consensus regarding model predictions of rainfall and the broader hydrological cycle.

5. The proposal has articulated well how significantly reducing the underlying drivers of the negative environmental and socioeconomic change characterized by natural resources degradation and extreme poverty will enable countries/communities to minimize risks to livelihoods and lives in the basin. The proposal seeks to address these drivers by implementing a series of integrated and comprehensive interventions that collectively 1) reduce the silting process of the Niger River; 2) improve natural resources management; and 3) improve the population's adaptation capacity to climate change. Although the proposal has an adaptation focus, it also has some mitigation activities, with the cross-cutting elements covering the following GCF focus areas: 1) health and well-being, and food and water security (e.g. climate-resilient crops, efficient irrigation systems, etc.); 2) infrastructure and built environment (e.g. sea walls, resilient road networks, etc.); 3) ecosystem and ecosystem services (e.g. ecosystem conservation and management, ecotourism, etc.); and 4) forestry and land use (e.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc).

6. The proposal also has a high political impact. The Niger River Basin Authority is among the few transboundary basin authorities globally where the Heads of State constitute the basin governing body. The high-level political processes and buy-in demonstrate a high country ownership and expression of needs that has been articulated in the shared vision of the basin. The proposal's design has been informed by the Niger Basin Water Charter, nationally determined contribution (NDC), national adaptation plans, national climate change and development strategies as well as lessons learned and best practices from projects in the basin and similar environments. In addition, it builds on the Niger Basin Climate Resilience Investment Plan (CRIP), which aims to enhance the climate resilience of member States through the following: (i) innovative financing of the regional and national water resource investments in robust climate information and early warning services, and (ii) enhancement of institutional effectiveness through the development of institutional capacities, sustainable infrastructure for integrated water resources management and targeting fragile community livelihoods for inclusive growth. Aside from the plan, it also builds on the successful implementation of the multinational Silt Control in the Niger River Basin programme.

7. The proposal has an attractive financing structure with a combination of loans and grants as well as contributions from the member States. The total financing is USD 209.90 million with the following breakdown: 1) GCF: USD 57.77 million (grant) and USD 10 million (loan); and 2) co-financing: African Development Bank (AfDB) (USD 35.92 million (loan) and USD 42.17(grant)); Climate Investment Funds/Forest Investment Program (USD 9.0 million (grant)); European Union (USD 18.08 million (grant)); Global Environment Facility (USD 12.98 million (grant)); countries (USD 16.19 million); and beneficiaries (USD 7.79 million). The highly indebted poor countries accessing loans for adaptation action represents a significant commitment. Furthermore, grants from the European Union, Global Environment Facility and the Climate Investment Funds/Forest Investment Program also demonstrate the importance of the project to the international donor community. The project also articulates a detailed budget analysis showing what, how, where and when the investments are used.

8. On average the proposal ranks low to medium in terms of overall project risks. The implementation arrangements and how impacts will be evaluated and reported are also well articulated. All the relevant documents for the first and second level due diligence have been obtained and verified.

9. The proposal scores well against the GCF investment criteria and is well-aligned with GCF policies. It therefore provides an opportunity to demonstrate GCF strategic interventions to support transboundary adaptation (adaptation at scale) through the strengthening of regional, country and community resilience to adverse impacts of climate change in one of the most vulnerable regions of the globe. The project has a strong climate rationale underpinned by

robust scientific evidence and analysis of drivers of social, economic and environmental changes in the basin. The scale of vulnerable lives and livelihoods, alignment with the needs of the population, high-level political buy-in and the financial proposal makes the project a good candidate for consideration for GCF funds.

2.2 Component-by-component analysis

10. The proposal has a theory of change that shows the integration of the components and their linkages to the envisaged impacts. The interventions are spread across nine countries and over an area of 2,240,000 km^2, of which 1,500,000 km^2 is hydrologically active. A summary of the analysis of the components are provided below.

Component 1: Development of ecosystems and natural resources resilience

11. This component comprises a series of interventions focusing on (i) resource and ecosystems protection and (ii) strengthening shared water resources management with the goal of enhancing the resilience of agroecosystems by strengthening ecosystem functions and services through agroecological and landscape modification. The proposal has demonstrated this to be an important intervention for securing the natural capital of the basin to enable member States and communities to derive their sustainable livelihoods and well-being.

Component 2: Development of population resilience

12. This focuses on the development of socioeconomic infrastructure and the protection of the basin's resources and ecosystems at the country level through the rehabilitation and/or construction of the hydro-agricultural, livestock, fishing and river navigation infrastructure. It comprises (i) the development of multipurpose infrastructure and (ii) accompanying measures and social protection. It is envisaged that this will provide significant benefits in terms of water supply, regulation of flow, hydropower, irrigation, transport, fisheries and environmental protection.

Component 3: Programme coordination and management

13. This component will establish/strengthen the systems and processes at the regional level in the effective implementation and coordination of PIDACC by the Niger Basin Authority (NBA) on behalf of the nine riparian countries. It will also set up national coordination units under programme, technical and financial management, supervision of activities, monitoring and evaluation as well as annual audits. Well-articulated implementation arrangements and flow of funds among donors, the accredited entity (AE), implementing and executing entities (EEs) is also provided. The complexity of the proposal will require that the proposed impact evaluation approaches be validated during the inception phase.

14. A detailed costed activity and budget breakdown has been provided for the interventions. These sets of interventions will not solve all the problems of the basin but will provide best practices and lessons learned for other ongoing projects/programmes and inform the way future projects are designed. The proposal has sufficiently demonstrated how the complex social, economic and environmental transboundary adaption/mitigation interventions will together lead to the expected impacts.

III. Assessment of performance against investment criteria

3.1 Impact potential *Scale: Medium/High*

15. The proposal has articulated a strong climate rationale for the interventions presented for GCF funding. The basin has seen one of the world's most significant climate variability and change with a decrease in mean annual rainfall of 20–40 per cent between 1931–1960 and 1968–1990. Temperature increases across the basin/Sahel have also been significant with a rise of nearly 1 ^{0}C since 1970, a rate nearly twice the global average. The largest trend (0.023 ^{0}C/year) has occurred within the Inner Delta Middle Niger sub-basin, with an average rise of 0.85 ^{0}C between 1970 and 2006 and 1.91 ^{0}C based on the trend since 1901. This situation contributed significantly to the devastating impacts of the Sahelian famine of the 1970s and further exacerbated by recent drought episodes of 2016/2017 that have compromised the already fragile socioeconomic and ecological systems.

16. The proposal also articulates how drivers of climate risks in the basin will be managed through a series of interventions that target the 14 million (4 million direct and 10 million indirect, of which 51 per cent are women) highly vulnerable people of the 112 million population that live within the basin by securing the natural capital of the basin from which communities derive their livelihoods. This includes the development of 350 multipurpose water infrastructures and construction of 90 km of flood dams, which could create opportunities for community businesses to flourish and lead to job creation as the opportunity to plant year-round and manage livestock is made possible. The opportunity to reduce the migration of herdsmen and reduce associated conflicts, loss and damage is also envisaged.

17. The project proposes to integrate gender considerations into its interventions by taking advantage of the demographic dividends to maximize results. This includes women's empowerment through the following targeted interventions: (i) providing access to land for 9,000 women; (ii) the establishment of 45 multifunctional platforms for women's groups; (iii) support for the establishment of 30 small and medium-sized enterprises for women; (iv) support for the functioning of 100 women's groups working in natural resources management; (v) the financing of 60 integrated subprojects supported by women; and (vi) sensitizing 500,000 women on climate change adaptation techniques and (vii) agrometeorological support for 10,000 women in their agricultural activities. These gender-sensitive responses have the potential to lift rural women out of poverty and create a paradigm shift on how climate responses are designed and implemented in the basin.

18. The proposal represents a case of a high-impact potential, and without the GCF investments much of the aspirations of the communities for sustainable livelihoods, security, inclusive growth and well-being will not be realized. The long-term impact could include the potential to scale up results to benefit the total population of 112 million people in the basin as part of the 20-year CRIP.

3.2 Paradigm shift potential *Scale: High*

19. The proposal demonstrates a number of innovative integrated and comprehensive approaches to transboundary river basin management through the development of decision support and early warning systems for managing the risks posed by negative climate-induced social, economic and environmental changes. It proposes to optimize the use of the basin resources by optimizing the allocation of resources among the conjunctive uses to ensure resource sustainability under climate variability and change. It also seeks to transform the way climate information and early warning services are delivered in the region by promoting co-design with the user community as well as information packaging and last mile delivery through a gender-sensitive context. This will be the first time that gender-sensitive climate information has been made widely available in the basin.

20. It also proposes to build on the well-established, high-level political process and commitments demonstrated by the endorsement of the Heads of State of the member States by better informing decision-makers with actionable impact-based information for climate action. The proposal is part of a broader 20-year climate-resilient development agenda where successful interventions would be scaled up basin-wide.

21. Beyond the provision of global public goods and services (e.g. climate information and early warning services), the project will also establish systems and processes for a financing facility for payment of ecosystems services. This could build on some of the proposal's innovative approaches to landscape and forest management, which could significantly increase vegetation cover in the basin and contribute to the countries' NDC greenhouse gas reduction strategies. The integrated water resources management approach that is being proposed could help to scale up climate-resilient agriculture, biodiversity, forestry and ecosystems management through better practices and lessons as part of operationalizing the payment of an ecosystem services facility.

22. The basin has become a hotspot for climate-induced regional conflicts as Fulani herdsmen travel thousands of kilometres in search of water and pasture for their herds and in the process compete for scarce water resources with communities, often leading to armed conflict and loss of lives, properties and livelihoods/farmlands. The proposed solutions (e.g. hydro-infrastructure) will help to minimize/localize the migration of herdsmen and reduce associated conflicts, loss and damage. The people-centred, community-based early warning system to be established for last mile delivery could improve disaster preparedness using traditional knowledge systems for information dissemination, particularly for the Fulani herdsmen. This people-centred approach could be successfully scaled up basin-wide and sustained though future programmes.

23. Based on the assessment, the proposal shows a high paradigm shift within the context of transboundary river basin management.

3.3 Sustainable development potential *Scale: High*

24. The integrated ecosystems approach to river basin management adopted by the project could have significant environmental benefits. As 80 per cent of the population in the basin are involved in the subsistence agriculture and livestock enterprise, the agroforestry and integrated natural resources management interventions would help to secure livelihood environments and assets, and provide significant economic, social and environmental co-benefits in the long term.

25. Landscape management interventions consisting of 26,750 hectares (ha) of agroforestry, 94,400 ha of forests, 24,000 ha of fauna and flora reserves, 1,425 km of transhumance corridors and improvements to 24,000 ha of protected natural habitats will strengthen/establish natural barriers against climate disasters. The estimated level of greenhouse gas emissions to be reduced/avoided is 7 million tonnes of carbon dioxide equivalent (tCO_2eq) over the lifetime of the project. These modest results when scaled up in the broader climate strategy could help countries to meet their NDC and long-term low-emission and climate-resilient development commitments.

26. The interventions are designed to provide capacity development within the NBA and the countries and hence create the opportunity for knowledge transfer and learning. Active community participation will ensure the long-term sustainability of the systems and processes that will be established.

27. The interventions are envisaged to strengthen policy and decision-making at all levels as they are geared towards unblocking some of the major barriers to development. This would create an enabling environment for effective implementation in which the results of the

interventions will be sustained in future programming. It would enhance social, economic and environmental resilience and lead to improved well-being.

3.4 Needs of the recipient *Scale: High*

28. Seven out of nine countries are highly indebted least developed countries (Benin, Burkina Faso, Cameroon, Chad, Guinea, Mali and Niger) with a majority of the population characterized by high mortality, high malnutrition, illiteracy, and lack of access to clean drinking water and energy.

29. The region has experienced one of the world's most devastating perennial droughts with 20–40 per cent reduction in annual rainfall and a southward shift of rainfall zones by 100 km over the past three decades. Episodes of intensified flooding have made water resources less usable owing to silting of water reservoirs and more pronounced silting of main streams and natural water reservoirs. This affects hydropower production and the socioeconomic sectors of the countries. As most of the population depend on rainfed subsistence agriculture, the unpredictability of the onset and cessation of the rainy season has led to massive loss of livelihoods, businesses and household income while poverty has increased across the countries.

30. The high population growth (about 3 per cent) puts significant pressure on the scarce natural resources and the environment. Additionally, fragile institutions, gender inequality and low life expectancy (ranging from 43 to 49 in the five poorer countries) creates a challenge for developing interventions that exploit the social capital (e.g. demographic dividends and governance). The project has articulated these needs well and demonstrated how these would be addressed through strengthening of institutions, building systems and processes that collectively will strengthen resilience to climate change in the basin.

3.5 Country ownership *Scale: High*

31. The NBA is one of the few river basin authorities whose board consist of the Heads of State of member States. A major strength of the proposal is its ability to leverage the highest level of political buy-in and commitments by the committee of Heads of State that oversee the management of the Niger Basin. Several strategic frameworks and plans have been established, which this proposal seeks to operationalize. These include the shared vision process for the basin's sustainable development. This shared vision process has led to important milestones, including the adoption in 2008 of the Sustainable Development Action Plan with its implementation plan (2008–2027), the Niger Basin Water Charter in April 2008, the 2013–2024 Strategic Plan in November 2012, the Climate Resilience Investment Plan in November 2015 and the 2016–2024 Operational Plan in January 2016.

32. The proposal articulates well the targets set in the shared strategic vision and national climate change and development plans/frameworks such as the NDCs and national adaptation plans. It thus has a high country and basin-wide/regional ownership.

3.6 Efficiency and effectiveness *Scale: Medium/High*

33. The proposal's financial structure comprises loans, grants and, critically, in-kind contributions from member States and communities. Although seven out of the nine countries are highly indebted poor countries, all of the countries will access loans from GCF and AfDB. GCF grant funding will be used for technical assistance and non-revenue generating activities. There is also a strong commitment from some GCF project co-financiers and complimentary funds.

34. The proposal has a co-financing ratio of 1:2.1 for an adaptation project as well as co-financing of USD 142.1 million. The proposal would likely score higher on efficiency and effectiveness if AfDB and GCF were contributing more proportionate grant-loan combinations under the financial structure.

35. The in-kind contributions from communities bolster the efficiency and effectiveness of the project. The communities' contributions to the construction and works provide a more cost-efficient alternative for some small-scale activities under the programme. This not only lowers costs, as some of the work can be done by local communities, but also increases buy-in for operations and maintenance after project implementation.

36. The economic analysis by AfDB estimated the benefits of improved agricultural production and avoiding climate-induced costs in productive sectors. The EIRR for the proposal is estimated at 23% over 25 years, demonstrating cost effectiveness. Sensitivity analysis shows this estimate is robust to a 20% increase in costs.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

37. The AE will use its environmental and social safeguards policies and procedures articulated in its Integrated Safeguards System (ISS) which consists of Integrated Safeguards Policy Statement; five Operational Safeguards; Environmental and Social Assessment Procedures; and the Integrated Environmental and Social Impact Assessment Guidance Notes. The AE's Operational Safeguards are materially equivalent to GCF's ESS standards with principles and standards on indigenous people, community health and safety and cultural heritage integrated into the five Operational Safeguards.

38. The Programme is assessed as having high-risk or category 1 based on the accredited entity's ISS or equivalent to Category A of the GCF Environmental and Social Policy. Although the programme would involve only small-scale activities scattered throughout the Niger Basin, the categorization takes into account the potential negative impacts of the subprojects on the communities and the ecosystems of the Niger river. The proposed interventions in the countries are varied and would involve capacity development, training, planning support and range of small-scale on-the-ground activities and infrastructure. The programme triggered the following safeguards policies of the accredited entities: (i) Operational safeguard 1, on environmental and social assessment; and (ii) Operational safeguard 4 on pollution prevention and control, hazardous materials, and resource efficiency.

39. The accredited entity has provided among other documents, a programme Feasibility Study and a Strategic Environmental and Social Assessment (SESA) incorporating a programme-level Environmental Management Framework (ESMF). The likely locations and indicative list of activities in each participating country are described in Chapter 6 of the SESA. The activities are diverse and typically small-scale, consisting of: resource and ecosystem protection activities such as erosion and silting control, water pollution control, natural regeneration, reforestation/afforestation, and support for protected area and watershed management, agroforestry; socioeconomic infrastructure such as construction and/or rehabilitation of impoundments reservoirs for domestic uses, ponds, irrigation schemes and flood protection dikes, establishment of navigation sections and landing ports, transhumance corridors and provision of other livestock, agriculture and fishery production support facilities; and, capacity building activities including establishment of resource management systems and organizing at the community, national and regional levels, training and support for area management planning. The SESA and ESMF also included a cumulative impacts assessment based on the

valued environmental components identified. Given that the safeguards processes have to be further elaborated and adapt to the context of nine participating countries, each with its own set of processes and procedures related to environmental and social risks and impacts assessments and management, an ESMF for each participating country will be developed. This will provide further specificity on the management of risks and impacts of identified subprojects of the countries. The country-level ESMF will be reviewed by the accredited entity to ensure compliance with the accredited entity's ISS requirements, the GCF's ESS standards and country safeguards requirements.

40. The salient impacts and risks of the programme include: (i) likely unintended impacts on biodiversity and critical habitats; (ii); land use conflicts between agriculture, fishery, forest and livestock's need for transhumance corridors and pasture; (iii) cumulative unintended transboundary impacts on the water, fishery and forests resources and ecosystem; (iv) potential transboundary issues on the establishment of transhumance corridors; (vi) potential disproportionate negative impacts between groups and/or exclusion of some groups of the benefits of the projects. These issues will need to be given particular attention in the screening and classification of subprojects and in the formulation of country-level ESMF.

41. While the programme is classified as a category 1 programme, subprojects assessed as Category A will be excluded and not eligible for support under the programme. Subprojects that are eligible for support are only those that are classified to have moderate and low risks, equivalent to Category B and C.

42. Resource efficiency and pollution prevention: the SESA and the programme-level ESMF identified potential risks and impacts related to release of pollutants and movement of sediments and silt. The ESMF also identified potential conflicts related to demand and water use. A suite of mitigation measures was identified in the ESMF. Impacts on water resources also figured as a valued environmental component of the cumulative impacts assessment. Aspects related to water conservation and contamination and eutrophication of rivers, tributaries due to activities supporting community-based livelihoods will need to be detailed in the country-level ESMF taking into account local contexts and requirements.

43. Community health, safety and security: the SESA identified risks of water-borne diseases due to hydro-agricultural infrastructure and possible spread of STDs during construction of "linear" infrastructure due to the possible presence of non-resident workers. The risks that non-resident labour poses on host communities may also include increased unintended social impacts. These risks and impacts should be further assessed and the measures to manage these should be developed in the country ESMFs taking into consideration the requirements of the AE, GCF, and the countries.

44. Land acquisition and involuntary resettlement: based on the SESA and feasibility study, projects under the programme will only require minimal land acquisition. The funding proposal also indicates that the subprojects will not limit access to land and forest resources from community-based livelihood and conservation activities. The AE did not find this safeguard policy applicable to this programme. To ensure that no subprojects will be funded that would involve resettlement or losses of livelihood due to restriction of access to lands and resources, the screening will need to identify likely risks and impacts and all the country-level ESMF will need to undertake further assessments and incorporate land acquisition and resettlement frameworks if there are identified risks and impacts at the subproject level.

45. Biodiversity conservation and sustainable management of living natural resources: the programme will include subprojects that support conservation and sustainable management of water, forest and soil. However, due to the diverse objectives of the envisioned subprojects, negative unintended impacts, including cumulative and transboundary impacts are likely. Some of the natural habitat and protected areas targeted by the proposed programme activities have

regional significance. Hence, following the subproject screening, the design of interventions involving natural habitats and the environmental and social due diligence should include detailed biodiversity study and review by qualified experts, consistent with safeguards requirements of the AE, GCF and the country-level ESMF.

46. Indigenous peoples: requirements for inclusion of vulnerable populations and the principles of broad community support are integrated into accredited entity's operational safeguards. Vulnerable populations that may be present in the Niger Basin thrive on certain types of livelihoods which could be impacted differently by the livelihood of the mainstream population. The subprojects, once identified, will need to provide further assessments of vulnerable populations in the subproject sites. The process for obtaining broad community support will need to be defined in the country-level ESMF.

47. Cultural heritage: the SESA as a high-level assessment document did not identify specific monuments or cultural heritage sites that might be affected. However, the riverine areas are a potential source of archaeological artefacts and paleontological specimens. As part of the country-level ESMF would need to include a simple archaeological remains procedure, based on the programme-level ESMF and relevant laws.

48. Transboundary impacts and associated facilities: the establishment of transhumance corridor would need to be considered in this context, and water use should be coordinated within the existing frameworks under the NBA charter. The programme area is covered under the NBA as a cooperation among nine countries that have territories within the basin. Further, the Feasibility Study and the SESA have implied that some subprojects may be associated with existing facilities/projects. Depending on the types of subprojects that will be supported by the programme, the country-level ESMF, and the identified subprojects will need to describe and conduct and due diligence of associated projects as part of the subproject safeguards preparation process. Further potential transboundary issues under the proposed programme will need to be further assessed at the subproject level including understanding the relevant legal and institutional arrangements of the NBA.

49. The ESMF outlined the procedures for environmental and social due diligence that will be conducted for the subprojects that will be supported by the programme. The steps include (i) identification, selection and classification of subprojects using the screening protocol of the accredited entity, the results of which will inform the classification of the project and the extent and nature of assessment and management planning that will be required; (ii) approval of selection and classification through the regional selection committee, the country institution responsible for environmental and social assessments, and the project coordination unit; (iii) public consultation and dissemination; (iv) integration of environmental and social provisions into the tender documents; and (v) implementation of environmental and social measures.

50. The implementation of the ESMF follows the implementation structure of the programme. In as much as the programme involves transboundary nature of the impacts/risks and regional scope and significance of some protected areas, the implementation of ESMF places roles of the regional institutions, Niger Basin Authority (NBA) and the PIDACC Regional Coordinating Unit (PRCU) hosted within the NBA. The PRCU, working with the accredited entity and the National Programme Coordinating Units (NPCUs), will support safeguards preparation, review, approval and compliance monitoring of standards and provide necessary capacity building, including the possibility of engaging internationally recognized experts related to key environmental and social issues. Within the NPCUs, specialist role on safeguards will ensure the implementation and monitoring of ESMF by the country's implementing entities.

51. The AE has a system of compliance monitoring system is described in its ISS which consists of submission by clients of quarterly reports, selective compliance audits, supplemented by regular supervision missions of the accredited entity and the Integrated

Safeguards Tracking System. With each country directly and separately receiving loans from the accredited entity, it is implied that the accredited entity would be monitoring safeguards compliance at the country level. The monitoring and surveillance of the activities in the countries will be carried out by systems and institutions responsible for environmental and social assessments and will also involve other stakeholders (for example civil society organizations, private sector representatives, local communities, etc.) in line with applicable laws and regulations of the countries. The monitoring and surveillance activities are indicated in the monitoring and surveillance plan in the SESA and programme-level ESMF. Quarterly to bi-annual monitoring will be carried out by the countries subject to agreement with the countries.

52. The SESA and the programme-level ESMF have been subjected to consultations in each member country. These consultations were documented in the SESA and the programme-level ESMF. The SESA and programme-level ESMF provided that the NBA and the country institutions will develop and implement stakeholder engagement plans commensurate to the nature and scale of the interventions and the level of risks and potential impacts. The country-level stakeholder engagement plans will be incorporated in the country-level ESMF and will be based on the principles and approaches of the accredited entity's ISS and guidance materials. An engagement matrix is provided in the SESA and programme-level ESMF that will further guide countries in developing their stakeholder engagement plans. The stakeholder engagement plans will also need to include explicit requirements to identify any vulnerable groups and where they may be affected, the process for obtaining and maintaining broad community support. The accredited entity provides for its own grievance redress mechanism that accommodates requests for dispute resolution in the environmental and social context and allows tracking and monitoring grievances and their resolutions. It also provides for the establishment by clients of country-level/local grievance and redress mechanism for affected people. The SESA and the programme-level ESMF provide as a requirement that each participating country will need to develop a country-level grievance redress mechanism as part of the country-level ESMF, and compliant to the accredited entity's ISS and national requirements. The ESMF indicated that projects will comply with the accredited entity's Disclosure and Access to Information Policy requirements.

53. The ESMF describes the capacity building programme to help stakeholders and countries that carry out PIDACC activities understand and implement the environmental and social safeguards requirements of the programme- and project-level ESMF. The cost of the capacity building activities is included in the overall cost of ESMF implementation as presented in the programme-level ESMF.

4.2 Gender policy

54. The proposal contains a gender assessment; therefore, it complies with the operational guidelines of the GCF Gender Policy and Action Plan. A context of gender issues in the nine beneficiary countries is described in the assessment in terms of national legal and policy frameworks, participation of women in decision-making and the labour force, access to services such as health and education, and access to factors of production such as land. The gender assessment also outlines the negative impacts of climate change on women. When implementation of the project commences a further gender analysis will be undertaken.

55. The proposal contains a project-level gender action plan with gender-related activities with some targets provided for women beneficiaries of the project. Performance indicators and timelines for implementing the activities have also been provided in the action plan. The AE has assigned its EEs the responsibility of implementing activities in the gender action plan through national coordination units that will each have a social development and gender specialist. Social development and gender specialists, including a gender specialist at the regional level,

will also be responsible for monitoring and reporting on gender issues in the subprojects. Furthermore, AfDB will supervise the implementation of the gender action plan and maintain its oversight role as the AE. The last two activities at the end of the gender action plan should have responsibilities and a time frame assigned to them. Opportunities identified in the funding proposal can also be included in the gender action plan. For example, under sub-component 2.2, the target to have 300 infrastructure management committees with at least 30 per cent representation for women aimed at ensuring participation and access to project benefits by both men and women can be included in the gender action plan. The AE will analyse the baseline situation and targets for women and men in the project interventions in the first year of implementation of the project to rationalize gender-disaggregated targets provided in the gender action plan and the logic framework and ensure that they are realistic and achievable. Using this baseline information, the AE should incorporate disaggregated targets with figures for both women and men in the gender action plan to ensure that both participate in the project and have access to its benefits, and track progress on the achievement of those targets in the implementation of the project.

56. In the funding proposal, the AE has provided the expected total number of beneficiaries disaggregated by sex to demonstrate the project's impact potential.

57. In the logic framework sex-disaggregated targets have been included at the outcome and output levels for the men and women who will be targeted as beneficiaries of the programme. This is done in an effort to strengthen gender-related results monitoring and reporting.

58. It is encouraging to note that the project will ensure access to land for women and provide training on smart agricultural techniques and access to markets. It is recommended that the AE ensure that project beneficiaries also gain access to other factors of production to build their adaptive capacity to climate change. In addition, the project will aim to supply climate information that is tailored to the specific needs of decision makers and local communities. The AE is requested to not only ensure that climate information reaches both men and women but also to capture differentiated outcomes of the project on both men and women on coping with the effects of climate change with improved access to information from climate-related early warning systems.

4.3 Risks

59. **Overall programme assessment (medium risk):**

(a) The funding proposal requests a grant of USD 57.77 million and a loan of USD 10 million from GCF for the protection of ecosystems and natural resources, adaptation support measures and community infrastructure, and coordination, monitoring-evaluation and communication in nine countries in the Niger Basin. The total project cost is USD 209.9 million and the AE (loan and grant) and other donors (grant) will contribute USD 118.15 million (56 per cent) of total financing. USD 23.97 million (12 per cent) co-financing in the form of in-kind contributions from the national counterparties and beneficiaries was endorsed during the Summit of Heads of State and Government of the NBA;

(b) The successful implementation of the project will depend on coordination among NBA, EEs and local coordination committees to handle wide geographical areas and diverse stakeholders. At the level of each country, although the EEs and implementation arrangement are known (sector ministries responsible for water resources and environment in each country), a National Programme Coordination Unit (NPCU) will be established or has yet to sign the agreements with the sector ministries for the implementation of the sub-components. The funding proposal states that all NPCUs will

be in place and operational before the first disbursement, and this will be included as a condition of the first disbursement in the loan and grant agreements; and

(c) The grant and loan agreements will be signed between AfDB and each country's ministry to finance the respective country components. The AE is financing a loan of USD 35.92 million and grant of USD 42.17 million. The funding proposal states that the GCF grant will not be blended with the AfDB loan and will be mainly used for technical assistance and non-revenue generating interventions. Based on the additional information provided by the AE, the debt financing from the AE and GCF will be mainly directed to the implementation of climate-resilient growth infrastructure activities in components 2.1 and 2.2. The GCF loan with 40 years tenor and 0 per cent interest rate will have an equal seniority with the AE loan. The borrowers of the AE loan will be the government in each country.

60. **Accredited entity/executing entity capability to execute the current programme (medium risk):**

(a) AfDB is accredited as an international entity and has an extensive track record in the preparation and implementation of transboundary river basin projects in Africa. Therefore, the ability of the AE to develop and implement the project is deemed appropriate; and

(b) While the detailed track record of the EEs (relevant sector ministries) is not provided, the funding proposal stated that the EEs have significant experience in the implementation of programmes in the Niger Basin. NBA will be coordinating regional activities and implementing a communication strategy among participating countries. The NPCU to be established in the ministry will identify specific project sites, activities and target beneficiaries, and supervise overall implementation of the activities at the national level. GCF will rely on the AE for the coordination among EEs under the project.

61. **Programme-specific execution risks (medium risk):**

(a) Security issues affecting implementation: the funding proposal states that security concerns remain high in Cameroon, Chad, Mali, Niger and Nigeria. Trade and transport may face some difficulties because of possible tension at the borders. However, the sites selected for the project are secured sites and the project envisages that each country will propose a plan of action for the safety of the intervention sites, which will be taken into account during the evaluation mission;

(b) Land conflicts: the funding proposal has identified land conflicts as a risk in project sites. As a mitigant, the AE has specified that the site for each of the subprojects will require unencumbered access for project activities and a certificate of land security to be attached to each subproject document. The project will not finance a subproject requiring land acquisition. Subprojects will be driven by the demand of the communities and will not change the status of the land. Instead, the project will provide support to local land commissions to facilitate access to a land certificate. In addition, the implementation of the awareness-raising activities using existing coordination mechanisms has been suggested as a mitigation measure;

(c) Coordination of wide geographic areas: the project covers nine countries. The successful implementation of the project requires adequate coordination of project activities in the various countries. The funding proposal mentions that the project builds on the Climate Resilience Action Plan collaboratively developed by these countries. NBA (an intergovernmental authority) and the ministers of water resources in the countries will be the EEs for the project. The AE also has experience of working in these countries. The above factors can support the coordination over the wide geographic areas; and

(d) Economic analysis: the AE has presented an economic analysis which results in the average economic internal rate of return of 18 per cent with a 30-year time frame (economic internal rate of return per country ranges from 13 to 26 per cent). The funding proposal does not provide the financial internal rate of return.

62. **Compliance risk (medium risk):**

(a) The programme involves nine national jurisdictions presenting varying levels of risk exposure. In addition, the funding proposal highlights regional insecurity and land conflicts as key risk factors. These two factors also elevate the risks of money laundering and terrorist financing. However, these risks are mitigated by the Anti-Money Laundering/Counter-Terrorist Financing (AML/CFT) obligations of the AE under the accreditation master agreement. These include the obligation to apply international best practice standards regarding AML/CFT controls throughout the project's implementation, as well as ensure the implementation of appropriate AML/CFT due diligence and controls in activities conducted by EEs and other subsidiary third parties involved in the project cycle; and

(b) In addition, under section F.4 of the funding proposal, the AE provides assurance of its integrity due diligence framework in relation to the project. The AE further assures that it will conduct robust integrity due diligence to ensure that GCF proceeds are utilized for their intended purposes.

63. **GCF portfolio concentration risk (low risk):**

(a) In the case of approval, the impact of this proposal on the GCF portfolio risk remains non-material and within the risk appetite in terms of concentration risk, results area or single proposal.

64. **Recommendation:**

(a) It is recommended that the Board consider the above factors in its decision.

Summary risk assessment	
Overall programme	Medium
Accredited entity/executing entity capability	Medium
Project-specific execution	Medium
Compliance	Medium
GCF portfolio concentration	Low

4.4 Fiduciary

65. The overall role of AfDB as the AE is to provide oversight and quality assurance through its Headquarter and Country Office units. This role includes: project preparation oversight; project implementation oversight and supervision, including financial management; and project completion and evaluation oversight. It also includes oversight roles in relation to reporting and knowledge management.

66. The NBA Executive Secretariat will, at the interregional level, delegate the implementation of interregional activities and interregional coordination of the entire PIDACC programme to a management unit of the programme, the PIDACC Regional Coordinating Unit (PRCU). PRCU will support NBA in project management; financial, procurement and administrative responsibilities; and supervision of the technical components of project implementation. The activities of PRCU will be monitored and directed by the Regional Steering Committee of NBA projects.

67. At the national level, NPCU will carry out the national activities in each country and will be responsible for coordinating, implementing and monitoring and evaluation. They will work with decentralized services and locally based organizations and work closely with PRCU.

68. PRCU and the national coordinators will oversee the project financial management aspects, including the preparation of the financial statements and quarterly interim unaudited financial reports, monitoring financial transactions and making the necessary arrangements for the annual project financial audits. An independent external auditor will be recruited based on terms of reference acceptable to AfDB for the entire duration of the project. The audits will be undertaken in line with the AfDB Guidelines for Financial Reporting and Auditing of Projects and the financial statements will be audited in accordance with international auditing standards.

69. The programme's financial and accounting management will be based on the principles and rules of the Organisation for the Harmonization of Corporate Law in Africa (OHADA) accounting system, which are compliant with AfDB policies and procedures and international accounting standards on financial reporting. Disbursements of resources will be made through three methods: reimbursement, direct payment and working capital, and will be in line with the AfDB disbursement handbook. NBA and national EEs will open accounts in national banks acceptable to AfDB.

70. Procurement of goods, works and consulting services, financed under the programme, will be in accordance with the Procurement Policy for Bank Group-financed Operations.

71. The AE has stated that they have assessed the financial management capacity of each Executing Entity in accordance with their guidelines during the programme's evaluation mission. The results of the assessments have demonstrated acceptable financial management arrangements and capacity to the AE's satisfaction, but translations of some of these assessments are pending. It is therefore recommended that a condition for a completed financial management and procurement capacity assessment for each Executing Entity be placed as a condition for FAA effectiveness until translated versions are provided.

4.5 Results monitoring and reporting

72. This is a cross-cutting project and it provides information on the core fund-level indicator for direct beneficiaries and indirect beneficiaries. The improved resilience will potentially benefit 4 million people directly and 10 million indirectly (approximately 50 per cent female). The proposal asserts that the intervention will reduce emissions annually by 1.4 million tCO_2eq and a lifetime of 7 million tCO_2eq.

73. The document is well written and captures key monitoring elements.

74. Regarding section C.8 on the timetable of implementation, a detailed timetable has been provided, which is well sequenced.

75. Under section C.3, the programme description, the project now has a theory of change diagram that shows a logic linkage/pathway of the strategic result area with clear reference to assumptions and risks.

76. Regarding the logic framework section, the revised proposal better aligns with the climate results and indicators of the performance measurement frameworks of GCF. The AE has revised the logical framework to address most of the issues raised by the due diligence review. However, the AE needs to align the activities section of the Timetable of Implementation by moving the sub activities under the inputs column to be the main activities under column 1. Also, a minor change is required to the H.1 to numerate the fund-level indicators as either mitigation or adaptation (e.g. use A1.0 and A1.1 for the indicators all through). This is to avoid confusion regarding which indicator is responding to mitigation or adaptation. In addition, targets for output 17 need to be revised to allow the monitoring and evaluation system to be in place and functional.

77. Section H.2 relating to the monitoring and reporting timeline complies with the GCF-specific reporting requirements.

4.6 Legal assessment

78. The Accreditation Master Agreement (AMA) was signed with the accredited entity on 8 November 2017, and it is not effective yet.

79. The accredited entity has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the programme. In the funding Proposal, the accredited entity indicated that the accredited entity's board of executive directors will approve the programme in October 2018.

80. The proposed programme will be implemented in the countries set out below in sub-paragraphs (a)-(i). The GCF is not provided with privileges and immunities in any of the countries. This means that, amongst other things, GCF is not protected against litigation or expropriation in these countries, which risks need to be further assessed. The Secretariat has engaged with the relevant countries as follows:

(a) With respect to Benin, the Secretariat has not yet initiated discussions on a privileges and immunities agreement with the government of Benin;

(b) With respect to Burkina Faso, the Secretariat submitted a draft privileges and immunities agreement to the government of Burkina Faso on 7 October 2016. An amended draft of the agreement was received from the government of Burkina Faso on 16 July 2018 and is currently under the Secretariat's review;

(c) With respect to Côte d'Ivoire, the Secretariat submitted a draft privileges and immunities agreement to the government of Côte d'Ivoire on 9 September 2016. The Secretariat will follow up with the government of Côte d'Ivoire on the status of the draft agreement;

(d) With respect to Guinea, the Secretariat has not yet initiated discussions on a privileges and immunities agreement with the government of Guinea;

(e) With respect to Mali, the Secretariat submitted a draft privileges and immunities agreement to the government of Mali on 7 December 2015. The government of Mali and the Secretariat exchanged drafts of the agreement on 3 May 2018. The Secretariat will follow up with the government of Mali on the status of the agreement;

(f) With respect to Niger, the Secretariat submitted a draft privileges and immunities agreement to the government of Niger on 11 December 2015. No response has yet been received from the government;

(g) With respect to Nigeria, the Secretariat submitted a draft privileges and immunities agreement to the government of Nigeria on 30 September 2015. The government of

Nigeria is currently reviewing the draft agreement. No response has been received from the government since 20 May 2016;

(h) With respect to Cameroon, the Secretariat has not yet initiated discussions on a privileges and immunities agreement with the government of Cameroon; and

(i) With respect to Chad, the Secretariat submitted a draft privileges and immunities agreement to the government of Chad on 9 December 2015. No response has yet been received from the government.

81. The Heads of the Independent Redress Mechanism (IRM) and Independent Integrity Unit (IIU) have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where the GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by the GCF are made only after the GCF has obtained satisfactory protection against litigation and expropriation in the Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger, Nigeria, Cameroon and Chad, or has been provided with appropriate privileges and immunities.

82. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Delivery by the accredited entity to the GCF of a certificate or legal opinion confirming that it has obtained all its internal approvals within 120 days of the Board approval, or the date effectiveness of the AMA, whichever is later;

(b) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval or the date on which the accredited entity has provided a certificate or legal opinion confirming that it has obtained all internal approvals, or the date of effectiveness of the AMA entered into with the accredited entity, whichever is later; and

(c) Completion of legal due diligence to the satisfaction of the Secretariat.

Secretariat's assessment of FP094

Proposal name:	Ensuring climate resilient water supplies in the Comoros Islands
Accredited entity:	United Nations Development Programme (UNDP)
Country/(ies):	Union of the Comoros
Project/programme size:	Medium

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The proposal targets vulnerable communities impacted by climate change through lengthening droughts, more severe floods, and stronger and more frequent cyclones.	The projects will construct infrastructure in remote locations on all Comoros islands. It is important, given the logistical challenges, that locally self-sufficient operation and maintenance structures are established to sustain the works.
Country ownership is high and well aligned with national priorities. Significant government and other co-financing is available.	Water resources interventions can be greatly enhanced if they are carried out in coordination with sanitation and hygiene initiatives; the links to ongoing programmes in these areas could be spelled out.
The project is cost effective and reaches 450,000 beneficiaries.	The exact aims and strategy of the water governance work, and particularly the proposed tariff structure being developed, could be defined more clearly.

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XXIX, titled "List of conditions and recommendations".

II. Summary of the Secretariat's assessment

2.1 Project background

3. This is the first GCF project set in a country that is a small island developing State (SIDS), a least developed country (LDC) and an African country.

4. The geographic features of Comoros significantly contribute to its high vulnerability to climate change impacts. The entire country, separated into three islands, has a land area of only 2,612 km^2 and no land further than 7km from the coast. Comoros has small, steep watersheds, few aquifers and limited natural water storage. As a result, the country is vulnerable to cyclones, erosion, flash floods and droughts.

5. Climate change predictions for Comoros include an increase in rainfall variability, lengthening of droughts and increasing frequency and intensity of storms, floods and resulting

erosion. Rising temperatures will reduce water availability (due to higher evapotranspiration) and cause saline intrusion from rising sea level, impacting coastal boreholes.

6. The key goal of this project is to help Comoros strengthen the resilience of its drinking and irrigation water in 15 vulnerable zones by:

(a) Strengthening the governance of water in the country, integrating climate change into the new water code, and strengthening decentralized water resources management;

(b) Developing integrated water resources management committees to protect water sources, installing hydrological equipment, and applying hydrological forecasts to better community water resources management; and

(c) Installing climate resilient water infrastructure, operating existing boreholes more sustainably, and installing new ones; expanding water storage tanks to store more water through longer dry periods and to remove more sediments eroded by extreme flood events; and installing flow meters to guide and inform the debate surrounding tariff adjustments.

Climate objective: adaptation

7. The islands of Grande Comore, Moheli and Anjouan are steep volcanic islands located in the Indian Ocean's cyclone belt. These cyclones, that cause erosion and flooding, are likely to increase in frequency and severity with climate change. Furthermore, more variable rainfall patterns will extend the duration of droughts, and higher temperatures will increase water demand, mainly through higher crop evapotranspiration. Sea level rise is also expected to impact some coastal water aquifers, and boreholes that draw water from them. The project will help Comoros' adaptation needs in human health and well-being, and food and water security.

8. As natural water storage (rivers, lakes and aquifers) are so limited in Comoros, the project seeks to strengthen water security by providing water storage tanks, and new boreholes, to maintain water security in the face of climate change. This will impact human health and well-being positively, although complementary sanitation and hygiene programmes would have had a significant multiplier effect.

9. The project addresses adaptation needs in infrastructure and built environment by providing infrastructure such as water storage tanks, water settlement tanks (to remove sediment and turbidity in floodwaters) and new boreholes that are specifically designed to be climate resilient. These meet Comoros' development needs over and above the existing infrastructure.

10. The water governance component of the project seeks to build capacity, sustain financing and create a better enabling environment to sustain this infrastructure in the longer term.

Financing information

11. The accredited entity (AE) has requested that the project be financed by a USD 41.91 million grant from GCF. Co-finance will be provided by the Government of Comoros (a USD 3.81 million grant), China Geo-Engineering Corporation (USD 1.94 million in-kind for specific works), the United Nations Development Programme (UNDP) (a USD 2.0 million grant for project management and project activities), and the Arab Fund for Economic and Social Development (a USD 0.29 million grant for infrastructure resilience upgrades). In addition, the Government of Comoros has made land available for the project with an estimated value of USD 9.38 million and will provide USD 1.39 million towards supporting operation and maintenance (O&M) needs for the 8-year period of project implementation as in-kind contribution.

12. A comprehensive system of tariffs paying for O&M is laid out in the 2015 Water Code, which has been signed by the President but not yet ratified by Parliament. Comprehensive willingness-to-pay studies have not yet been carried out, but the infrastructure has been designed to keep O&M costs within reasonable limits.

2.2 Component-by-component analysis

Component 1: Water supply sectoral climate risk reduction planning and management (total cost: USD 1,800,163; GCF contribution: USD 1,495,163, or 83 per cent)

13. The purpose of this component is to mainstream climate risk reduction into organizational planning, budgeting and programming in the water sector. This component is also intended to develop water sector stakeholders' capacity to undertake climate change-informed decision-making at all levels. These interventions will lead to the prioritisation of climate risk reduction in water management.

14. The new Water Code requires introduction of an independent regulator, a National Fund for the Development of Water and Sewage Infrastructure, (Integrated) Water Management Committees and (semi-) autonomous water utilities as well as realignment of responsibilities among the existing water sector players. The future set-up of the water sector could be made clearer in the funding proposal, with roles and responsibilities of current and new institutions stated as well as clarity on which part of the sector reforms will be supported by GCF funding.

15. Water security plans will be drafted for each of the three islands, detailing the requirements and responsibilities for climate risk reduction focusing on: (i) protection of water sources; (ii) water supply operating procedures during dry/wet periods; and (iii) water quality standards. The plans will provide clarity on how water availability will be assured under varying climatic conditions. This is particularly important for the largest island, Grand Comore, which has no surface water and is thus entirely dependent on rainwater harvesting and groundwater.

16. Drinking water management structures will be strengthened in rural and peri-urban areas by training the Water Management Committees in climate risk reduction. In addition to typical water management topics, the training will detail the current and predicted impacts of climate change on water resources, recommended protocols for climate-resilient water infrastructure O&M, and application of tariffs to enable the Water Management Committees to manage identified climate risks to water resources.

Component 2: Climate-informed water resources and watershed management including forecasting and early warning of climate risks (total cost: USD 5,662,532; GCF contribution: USD 3,462, 312, or 61 per cent)

17. This component is intended to optimize the availability of water resources in each watershed and apply ecosystem-based adaptation approaches to reduce the impacts of climate change on aquifer recharge, stream flows, surface run-off, soil erosion and water quality, thereby enhancing the climate resilience of water sources.

18. Initially, climate risk vulnerability assessments (CRVAs) of each watershed are to be conducted. The CRVAs will map the areas exposed to climate risks. The integrated water resources management committees established under component 1 will be responsible for generating watershed-specific climate risk reduction plans of action based on the CRVAs. These plans of action will detail the most appropriate adaptation measures to ensure the conservation, protection and sustainability of the islands' water sources.

19. The plans of action will detail feasible climate adaptation activities, including zoning of recharge areas for protection, reforestation of river basins, improving farming practices and other land-use practices that destabilize soils so that water sources become more resilient to climate change. These measures will help to minimize the effects of extreme weather events through improved dry season water retention, flood flow attenuation, and soil stabilization.

20. Furthermore, this component includes the establishment of a water resource monitoring network and upgrading of the existing monitoring infrastructure to enhance the collection of weather data. Based on this improved network, an early warning system will be developed to provide flood risk warnings for each island. It is proposed that the early warning system will be connected to the mobile phone network and provide flood warning messages by short messaging services, although this may be challenging given the substantial number of steep catchments and

the rapid time-to-peak of the flood wave. Also, over time, the data generated by the water resources monitoring network will enable better forecasting of weather and climate.

Component 3: Climate resilient water supply infrastructure (total cost: USD 50,056,574; GCF contribution: USD 35,100,107, or 70 per cent)

21. This component aims to deliver climate risk reduction infrastructure upgrades to the existing water supplies on each island. This will include improvements to a range of groundwater, surface water and rainwater-sourced supply schemes. The component specifically focuses on increasing the reliability of water supply during future climate change-induced extreme rainfall variability events, not on increasing water supply to serve the increasing demands of the growing population.

22. Expansion of existing coastal groundwater-fed water supply networks into the interior rural villages, where rainwater harvesting is inadequate (and cannot be expanded) and where depth to groundwater prevents direct exploitation of the underlying aquifers, is an appropriate adaptation strategy in Grand Comore. On the other two major islands, Anjouan and Moheli, climate-proof river intakes will be constructed to prevent damage by flood events.

23. All storage tanks attached to surface water and groundwater distribution systems will be equipped with appropriate water disinfection and filtration systems, to address the increased turbidity and resulting water quality degradation caused by climate change-induced storm events. The tanks will also provide greater flexibility in water supply scheme operation, enabling the intakes to be closed during storm events, as well as providing additional stored water for use during the dry season.

24. Reservoirs and water troughs will be constructed for non-potable uses such as agriculture. Impluviums, which are natural craters that capture rainwater, will be used for agriculture as per Comorian tradition. The villages are located below the impluviums, enabling gravity feed pipelines to be constructed. This will increase water availability during the dry seasons and reduce use of precious groundwater needed for potable use in the upland households of Grand Comore.

25. Where appropriate, water meters will be installed to promote water demand management and enable service providers to identify areas of water leakage and/or theft in each supply zone. This is expected to result in decreased water wastage, thus reducing groundwater and stream abstraction rates. This is intended to slow down the rate of salinization of the aquifer and prevent water shortages. Metering has the added benefit of facilitating quantification of water use, thereby informing the tariffs that should be charged to sustain operation and maintenance of the water supply infrastructure.

26. The proposal should confirm (for reticulated water systems) the Comoros policy on household connections, stating whether pipes are laid to buildings, or to plot boundaries.

27. The coupling of these infrastructure measures with institutional strengthening (component 1) and enhanced climate information and early warning systems (component 2) will ensure an overall improvement in the climate resilience of water supply in Comoros.

III. Assessment of performance against investment criteria

28. This project has considerable climate rationale. Limited watersheds and natural water storage capacity make Comoros vulnerable to climate change as it relies highly on variable rainfall. The existing national water supply regime and the original version of the new national Water Code did not take climate change into consideration and Comoros' adaptation capacity is limited. Therefore, the GCF contribution is critical to help prepare Comoros in face of climate change impacts. Overall, the alignment with GCF investment criteria is satisfactory.

3.1 Impact potential *Scale: High*

29. The project will directly benefit 450,000 people (229,500 women) by improving the climate resilience of potable water supply, watershed and irrigation water supply. The whole population will benefit from countrywide water governance reform and enhanced capacity of water resources monitoring and management during climatic extremes.

3.2 Paradigm shift potential *Scale: Medium/High*

30. The project is expected to develop, strengthen and sustain a national-level scheme that promotes the scaling up of climate risk reduction practices at both the local and national levels, as well as enabling international knowledge transfer on this adaptation approach. The latter, knowledge and learning, is embedded across the project design to increase resource and infrastructure sustainability, build capacity, promote partnerships, ensure ownership, secure political support, raise awareness, and deliver evidence-based risk reduction planning and management of Comoros' water resources and water supply schemes.

31. The project will contribute to the creation of an enabling environment by delivering political, institutional and financial sustainability for climate resilient water resources, watershed and water supply management. The inclusion of climate risk adaptation in the new Water Code will ensure the necessary legislative political and institutional commitment. The implementation of the tariff system will make possible sustainable and secure water supplies, proper decentralized water management committees, and encourage private sector interest.

32. The proposal should achieve a national paradigm shift in strengthening the climate resilience of the water supply by mainstreaming systematic climate risk reduction approaches into the governance and delivery of water resources, watersheds, water supply infrastructure and water user management, including in planning, investment, design, operation and maintenance.

3.3 Sustainable development potential *Scale: Medium/High*

33. The project is expected to generate environmental co-benefits associated with improved water resources and soil in terms of quality and quantity. It will also contribute to improved biodiversity as a result of healthier aquatic ecosystems.

34. The social benefits include improved health and safety in climatic and non-climatic disasters. It also empowers community to manage and protect individual water supply schemes.

35. The project is also expected to have a positive impact on women, removing the time burden and stress of procuring water for a household, and the sickness burden on children and adults.

3.4 Needs of the recipient *Scale: High*

36. Comoros is a highly climate-vulnerable SIDS. It has limited watersheds, aquifers and storage capacity, making it highly vulnerable to rainfall variability and intensity. Climate change predictions for Comoros include an increase in rainfall variability, lengthening of droughts and increasing frequency and intensity of storm floods and erosion.

37. Furthermore, Comoros is an LDC with at least 14.3 per cent of the population unemployed. It has limited national capacity to adapt to climate change risks given its technical, financial and human resource challenges.

3.5 Country ownership *Scale: High*

38. The funding proposal is in accordance with the national adaptation programme of action, which prioritizes agriculture and water. It is also aligned with Comoros' recently drafted

accelerated growth and sustainable development strategy (2015–2019) with the objectives of promoting its natural and cultural resources. Furthermore, it also supports the Water Act, Comoros' intended nationally determined contribution, and Sustainable Development Goals 2, 13, 11 and 14.

39. UNDP has a long history of engaging with the country and promoting sustainable development in Comoros. The Ministry of Energy, Agriculture, Fisheries, Environment, Country Planning and Urbanism (MEAPEATU), the executing entity (EE), has substantial experience in managing water and energy related projects and works in close collaboration with all government institutions at the national, local and community levels.

40. The project design process has fully involved the national designated authority. Consultations have taken place with a wide range of government stakeholders. All communities were asked to confirm their agreement to the planned project activities to be undertaken on lands within the community ownership and control. Their active involvement is expected to continue during the project delivery.

3.6 Efficiency and effectiveness *Scale: high*

41. An economic analysis shows the project is cost effective, resulting from reduced incidence of gastro-intestinal disease and willingness-to-pay (WTP) for additional water supply. The model assumes a 20 percent reduction in the cases of gastro-intestinal disease and a WTP of USD 5.48 per cubic metre, although only 25 per cent of the WTP benefits are counted in the benefits to avoid double-counting. The resulting economic rate of return is 13.2 per cent, which equals a net present value of USD 9.8 million using the UNDP 10 per cent discount rate. This result is robust to worst case scenarios, such as a 20 per cent increase in cost and lower than expected disease reduction or WTP.

42. A financial analysis was not undertaken for this project, as it is not revenue-generating, and the cost effectiveness is assessed through the economic analysis.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

43. The project aims to improve water security by strengthening the climate resilience of drinking and irrigation water for 15 vulnerable zones in the Comoros. The AE screened the project and categorized it as having an overall moderate environmental and social (E&S) risk, category B. Potential moderate E&S impacts that may result from the project include construction of infrastructure and increased abstraction of water resources as a result of improved water distribution networks. The GCF Secretariat confirms that the overall E&S risk category of the project is equivalent to the GCF E&S risk category B.

44. The AE has submitted, together with the funding proposal, a social and environmental screening report, which assesses potential E&S risks of the project to obtain an overall risk level, and an environmental and social management framework (ESMF), which is the main safeguards instrument for the project. A stakeholder engagement plan has also been provided, which identifies stakeholders and their roles in the implementation of the project.

45. The overall E&S risk level of the programme is moderate risk, which warrants disclosure of the ESMF document. Both the English and local language (French and Shikomori) versions of the ESMF document have been disclosed by the AE on its website.

46. E&S risks are expected due to the following: extraction of surface and groundwater; construction of various structures for reservoirs and tanks; water off-takes on rivers; and installation of water disinfection and filtration systems, pipe networks, and water meters.

Additionally, the ESMF has identified potential loss of income by community members owing to the implementation of the project. The ESMF assesses potential impacts that may result from the implementation of the project and outlines measures for mitigating risks when implementing the project during its construction and its operation. In addition, site specific control plans will be put in place to manage risks, such as those associated with surface and groundwater. The avoidance of the three Ramsar sites in the project area is included as performance criteria in the ESMF as a measure to preserve biodiversity. Compensation will be given to community members who will lose income owing to the project, and private land will be acquired by the Government at the market price in cases where it is required by the project following the AE safeguard standards and the country's applicable policies and regulations.

47. MEAPEATU is identified as the executing entity of the project in the funding proposal. However, with respect to administering the ESMF, the National Directorate of Environment and Forests (DGEF), an implementing agency, will be responsible for the implementation of the EMSF. Field inspections of the project will be audited by DGEF, and the AE will maintain oversight of implementation of the project, including execution of the ESMF. It is recommended that the AE undertake a gap analysis of the national regulations and AE safeguards standards both to fulfil the E&S safeguards and to implement any gap-filling measures that will be necessary if discrepancies are found to exist between the two. This is particularly relevant for land that may be acquired by the Government for some of the project's activities, such as construction of structures to improve water security. Furthermore, it is recommended that the AE conduct an assessment of the capacity of DGEF to perform its role as stipulated in the EMSF, and to recommend providing capacity-building to DGEF, if needed.

48. Monitoring and reporting requirements for various parameters are included in the ESMF.

49. The EMSF includes public consultation as part of the social management mitigation measures. The project was discussed with a wide range of stakeholders, including relevant government departments, industry groups, non-governmental organizations, and individual community members during the preparation stage. Additionally, community engagement activities that were undertaken in May 2017 in various locations of the project areas were documented and annexed to the funding proposal. A stakeholder engagement plan submitted by the AE identifies the stakeholders involved in the project, including their roles and responsibilities; the types of stakeholder engagement activities that will be undertaken going forward; and the stages in the project where such activities have been planned.

50. The EMSF provides a grievance redress mechanism for those that may be impacted by the project. The project-level mechanism is a two-tier mechanism: the first tier involves resolution of issues by the safeguards officer in the project implementation unit, with concerned officers as may be appropriate; and the second tier involves resolution of concerns by grievance redress committees, which will be constituted at the sub-district level. In addition to the project-level grievance redress mechanism, complainants have the option to access the accountability mechanism of the AE, which has both compliance and grievance functions. The weblink to the social and environmental compliance unit of the AE has been provided in the ESMF. It is recommended that the AE communicate information regarding the project-level and its institutional-level grievance redress mechanisms during stakeholder engagement activities planned for the project, including how the mechanisms can be contacted.

51. The project has proposed to build infrastructure on both Government-owned and private lands. The letters for easement have been signed and included in the funding proposal package. The permits will be provided by the Water and Electricity of Comoros agency and the ministry in charge of public works at the start of the activity year. Other than permits issued by Water and Electricity of Comoros and Electricity of Anjouan (EDA), no other legal disposition exists that would restrict or control the connection of water pipes to households.

52. The initial surveys and community discussions during project development identified potential sites that did not require resettlement.

4.2 Gender policy

53. The proposal contains a gender assessment; therefore, it complies with the operational guidelines of the GCF Gender Policy and Action Plan. The gender assessment outlines background on relevant gender issues in the country context and in water supply issues. In addition, it identifies women as the primary collectors, transporters, users, and managers of domestic water and promoters of home and community-based sanitation activities. The AE is strongly recommended to reflect the priorities and needs of men and women from stakeholder consultations in the activities of the gender action plan.

54. The AE has also provided a gender action plan with actions corresponding to the projects outputs, indicators with sex-disaggregated targets, institutions responsible for implementing the actions, timelines and allocated budget. In addition to undertaking a gender-sensitive study midterm and at the end of project to verify and monitor the implementation of gender-specific activities, the AE is strongly recommended to collect baseline data before commencing implementation of the project to rationalise the targets included in the gender action plan and the logic framework. In the funding proposal itself, as part of the key impact potential, direct and indirect beneficiaries have been disaggregated by gender, including beneficiaries relative to the total population. The logic framework has also incorporated indicators disaggregated by gender at the output level from the gender action plan. Sex-disaggregated targets have been included at the outcome level of the project's logic framework for some of the indicators. Implementation arrangements include a gender expert who will be recruited to monitor, evaluate and report on progress and results of project's gender-specific activities.

55. Opportunities presented by the project to ensure equal participation of women have been included in the gender assessment. For example, female representation in water management committees and integrated water resources management committees to give women more decision-making power and allow them to influence important decisions related to water allocation and development in their communities. It is also encouraging to note that the project will promote the inclusion of women in water management committees, improve access to water supply, and train both men and women as field staff for the installation and maintenance of hydrological equipment.

4.3 Risks

56. **Overall programme assessment (medium risk):**

(a) The funding proposal requests a GCF grant of USD 41.9 million accounting for 69 per cent of the total financing. The total project cost is USD 60.7 million with co-financing by way of grants and in-kind contribution from the AE, China Geo-Engineering Corporation, Arab Fund for Economic and Social Development and the Government of Comoros; and

(b) The project aims to manage Comoros' limited water resources by providing water supply infrastructure and building capacity of relevant institutions and communities to adapt the increasing climate change risks. The funding proposal stated that the water tariff reform process is ongoing as part of a governance strengthening initiative. The government updated its National Water Code and has committed to put in place the framework for implementation and full enforcement of a new tariff system in seven years. However, the revised National Water Code has not been ratified by Parliament despite approval by the President in 2016. In addition, climate change issues were not mentioned in the updated National Water Code. The political will for implementation of the Water Code and awareness of climate change issues from the government will be critical for the sustainability of the project.

57. **AE/EE capability to execute the current programme (medium risk):**

(a) UNDP, the AE, has an extensive track record in implementation of projects in Comoros and has been closely involved in climate change adaptation projects; and

(b) MEAPEATU is the EE for the project. The EE has experience in coordinating and implementing climate change-related projects funded by other donors/funds such as the Least Developed Countries Fund, European Union and French Development Agency (AFD) with the project size falling mainly within the micro category (under USD 10 million). According to the previous capacity assessment carried out by the AE, the EE has high/significant risks in most financial management areas such as audit, accounting policies, and procurement, among others. Given the unprecedented size of the project for the track record of the EE and the result of the capacity assessment for the EE, the AE is relied upon to coordinate closely with and provide necessary support for the EE.

58. **Programme specific execution risks (medium risk):**

(a) Land ownership: given the size of component 3 and the relevant construction activities, the community and individual landownership has the potential to delay and impact the project. The issue of land ownership has been identified in the funding proposal, which suggested several mitigating measures, including identification of land ownership, planning the interventions to maximize use of government land and signing of memoranda of understanding with communities. However, the information about which entity is in charge of managing the land ownership issue and the current status of land ownership in Comoros is not provided;

(b) Natural hazards: the AE has identified the risk of natural hazards damaging/destroying pre-existing and/or project activities. It will create short-term response and recovery priorities for government and communities. The funding proposal mentioned that there are no specific insurance policies relevant for the project activities. It is recommended that the AE ensures adequate insurance coverage is available for the project to cover any potential damages during construction and implementation of the project; and

(c) Economic viability: the AE has provided an economic analysis with a 10 per cent discount rate over a 25-year period. A sensitivity analysis was also carried out with nine different scenarios based on the variation in cost and benefits which results in an internal rate of return ranging from 8.8 per cent to 17.3 per cent. However, the project viability will depend on the success of the water tariff plan reaching O&M cost recovery in year seven as the project is envisaged. Despite the risk of delays in setting up a new tariff and the uncertainty of tariff reforms, the project has limited influence to impose such regulation and it will rely on political will at the national level. The funding proposal stated that the co-financing letter from the government includes the O&M budget for 25 years with a contingency plan in case of delays in setting up the tariff.

59. **GCF portfolio concentration risk (low risk):**

(a) In case of approval, the impact of this proposal on the GCF portfolio risk remains non-material and within the risk appetite in terms of concentration level, results area or single proposal.

60. **Compliance (low risk):**

(a) Under clause 4.11 of the accreditation master agreement, UNDP is required to prepare and submit funding proposals reflecting the scope of their contractual due diligence obligations conducted pursuant to clause 4.05. These include, inter alia, anti-money-laundering and countering the financing of terrorism due diligence. However, the funding proposal does not contain information on the outcome of first-level due diligence conducted by the AE in this regard. Given that the Secretariat relies on the due diligence undertaken by AEs, an anti-money-laundering and countering the financing of terrorism due diligence summary should be incorporated within the funding proposal; and

(b) Notwithstanding the foregoing, a preliminary assessment of compliance of the funding proposal was conducted and did not identify any issues. Furthermore, sanctions screening of the relevant parties mentioned in the funding proposal returned satisfactory results.

61. **Conclusion (medium risk):**

(a) It is recommended that Board considers the above factors in its decision.

Summary Risk Assessment		**Rationale**
Overall Programme	Medium	For the project to achieve the desired climate impact, the timely implementation of new tariff system and climate change consideration into the national policies will be critical. The capacity assessment of EE done by AE has revealed need for strengthening EE's practices, but the AE has relevant experience in the implementation of the project and providing necessary support to EE.
AE / EE capability	Medium	
Project specific execution	Medium	
GCF's portfolio concentration	Low	
Compliance	Low	

4.4 Fiduciary

62. MEAPEATU will be the main focal point for the project and will coordinate with island coordinators during project implementation. MEAPEATU will have project ownership and will appoint a Project Manager to coordinate project operations. The EE is required to implement the project in compliance with UNDP rules and regulations, policies and procedures, including the National Implementation Management Guidelines. The National Implementation Management arrangements will be consistent with other adaptation projects in Comoros supported by UNDP. The National Implementation Management Guidelines are compliant with UNDP procurement and financial management rules and regulations.

63. The financial management and procurement of this project will be guided by UNDP financial rules and regulations. The project will be audited following the UNDP financial rules and regulations noted above and applicable audit guidelines and policies. Per the current audit policies, UNDP will be appointing the auditors. UNDP scheduled audits are performed during the programme cycle as per UNDP assurance/audit plans, based on the implementing partner's risk rating and UNDP guidelines.

64. The capacity assessment conducted by UNDP regarding the EE shows high risks in certain areas. The AE has shared its plan for capacity-building of the implementing partners. In addition, UNDP country office may provide, at the request of the implementing partner, support services for the implementation of project activities.

4.5 Results monitoring and reporting

65. The funding proposal contains a theory of change that provides causal pathways between the barriers and the proposed intervention.

66. As an adaptation project, the proposal reports that the project is expected to impact an anticipated 450,000 direct beneficiaries (229,500 female) and 800,000 (375,000 female) indirect beneficiaries.

67. Under Section H.2, the information on monitoring and reporting complies with the GCF monitoring and accountability framework.

4.6 Legal assessment

68. The accreditation master agreement was signed with the AE on 5 August 2016 and became effective on 23 November 2016.

69. The AE has provided a certificate confirming that it has obtained all internal approvals and has the capacity and authority to implement the project.

70. The proposed project will be implemented in the Union of the Comoros, a country in which GCF is not provided with privileges and immunities. This means that, among other matters, GCF is not protected against litigation or expropriation in this country, risks that need to be further assessed. The Secretariat submitted a draft of the privileges and immunities agreement to the Government of Comoros on 7 October 2016. So far, no response has been received from the Government of Comoros.

71. The Heads of the Independent Redress Mechanism and Independent Integrity Unit have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by GCF are made only after obtaining satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

72. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval; and

(b) Completion of legal due diligence to the satisfaction of the Secretariat.