

Funding Proposal

FP240: Collaborative R&DB Programme for Promoting the Innovation of Climate Technopreneurship

Cambodia, Indonesia, Lagos, Philippines, and Vietnam | The Korea Development Bank (KDB) | Decision B.39/06

14 August 2024



Funding Proposal

Project/Programme title: *Collaborative R&DB Programme for Promoting the Innovation of Climate Technopreneurship*

Country(ies): *Cambodia, Indonesia, Laos, Philippines, and Vietnam*

Accredited Entity: *The Korea Development Bank (KDB)*

Date of first submission: *[2022/02/28]*

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GREEN
CLIMATE
FUND

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Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the [GCF Information Disclosure Policy](#), project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

"FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]"

A. PROJECT/PROGRAMME SUMMARY				
A.1. Project or programme	Programme	A.2. Public or private sector	Private	
A.3. Request for Proposals (RFP)	<p>If the funding proposal is being submitted in response to a specific GCF Request for Proposals, indicate which RFP it is targeted for. Please note that there is a separate template for the Simplified Approval Process and REDD+.</p> <p><u>Not applicable</u></p>			
A.4. Result area(s)	<p>Check the applicable GCF result area(s) that the <u>overall</u> proposed project/programme targets below. For each checked result area(s), indicate the estimated percentage of GCF and Co-financers' contribution devoted to it. The total of the percentages when summed should be 100% for GCF and Co-financers' contribution respectively.</p>			
	*Figures (%) are all indicative based on investment scenario.		GCF Contribution	Co-financers' contribution¹
	Mitigation total		50 %	50 %
	<input checked="" type="checkbox"/> Energy generation and access		16 %	16 %
	<input checked="" type="checkbox"/> Low-emission transport		32 %	32 %
	<input checked="" type="checkbox"/> Buildings, cities, industries and appliances		2 %	2 %
	<input type="checkbox"/> Forestry and land use		Enter number %	Enter number %
	Adaptation total		50 %	50 %
	<input checked="" type="checkbox"/> Most vulnerable people and communities		10 %	10 %
	<input checked="" type="checkbox"/> Health and well-being, and food and water security		40 %	40 %
	<input type="checkbox"/> Infrastructure and built environment		Enter number %	Enter number %
<input type="checkbox"/> Ecosystems and ecosystem services		Enter number %	Enter number %	
A.5. Expected mitigation outcome (Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)	<p>Indicate greenhouse gas (GHG) emission reductions or removals in tCO₂eq over total lifespan of the project/programme²</p> <p>1,639,681 tCO₂eq*</p>	A.6. Expected adaptation outcome (Core indicator 2: direct and indirect beneficiaries reached)	Indicate total number of direct and indirect beneficiaries	
			Indicate number of direct beneficiaries 1,180,881 (women, 50%)	Indicate number of indirect beneficiaries 1,132,408 (women, 50%)
			Indicate % of direct beneficiaries vis-à-vis total population 2.4%	Indicate % of indirect beneficiaries vis-à-vis total population 4.0%
A.7. Total financing (GCF + co-finance³)	221.2149 million USD	A.9. Project size	Medium (Upto USD 250 million)	
A.8. Total GCF funding requested	104.471 million USD <i>For multi-country proposals, please fill out annex 17.</i>			

¹ Co-financer's contribution means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF contribution (i.e. GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal.

² The total lifespan of the project/programme is defined as the maximum number of years over which the outcomes of the investment are expected to be effective. This is different from the project/programme implementation period.

³ Refer to the Policy of Co-financing of the GCF.

A.10. Financial instrument(s) requested for the GCF funding	<p>Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.</p> <div> <input checked="" type="checkbox"/> Grant <u>USD 20.721 million</u> </div> <div> <input type="checkbox"/> Loan <u>Enter number</u> </div> <div> <input type="checkbox"/> Guarantee <u>Enter number</u> </div> <div> <input checked="" type="checkbox"/> Equity <u>USD 83.75 million</u> </div> <div> <input type="checkbox"/> Results-based payment <u>Enter number</u> </div>		
A.11. Implementation period	11 years* * Fund lifespan	A.12. Total lifespan	30 years (5+25)* * 5 years of the fund investment period + a pipeline with the longest lifespan estimated
A.13. Expected date of AE internal approval	<p>This is the date that the Accredited Entity obtained/will obtain its own approval to implement the project/programme, if available.</p> <p>10/31/2024</p>	A.14. ESS category	<p>Refer to the AE's safeguard policy and GCF ESS Standards to assess your FP category.</p> <p>I-2</p>
A.15. Has this FP been submitted as a CN before?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.16. Has Readiness or PPF support been used to prepare this FP?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.17. Is this FP included in the entity work programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.18. Is this FP included in the country programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.19. Complementarity and coherence	<p>Does the project/programme complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1.</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>		

A.20. Executing Entity information

The programme has four Executing Entities (EEs) as below.

(1) The Korea Development Bank (KDB): Accredited Entity, co-Executing Entity of Components 1 and 4

The programme will leverage the proven three-tier venture investment platforms (*KDB NextRound*, *NextOne*, and *NextRise*) and global VC and acceleration networks of KDB Headquarters and its Singapore/London Venture Desk and KDB Silicon Valley LLC (VC subsidiary). Above all, KDB will serve as the control tower that aims at seamless interlinked management amongst the four (4) different components across five (5) NOL countries in capacity of both Accredited Entity and Executing Entity.

(2) Global Green Growth Institute (GGGI): co-Executing Entity of Components 1 and 4

GGGI is a treaty-based intergovernmental organisation that has been carrying out a number of climate actions and green growth promotion activities across the developing world. As a trusted advisor with a prominent in-country presence, GGGI has built trust with the five NOL countries' National Designated Authorities (NDAs). During the Project Preparation Facility (PPF) phase of the programme, GGGI had closely consulted the five NDAs for designing Components 1 and 4 to be properly aligned with the five governments' national policy direction and specific needs. GGGI will contribute to designing and operating the programme's core governance structure for strengthening country ownership – Sustainability Management Unit (SMU) – in consultation with NDAs and key local stakeholders in the five NOL countries.

Its signature initiative, entitled “*Global Greenpreneurs Program*”, has supported high-potential local green entrepreneurs – ca. 800 youths in total over the last four years – while providing incubation and acceleration services for 57 teams from 20 countries. In addition, GGGI has extensive experience in working with the private sector particularly with start-ups and MSMEs in diverse sectors with various green investment interventions.

(3) NH Investment & Securities (NHIS): Executing Entity of Component 2

NH Investment & Securities (NHIS) is the leading comprehensive financial investment company with overwhelming competitiveness in all business areas in Asia. Given that a call of the time for corporates to create ESG values and initiative is increasing, NHIS provides eco-friendly and green finance services, and has been committed to leading “Green Impact Finance” by fully leveraging its capabilities.

NHIS has been striving to lay a solid foundation for practical execution of ESG by revamping ESG-related organizations and investing ca. USD 15 billion in green impact related investment banking & brokerage activities across green finance and CSR.

In addition, its Carbon Finance Team has accumulated experiences in diverse GHG reduction projects in Korea and abroad, and has provided comprehensive carbon-offset consulting services, with a pursuit to lead the client-targeted carbon market through carbon credit brokerage and development of diverse financial products.

(4) NH Absolute Return Partners (NH ARP): Executing Entity of Component 3

NH ARP Pte. Ltd., a subsidiary 100% owed by NH Investment & Securities (NHIS) under the NH Financial Group (A+/S&P, A1/Moody's, A/Fitch), is a licensed fund management company in Singapore, with global investment expertise in private equity and debt deal opportunities. It has successfully driven performance with several leading investments in notable deals across Southeast Asian countries: in particular, specialised in growth stage investments in innovative technology-based companies within Southeast Asian.

NH ARP's capacity in leveraging core networks and securing high-quality investment opportunities will support the CTF to optimise investment portfolio and achieve returns. On the other hands, Carbon Finance Team of NH IS HQ, experienced with carbon financial services as the right solution, will support the fund's maximising climate outcomes. NH ARP will be the general partner and investment manager of the CTF, a limited partnership to be established in Singapore.

A.21. Executive summary (max. 750 words, approximately 1.5 pages)

“Climate Technology Acceleration” at the Core of a Paradigm Shift towards Low Carbon and Climate Resilient Innovation Pathways. This climate technology acceleration initiative has been inspired by the United Nations Framework Convention on Climate Change (UNFCCC, 2018)⁴ that spotlights a need to support developing countries to *“facilitate access to foreign exchange for entrepreneurs to purchase technologies not available in local markets that they need for developing their solution on an economically viable scale (p.50).”* The programme, *‘Collaborative R&DB Programme for Promoting the Innovation of Climate Technopreneurship,’* highlights the importance of supporting the Association of Southeast Asian Nations (ASEAN) to source and digest climate technology solutions through technology transfer in advancing mitigation and adaptation actions amid rapidly exacerbating climate crisis, with a strategic focus on five countries from Cambodia, Indonesia, Laos, and the Philippines to Vietnam (*in alphabetical order*). Pivoting from the five countries, the programme will support the regional innovation ecosystem conducive to replication and scaling of technology-enabled climate solutions in place, which will be instrumental in achieving a commonly forged vision of shared prosperity in the ASEAN community.

Programme Canvas



NOL Countries Shall Accelerate Climate Technology Leapfrogging as the Solution, while Climate Actions Are More Urgent than Ever. Many sources demonstrate that the five ASEAN economies are

⁴ UNFCCC. 2018. Climate Technology Incubators and Accelerators. Bonn: United Nations Framework Convention on Climate Change.

severely exposed to climate vulnerability and its adverse impacts and associated risks. Alarming consequences include worsening natural disasters and extreme weather events such as hurricanes, tornadoes, heavy rainfall and floods, and droughts, in terms of frequency, intensity, and impacts of submersion of inhabited coastlines, deteriorating quality and quantity of water supply, declining agricultural productivity, increased outbreak and spread of water-borne diseases, and reduced effectiveness of natural coastal defences. The ravages of COVID-19 and the post-pandemic economic slowdown have disproportionately increased climate risks to the most vulnerable, compounded the negative impacts of past and current resource management practices, and magnified the sustainable development challenges.

The fastest climate solutions therefore need to be deployed throughout the five NOL countries given the climate urgency. Surrounded by worsening multi-dimensional ravages of global warming, developed economies have affordable and market-ready climate solutions. The programme shall blaze the trail for the five countries to kick their carbon intensive pathways through partnering with entrepreneurs armed with already existing technology-enabled climate solutions. It will offer a collaborative research, development and business (R&DB) platform on a quest for tailored business models that best fit the five countries' mitigation and adaptation technology needs, set up an investment fund at scale to encourage the market penetration of disruptive technology solutions, and empower the regional ecosystem eager for innovation uptake.

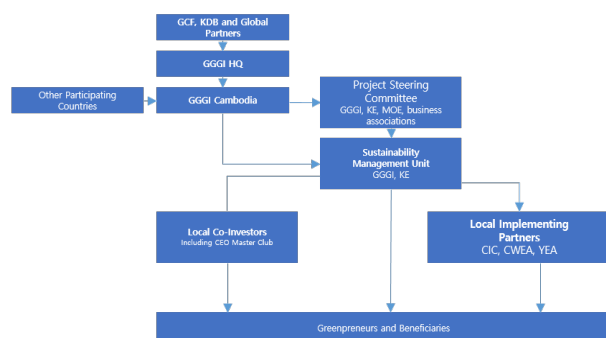
Local – Global Joint Venture (JV) Partnership as the Key Technology Transfer Mechanism that Promotes Climate Technology Leapfrogging in NOL Countries. The programme conceives *'technology transfer via a joint venture (JV) as a result of collaborative R&DB acceleration'* as a key profound concept, given that UNFCCC (2018)⁵ spotlights the importance of supporting developing countries to source, digest, and deploy climate technology solutions through technology development and transfer in advancing mitigation and adaptation actions amid rapidly exacerbating climate crisis. JVs will eventually lead up to multi-faceted impacts that would curtail greenhouse gas (GHG) emissions, enhance climate resiliency, and, most importantly, strengthen local human capital capacity that is a crucial factor in internalising and accelerating technology innovation towards net zero in the long run, along with the engagement of diverse, cross-border innovation ecosystem stakeholders from academic institutions and start-up support intermediaries to large corporates under the common agenda of sourcing and disseminating tech-inspired climate solutions.

NOL Countries' Strong Ownership. The programme will build on existing local platforms and initiatives for the sake of the absorption of the programme into local governance. Every programme country has a national body for promoting entrepreneurship or relevant mechanism, though they demonstrate different forms, levels, and maturity. The programme will team up with such bodies to maximise the use of the contextually settled system and infrastructure, ensuring timely and efficient operationalisation, and staying on track even after the GCF-KDB exit. It shall minimise expenses for a new office set-up with newly purchased office supplies, electronics, and furniture. This satisfies a governmental demand to minimise the creation of new mechanisms that typically fragment, duplicate, or overlap the efforts of local governments. In addition, recognising that the public sector engagement on public policy and regulatory framework is key to a genuine success of the private sector intervention, the programme will invite NDAs and line ministries of the five NOL countries to be part of the Project Steering Committee that will give guidance for the overall programme execution by leading a high-level ministerial coordination and providing advice to each country-specific activities in the country-specific Sustainable Management Unit (SMU). The contextually fit SMU governance will ensure strong country ownership and participation of individual NOL countries.

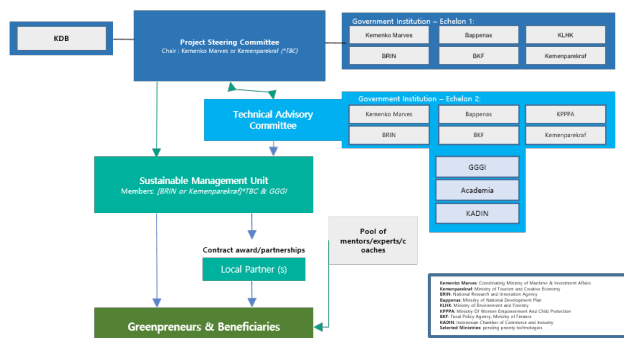
⁵ UNFCCC. 2018. Climate Technology Incubators and Accelerators. Bonn: United Nations Framework Convention on Climate Change.

Country Ownership-built SMU Implementation Structure (indicative)

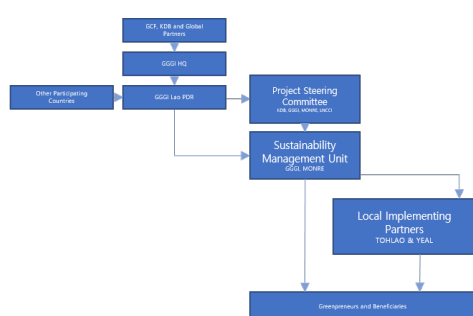
I. **Cambodia** SMU Implementation Structure (tentative)



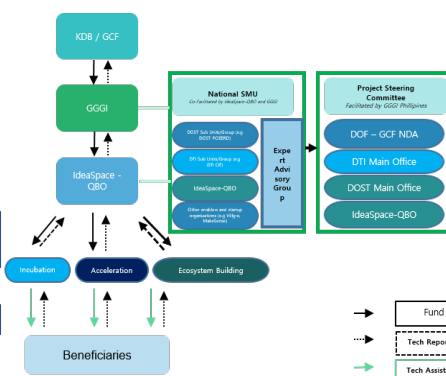
II. Indonesia SMU Implementation Structure (tentative)



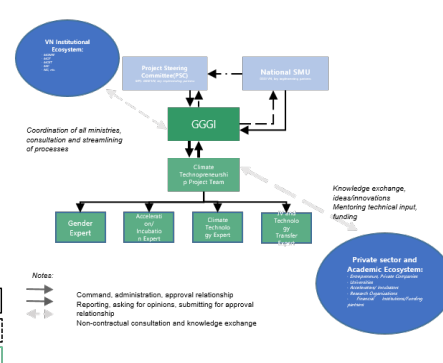
III. Laos SMU Implementation Structure (tentative)



IV. Philippines SMU Implementation Structure (tentative)



V. **Vietnam** SMU Implementation Structure (tentative)



“SDG 17. Partnerships for the Goals” – Cross-border Collaboration with Advanced Innovation Ecosystems to be Convened through Global Climate Technology Providers Joining the Initiative. In pursuit of the vitalised global partners

Joining the Initiative. In pursuit of the vitalised global partnership embodied in the Sustainable Development Goal (SDG 17), the programme shall invite and attract climate technology innovators from advanced ecosystems, including, but not limited to, Canada, Denmark, Finland, the Netherlands, Singapore, the U.S., and the UK, where leading climate technologies are being developed and accelerated. By leveraging the extensive network consisting of VCs, accelerators, and other startup support intermediaries (e.g., CATAPULT, 500 Global, Techstars, Plug and Play) with global presence, global innovators in climate space will be sourced to scale up their impactful technologies to flow into the ultimate

destination – the five emerging ASEAN markets as the test-bed. Some concrete examples of networks and how they are to be leveraged for the programme are as follows:

- **[KDB, Accredited Entity]** Global presence of KDB, through its Silicon Valley LLC and London and Singapore Venture Desk, will add value to the programme in sourcing global innovators in climate space through regular Global NextRound events (KDB's signature IR events), alongside leveraging its Global Partnership Fund (KDB-led Fund of Fund scheme investing in global VCs, e.g., Kleiner Perkins). Besides, KDB global branch offices will support regular/ad-hoc venture meet-ups and sourcing events in the format of demo day to reach out to top-tier climate tech providers.
- **[VC]** The GP will leverage its connection to VCs based in advanced climate responsive ecosystems, namely, Collaborative Capital, DCVC (based in San Francisco, US), Mekong Capital (based in Vietnam), SkyRiver Ventures (based in Boston, US) and PITANGO and Cardumen

Capital (based in Tel Aviv, Israel), Innovision (based in Singapore and Japan), Pana LCE (based in Singapore), Vertex (based in Singapore) that are currently executing climate tech-related investments or operating global open innovation programmes and have potential to join investment rounds for the programme. Furthermore, the vast VC network into which the GP is plugged also spreads over the ASEAN region, having room for major VCs on the ground, e.g., Archipelago Capital Partners, Openspace Ventures, Wavemaker Impact, Tin Men Capital, Genesis Alternative Ventures, Indogen Capital (based in Singapore), East Ventures, AC Ventures, Alpha JWC Ventures, Indies Capital (based in Indonesia), Viet Capital Ventures, Do Ventures (based in Vietnam), Kickstart, Gentree Investment Management, and Tallwood VC (based in Philippines), to be connected to the programme and draw climate innovators at both global and regional levels. The programme plans to strengthen collaboration with the VCs and surrounding communities for climate theme-centred seminar/IR events. Venture ESG, an EU-born, global ESG community of VCs and financiers, is a solid example in which the programme can potentially engage on such occasions.

- **[Corporate]** The GP will leverage the pool of global technology providers, including but not limited to, previously reviewed by the its connections in the US (New York), China (Beijing, Shanghai), Indonesia (Jakarta), Vietnam (Hanoi, Hochimin), and UK (London), to support businesses with potential for scalability in the ASEAN market. This initiative is part of the GP's endeavour to aid the business development of NHIS's global subsidiaries, with a special focus on Southeast Asia.
- **[Academia]** The programme will leverage global academic-corporate cooperation activities (see below) hosted by EcoLabs Centre of Innovation for Energy under Nanyang Technology University of Singapore as well as Bandung Institute of Technology of Indonesia which engages and invites global corporates in their open innovation projects that can connect with the programme.
- **[Embassies]** The programme will seek to interact with the embassies of advanced climate ecosystems operating innovation and R&D programmes to proactively access the global climate technology providers. Innovation Centre Denmark, administered by the Danish Ministry of Science, Innovation and Higher Education, and the Danish Ministry of Foreign Affairs, and Swissnex, managed by the Swiss Federal Department of Foreign Affairs and under the initiative of the State Secretariat for Education, Research, and Innovation are some of the global launchpad examples that the programme could collaborate with, ultimately to enlarge innovation on a global scale.

The Programme's Thematic Goal of Technology Transfer Shall Pitch its Prominent Role at the UNFCCC COP29 Climate Summit. Building on meaningful insights on the 9th agenda of "Matters relating to development and transfer of technologies" at the 27th session of the Conference of the Parties of the UNFCCC (COP27), at the COP29 to be hosted by the Azerbaijan in 2024, the programme will therefore pitch its role as the very first of its kind technology transfer initiative that will accelerate developing countries' capacity to uptake and digest climate responsive technologies. The year of 2024 will be a monumental year for this programme that goes beyond the BAU climate business model and embraces an ambition to tackle root causes which have hampered developing countries from being equipped with innovative capacity to combat climate change. The programme will be officially showcased at the COP29 as a kernel initiative for a sustainable future that would contribute to addressing innovation ecosystem hurdles and technology uptake/digestion barriers, thereby enhancing the developing world's access to climate responsive technologies. This technology transfer initiative will be poised to support, accelerate, boost, and scale up sustainability achievements in various technology-themed result areas. In addition, the programme will create a vibrant space for entrepreneurial participation of the conventionally disadvantaged groups such as youth in poverty, women and girls in engineering and technician fields, and vulnerable local SMEs without capacity to carry out technology-driven climate actions. In particular, the targeted ASEAN countries are to seize the golden opportunities of being powered to experience a broad spectrum of technologies that ensure sustainability in energy security, healthcare protection, water resource management, resilient agriculture, food supply chains, and so on. The programme will be part of supporting COP 29 to pave the way for a brighter future ambition to effectively tackle the global challenge of climate change.

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

Climate Context of the Targeted NOL Countries. The five target countries for the programme make up 21% of the total population for East Asia and the Pacific⁶. The total population of Southeast Asia grew at an annual average rate of 1.02% between 2015 and 2020, while the urban population grew at a rate of 2.21%.⁷ Economic growth in the region has increase at an annual average rate of 5%, while fossil fuel generated energy demand has increased at an annual average rate of 6%.⁸ Though all economies are classified as lower middle income, poverty rate and access to goods and services vary widely within the region; countries like Cambodia and Lao PDR have higher poverty rates and lower levels of access to goods and services.⁹ A table below provides a snapshot of the countries' socioeconomic context.

Socioeconomic Context for the Programme Countries¹⁰

Country	Economic Context				Access to Goods & Services		
	GDP (\$ Billions)	Urban Population	Rural Population	Poverty Rate (%)	Food Insecurity (%)	Water Security (%)*	Access to Healthcare
Cambodia	26.96	4,092	12,496,843	17.7	15.1	28.0	0.2
Indonesia	1186.09	156,833	116,919,988	9.8	0.7	..	0.5
Lao PDR	18.82	2,742	4,682,315	18.3	8.3	18.0	0.4
Philippines	394.08	54,302	59,577,632	16.7	4.8	47.0	0.6
Vietnam	366.13	37,088	60,379,495	6.7	0.6	..	0.8

*Cells displaying “..” indicate that data are not present within World Bank indicators database for select

Climatic patterns in the region are somewhat consistent with defined dry and wet seasons, generally substantial annual rainfall amounts, consistently moderate to high temperatures with intermittent extreme heat conditions, and annual cyclonic activity. The countries have a collective 142,000 km of coastline and support several large transboundary rivers (i.e., Mekong River (Cambodia), Tonle Sap River (Cambodia), Red River (Vietnam)) whose floodplains provide delicate ecosystems to cultivate rice and other crops. In all countries, national plans and policy frameworks have emphasised the critical need for climate technology in response to the countries' high climate vulnerability and aspirations for low-carbon and climate-resilient sustainable economic development.

- **Need for Adaptation.** Southeast Asia is considered one of the most climate vulnerable regions in the world.¹¹ The climate hazard trends in the target countries show increases in rising atmospheric temperatures, changing precipitation patterns, sea level rise, ocean warming, and cyclones. Populations, natural systems, and built infrastructure within the region are experiencing increased exposure to these climate hazards. Combined with pre-existing vulnerabilities that communities experience—high rates of poverty and inequality, urbanisation and population density, insufficient healthcare systems, unsustainable agriculture, inadequate water resources and infrastructure, and

⁶ World Bank (2023). “Indicators.” <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=Z4>

⁷ Asean (n.d.). “Chapter 5: Urbanisation Wave and ASEAN Regional Agenda.” Global Megatrends: Implications for the ASEAN Economic Community. https://asean.org/wp-content/uploads/2017/09/Ch.5_Urbanisation-Wave-and-ASEAN-Regional-Agenda.pdf

⁸ Center for Strategic and International Studies (2022). “Southeast Asia’s Challenge of Decarbonizing While Growing Rapidly.” <https://www.csis.org/analysis/southeast-asias-challenge-decarbonizing-while-growing-rapidly>

⁹ World Bank (2022). “New World Bank country classifications by income level: 2022-2023.” [https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2022-2023#:~:text=The%20World%20Bank%20assigns%20the,the%20previous%20year%20\(2021\).](https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2022-2023#:~:text=The%20World%20Bank%20assigns%20the,the%20previous%20year%20(2021).)

¹⁰ World Bank (2023). “Indicators.” <https://data.worldbank.org/indicator>

¹¹ USAID (2022). “Addressing the Climate Crisis in Southeast Asia: A Regional Approach.” <https://www.usaid.gov/asia-regional/fact-sheets/addressing-climate-crisis-southeast-asia-regional-approach#:~:text=Southeast%20Asia%20is%20globally%20considered,intense%20and%20unpredictable%20weather%20events.>

gender inequality—significant impacts (i.e., realised risks) will lead to predominantly negative effects on human health, productivity, the economy, financial resources, and more.

A below table shows the key climate-related natural hazards and vulnerabilities based on reviewed data and evidence; per capita GHG emissions; and the Notre Dame Global Adaptation Initiative Index (ND-GAIN)¹² score, which is a summary of a country's vulnerability to climate change impacts and its capacity to improve its resilience and adapt to climate impact.¹³ The Climate Rationale (Annex 24) reveals a clear resilience gap in the five countries—evidenced by recent climatic trends and some empirical evidence for the effect on people, economies, natural systems, and infrastructure—and an increasing adaptation need demonstrated by accelerating effects from climatic changes.

Climate Hazards and Vulnerability Indicators by Country

			Cambodia	Indonesia	Lao PDR	Philippines	Vietnam
Climate Hazard Category	Temperature-related hazards	Extreme heat	•	•	•	•	•
		Ocean warming		•			
	Water-related hazards	Changing precipitation	•	•	•	•	•
		Sea level rise	•	•		•	•
	Wind-related hazards	Tropical cyclone	•			•	•
Vulnerability Indicators	Poverty		•	•	•	•	•
	Urbanisation			•		•	
	Insufficient healthcare		•	•	•		
	Unsuitable agriculture		•		•		•
	Inadequate water resources		•	•	•	•	•
	Gender inequality		•	•	•	•	•
GHG-Emissions (per capita)			1.0	2.3	2.6	1.3	3.5
ND-GAIN ranking			133	107	145	115	126

- **Need for Mitigation.** High rates of urbanisation and economic development coupled with an increase in energy access have led to a greater dependence on fossil fuels and higher emissions in Southeast Asia. In Vietnam, for example, rapid economic growth has propelled a steep increase in vehicle ownership – car registration increased 15% per year from 2014 to 18 - with transport emissions representing 11% of the country's GHG emissions in total. With one of the world's highest deforestation rates – at 1.2% annually – Southeast Asia experienced the most rapid increases in carbon dioxide emissions in the world between 1990 and 2010.

To meet the Paris climate pledges, ASEAN nations will have to reduce emissions by 11% by 2030 as compared to current trajectories. Present lagging progress for needed investment and emissions rate of change, the International Energy Agency (IEA) concludes that making improvements in regulatory and financing frameworks in Southeast Asia would reduce the costs of clean energy projects. For example, the levelised cost of energy (LCOE) of solar PV in Indonesia could be around 40% lower if its investment and financing risks were comparable to advanced economies.

¹² ND-GAIN Country Index. University of Notre Dame. July 21. <https://gain.nd.edu/our-work/country-index/>

¹³ Countries are given a combined score of vulnerability and adaptive capacity and ranked amongst nearly all sovereign nations (the index includes 182 countries). The bottom row in the table below identifies the relative ND-GAIN score for the countries, with most countries ranked in the latter half of the Index (i.e., below at least 90 countries), signalling vulnerability and a lack of adaptive capacity in the face of climate-related risks.

NOL Countries' Prioritised Climate Responsive Technology Needs

To better define the range of optimal interventions against these adaptation and mitigation needs, the programme performed climate vulnerability situation analysis and technology needs assessment, with reference to Technology Needs Assessment Step by Step guidebook (UNEP ETU Partnership, 2019).

Extensive review of country-specific climate vulnerabilities, national development plans including NDCs, NAPs, and other climate strategies, relevant policies, multi-disciplinary assessments, and multi-level stakeholder consultations, including potential technology and/or innovation suppliers, revealed a range of appropriate technologies for which there is deployment demand pull, which can be segmented into seven (7) technology groups. A Table below shows these prioritised climate technology groups mapped to each country and GCF results area. For more information on the methodological approach and country-specific and/or cross-country analysis, see Annex 2.

Prioritisation of Climate Responsive Technology Needs



Grouping of Seven (7) Prioritised Climate Technology Needs

Technology Group (TG)	Sub Technologies	Result Area(s)	C	I	L	P	V
TG 1: Renewable energy generation	Ocean energy	M1		○		○	○
	***Bioenergy (renewable biomass)	M1		○	○	○	○
	Small-scale hydropower	M1			○		
	Solar energy	M1	○	○	○		○
	Wind energy	M1		○			○
	Other**	M1	○	○	○	○	○
TG 2: Transmission, distribution, and electricity storage	Modern renewable off-grid energy systems	M1	○		○	○	
	Connection of isolated grid	M1			○		
	Battery storage	M1	○			○	
	Other**	M1	○	○	○	○	○
TG 3: Low-emission transport	Low-carbon/energy efficient mass transport	M2	○	○			○
	EVs (e.g., e-cars, e-motorbikes, e-bicycles)	M2	○	○	○	○	○
	EV infrastructure	M2	○		○		
	Alternative transport fuels (next generation advanced zero-emission biofuels, green hydrogen)	M2		○	○	○	○
	Other**	M3, M1	○	○	○	○	○
TG 4: Residential and industrial energy efficiency technologies	Building energy modelling	M3, M1					
	Lighting	M3	○		○	○	○
	HVAC	M3, M1	○		○	○	○
	Appliances	M3, M1	○	○	○	○	○

	Other**	M3, M1	○	○	○	○	○
TG 5: Agricultural technologies and practices	Sustainable agriculture	A1, A2	○	○	○	○	○
	Climate-resilient plant/animal genetics/breeding	A1, A2	○	○			○
	Water saving and efficient irrigation methods	A2	○	○		○	○
	Flood and drought management technology	A1		○	○		○
	RE-powered equipment	A2	○	○	○	○	○
	Other low carbon and climate-resilient farming methods and climate-linked insurance products	A1, A2		○	○	○	○
	Other**	A1, A2	○	○	○	○	○
TG 6: Water management and treatment	Nature based solutions	A2		○	○		○
	Management of water resources	A2	○	○	○	○	○
	Small-scale, decentralised wastewater plants	A2	○	○			
	Wastewater treatment	A2	○				○
	Water treatment processing	A2	○	○			
	Water desalination	A2				○	
	Other**	A2	○	○	○	○	○
TG 7: Waste management and treatment	Mechanical-biological treatment	A2, M1	○	○	○		○
	Aerobic/semi-aerobic digestion	A2, M1	○		○		
	Waste to energy	M1	○		○	○	○
	Composting	A2, M1	○	○			○
	Other**	A2, M1	○	○	○	○	○

* [Abbreviation by Country] Cambodia (C), Indonesia (I), Laos (L), Philippines (P), and Vietnam (V)

* [Indicator] O = Country provided examples of the respective technology needs or generic area of the needs

** Other is included as a technology group category to indicate that technology deployment opportunities will evolve over time as brand new and/or unprecedented climate responsive technologies are brought to market over the life of the investment cycle (i.e., by earlier 2030s) and that not all possible solutions are presently identified. The UN Climate Technology Centre & Network (CTCN) Taxonomy¹⁴ or equivalent can be referenced for potential technologies that may be considered over the life of the fund.

*** In case of bioenergy (renewable biomass), relevant investments should not give rise to negative climate and/or sustainability concerns.

Tailored and Focus Investment Plan by Country. The indicative priority sectors have been identified as below by the GP, while the investment is open for all technology needs identified by the NOL countries. See Annex 25 for more information on GP investment plan.

- **Cambodia** – The GP sees impactful investment opportunities in agricultural technologies including but not limited to water saving, irrigation, flood and drought management, and climate-resilient crops/livestock/fishery technologies. While Cambodia aims to incorporate renewables into its energy mix, the GP seeks to invest in technologies and businesses that increase the efficiency of renewable energy generation, in the middle of the availability of the technologies together with government alignment and support.
- **Indonesia** – The GP seeks to invest in technologies in the area of the EV and adjacent ecosystem for the sake of low-carbon transformation in mobility, along with the electrification of transportation pushed by the Presidential Degree. Another focus is the entire agro-food sector contributing to 35% of the populous country's GDP.
- **Laos** – The GP will prioritise agriculture tech practices and waste amid a specific regulatory framework not yet established. In addition, as for forest management, it is believed that public-private-community partnership-based investment would be needed in the future as below.

Public/Government	NH ARP	Community
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¹⁴ UN Environment Programme, Climate Technology Centre & Network Taxonomy (published December 15, 2017): <https://www.ctcn-n.org/resources/ctcn-taxonomy>

- Sustainable wood and NTFP supply and ecosystem services (forest cover, carbon sinks, biodiversity soil, water) provision - Political, institutional, and financial risks	- Climate impactful investments in forestry relevant industries with a reasonable return - policy, technical, financial and reputational risks	- Increased food security, reduced poverty, sustainable livelihoods resilience to climate-impacted market fluctuations - Risks mainly related to land access and livelihoods
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- **Philippines** – The GP will prioritise renewable energy generation and low-carbon transportation as it is the most in need of solution, along with the governmental adoption of a national energy policy and regulatory framework with incentives to increase the use of electric and hybrid vehicles.
- **Vietnam** – The GP will mainly see opportunities in industries of renewable energy generation and storage and low-carbon transportation, in partnership with other financing entities with the aligned mission for climate action. Relevant industrial ecosystems – e.g., establishment of a value chain for greener battery production beyond the traditional lead-acid battery production will be supported under the programme.

Most likely Scenario in the Absence of Intervention. In the absence of technological intervention for a shift from carbon-intensive to low carbon development and increased climate resilience, climate driven impacts will continue and worsen. By 2100, rising temperatures in the region will reduce agricultural yields by 50% compared to 1990 levels¹⁵ and decrease agricultural labour productivity by 8.8% due to heat stress.¹⁶ Water stress in the region is projected to affect nearly 185 million people by 2050.¹⁷ Sea level rise is predicted to cause a loss of nearly 1% of land and associated capital assets by 2050¹⁸—much of this damage occurring in highly populous, coastal cities such as Jakarta (Indonesia), Manila (Philippines), and Ho Chi Minh (Vietnam).¹⁹ Simultaneously, carbon-intensive growth trends will continue.²⁰ Energy demand is projected to rise at an annual rate of 3% per year in Southeast Asia through 2030; 75% of this growth will be met by fossil fuels causing a 35% increase in CO₂ emissions.²¹ Countries will continue to be reliant on fossil fuel and vulnerable to energy market shocks, outdated infrastructure, and energy supply fluctuations. Rural and remote areas will remain underserved, urban buildings will remain inefficient, and clean transportation infrastructure underdeveloped.

Technological Leapfrogging is Necessary for Quick, Strong, and Enhanced Climate Actions. Urgent climate solutions, in short, immediate actions, need to be deployed throughout the five countries during this state of climate urgency. Many climate technologies available today, like renewables and lithium-ion batteries, have recently emerged to compete with emission-intensive technologies; it has taken decades, not years, for such technologies to mature to the point where markets can bring them to scale and replace outdated rivals. Developing countries cannot wait that long for the next generation of clean technologies to become competitive in their markets to reach current climate goals. This is even more urgent in the context of the five target countries where the mainstream investment focus is tilted towards IT, fintech, and mobile industries, calling for the needs to source adequate climate technology to fill in the gaps with effectiveness.

The programme, therefore, appeals to the global community to collaborate in order for the countries to leapfrog over emission-heavy, inefficient, and polluting technologies, moving straight towards low-carbon, efficient, and clean technologies; they should not revisit the past industrialisation trajectories and

¹⁵ Asian Development Bank (2020). "Climate Change in Southeast Asia: Focused Actions on the Frontlines of Climate Change." <https://think-asia.org/bitstream/handle/11540/720/climate-change-sea.pdf?sequence=1>

¹⁶ International Labour Organization (2019). "Working on a warmer planet: The impact of heat stress on labour productivity and decent work." https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_711919.pdf

¹⁷ Asian Development Bank (2015). "Southeast Asia and the Economics of Global Climate Stabilization." <https://www.adb.org/sites/default/files/publication/178615/sea-economics-global-climate-stabilization.pdf>

¹⁸ Asian Development Bank. "Climate Change in Southeast Asia: Focused Actions on the Frontlines of Climate Change." <https://think-asia.org/bitstream/handle/11540/720/climate-change-sea.pdf?sequence=1>

¹⁹ Asian Development Bank (2015). "Southeast Asia and the Economics of Global Climate Stabilization." <https://www.adb.org/sites/default/files/publication/178615/sea-economics-global-climate-stabilization.pdf>

²⁰ IEA (2022). "Southeast Asia Energy Outlook 2022." <https://iea.blob.core.windows.net/assets/e5d9b7ff-559b-4dc3-8faa-42381f80ce2e/SoutheastAsiaEnergyOutlook2022.pdf>

²¹ IEA (2022). "Southeast Asia Energy Outlook 2022." <https://iea.blob.core.windows.net/assets/e5d9b7ff-559b-4dc3-8faa-42381f80ce2e/SoutheastAsiaEnergyOutlook2022.pdf>

undesirable legacies – especially, the chief culprits of climate change – of the Industrial Revolution that have swept through today's developed countries for the last several decades.

A Conclusion: Technology Leapfrogging via Technology Transfer. Technological leapfrogging is achievable with technology transfer from industrialised countries to late-comer economies. The low-carbon and climate-resilient capacity of the developing world can be promptly fostered by absorbing commercially proven frontier technologies, skipping the technological evolution process that can take decades of experiments and trials and errors to get to the maturity point. Therefore, the programme shall offer a window of leapfrogging opportunities for partner countries to opt for, customise, apply, deploy, and scale best-fit and innovative technologies under cross-border technology transfer mechanisms.

Significance of Technology Transfer Globally Recognised but Gaps between Knowing and Doing. Achieving the objectives and goals of the Paris Agreement requires technological innovation that inevitably entails a widespread transfer of mitigation and adaptation technologies addressing the needs of developing countries; innovation consumes significant time and energy so accelerated progress is necessary. Decades of global discourse have generated a consensus that technology transfer is a core enabling element to limit global average temperature rise to 1.5°C. Regardless of such global recognition and some trials, barriers have continued to affect a broad set of processes covering the flow of innovative climate technology solutions being transferred to emerging markets: surely those of the ASEAN region.

(1) Addressing Supply-sided Controversy over Intellectual Property (IP) Rights. In actuality, the programme theme '*climate technology transfer*' has raised a fundamental and controversial question on IP rights on whether developed economies have a commanding position over patents in climate technologies as apparent market trend reflects. Real cases have disclosed that patent holders are reluctant to engage or simply refuse to license their patented technologies to a third party, while expressing fears of unreasonable competition from the licensee that could weaken their competitive advantage. Several companies expressed concern as they have been reminded of real-world experiences of others in foreign countries whose bargaining power enforced technology transfer to local actors through mechanisms outside the patent based system. Such cases have become more prevalent and protective actions by innovators have hindered developing countries from gaining access to adequate technology solutions.

The programme shall therefore catalyse the appropriate regime shift throughout relevant ecosystems, leveraging the bargaining power of the UNFCCC under which 197 Parties have committed to climate technology transfers. It particularly proposes a compulsory licensing framework utilising standard terms as a patent protection and safety tool, under which global players will voluntarily engage in technology transfer activities and local recipients will enjoy timely access to patent protected technologies without abusive practices sometimes committed by patent holders; i.e., breaking the vicious circle of distrust, secrecy, and patent abuse, such as excessive pricing. "Technology transfer can rarely stand on its own; it gets its support from a framework of intellectual property rights and know-how protection (Erstling, 1992, p.215).²²"

(2) Addressing Demand-sided Barriers via Ecosystem Building. Bringing climate technologies into transformative and scalable solutions in the five economies has been delayed due to barriers on the ground – though at different levels of severity according to varying stages of development. They are associated with limited government initiatives and public policies in support of innovation; heavy bureaucracy that frustrates effective inter-ministerial coordination; institutional capacity on technology based R&D in terms of budget, physical facilities, and qualified staff; shortage of risk capital and dormant private sector engagement; insufficiency of market readiness; a small-scale

²² Jay Erstling. 1992. International Technology Transfer and Intellectual Property Rights: Some Essentials and Options for Technology Transfer Partners.

technology business incubation community; and stagnant inequalities and insecure social groups, including disadvantaged women and girls with low levels of literacy in science, technology, engineering, and mathematics (STEM).

With barriers found across different segments in shaping societies and market dynamics of the five economies, it is remotely possible to single out definitive root causes of the continuing challenges that hinder climate technology leaps and innovation potentials. On that account, the programme shall proactively endorse the appropriate ecosystem which can cover multi-dimensional barriers that have long been locked in a vicious interlinked circle.

- (3) Minimising Fragmentation and Inefficiency in Harmony with On-going Interventions.** Since early stages of idea brainstorming and concept designing, KDB has taken a proactive approach to explore ways of harnessing complementarities amongst a scattered set of similar interventions at both national and regional levels across partner countries. Market assessments indicate support is available in small slices from several different channels. A notable initiative is the Global Cleantech Innovation Programme (GCIP), supported by the Global Environment Facility (GEF) and implemented by the United Nations Industrial Development Organisation (UNIDO). Knowledge exchange and conceptual discussions with the UNIDO team were conducted to avoid wasteful duplications of work and inefficient spending of funds so that the two initiatives can operate in parallel and generate synergies to the fullest capacity possible.

Besides, the programme plans to make potential synergy points with other global or regional initiatives such as UNDP Country Accelerator Labs, ADB Mekong Business Initiative (MBI), the Mekong Challenge Programme, and GGGI Global and Regional Greenpreneurs Program: e.g., sharing lists of key stakeholders and lessons learnt from completed consultations, introducing a pool of graduates from other incubation programmes, and discussing joint matchmaking or networking events. In a nutshell, this initiative aims to avoid fragmentation between on-going, existing initiatives. Above all, it will build on existing infrastructures and resources on the ground – e.g., the five countries' business acceleration entities – for a true ownership and capacity enhancement of the five countries, thereby maximising complementarity and synergism with existing initiatives for technology business entrepreneurship.

- (4) Unprecedented Uncertainty and Unpredictability in the Time of COVID-19 and Beyond.** As the coronavirus has taken hold of the world and introduced a new level of uncertainty, the ASEAN bloc has been hit hard as much of the rest of the globe. An obvious downside is the adversity most entrepreneurs face amid economic fluctuations; in addition, it takes even longer to turn technologies into scalable market solutions during times of extreme stress. The Global Innovation Index (GII) 2021 (World Intellectual Property Organisation, 2021) indicates “a severe cutback in innovation investments (p.9)” throughout COVID-19, scoring the lowest innovation performance of economies over the course of the pandemic crisis. The programme shall therefore provide ASEAN-centric acceleration services with USD 200 million in patient capital amid the crisis like no other in modern times

Complementarity and Coherence to Existing Projects/Interventions. The programme aims to proactively endorse and create the appropriate ecosystem which can overcome multi-dimensional barriers that have collectively slowed progress. The R&DB Programme is the only equity-based platform that invests in SMEs in Southeast Asia to accelerate climate mitigation and adaptation entrepreneurship. Its targeted support for capacity building with institutions across the region, with active partnership and acceleration activities to match technology providers and entrepreneurs and facilitate market entry, and venture capital investing to move early-stage companies toward more stable financial foundations make the programme unique.

Since early stages of idea brainstorming and concept designing, KDB has taken a proactive approach to explore partnerships amongst a scattered set of similar interventions at both national and regional levels across partner countries. For example, project partners engaged the Global Cleantech Innovation Programme (GCIP),²³ to exchange knowledge and avoid wasteful duplications of work and inefficient spending of funds. KDB plans to actively connect and find synergies with other global or regional initiatives such as UNDP Country Accelerator Labs, ADB Mekong Business Initiative (MBI), the Mekong Challenge Programme, and GGGI Global and Regional Greenpreneurs Program, and share lessons learned as well as synergies.

Moreover, it will leverage the bargaining power of the UNFCCC under which 197 Parties have committed to climate technology transfers. It particularly proposes a compulsory licensing framework utilising standard terms as a patent protection and safety tool, under which global players will voluntarily engage in technology transfer activities and local recipients will enjoy timely access to patent protected technologies without abusive practices sometimes committed by patent holders; i.e., breaking the vicious circle of distrust, secrecy, and patent abuse, such as excessive pricing.

In sum, the programme will (i) address supply-sided controversy over intellectual property (IP) rights, (ii) address demand-side barriers via ecosystem building, (iii) improve supply-side opportunity through joint venture nurturing and critical growth financing, and (iv) minimise fragmentation and inefficiency in harmony with on-going interventions.

B.2 (a). Theory of change narrative and diagram (max. 1500 words, approximately 3 pages plus diagram)

Key Concept beneath the Surface of a Paradigm Shifting Transition. The UNFCCC (2018)²⁴ spotlights the importance of supporting developing countries to source, digest, and deploy climate technology solutions through technology development and transfer in advancing mitigation and adaptation actions amid rapidly exacerbating climate crisis. Against this backdrop, the programme has conceived its key profound concept: *‘technology transfer via a joint venture (JV) as a result of collaborative R&DB.’* Technology innovation is all about massive collaboration; the range and types of required resources are so extensive that it is unlikely that those wishing to innovate can achieve it alone, even if they are exceptionally strong in their own areas. Therefore, the programme suggests a collaborative R&DB (‘B’ stands for business) module – further advanced than the existing collaborative R&D or R&DD (‘D’ stands for demonstration) module, taking one step forward to embrace both business modelling and investing.

Addressing Double Sided Barriers on the Part of Both the ‘Receiver’ and the ‘Provider.’ The programme shall serve the five ASEAN member states to achieve a genuine paradigm shift towards low-emission and climate-resilient growth pathways, based on the premise that the right intervention addressing both demand and supply side barriers can ensure the realisation of technology transfer into emerging markets. In short, this transfer initiative pays special attention to the hurdles that global innovators of the relevant supply chain in industrialised economies face, in addition to those confronted by the five recipient countries. Recognising that motivation for technology transfer need exists on both sides – not only recipients but also providers, the programme will tackle the joint set of demand and supply barriers, which differentiates it from previous trials to move disruptive technologies into developing countries. Under the programme designed with four components, Components 1 and 4 address demand-side barriers while the remaining two components manage supply-side obstacles as follows:

²³ Supported by the Global Environment Facility (GEF) and implemented by the United Nations Industrial Development Organisation (UNIDO)

²⁴ UNFCCC. 2018. Climate Technology Incubators and Accelerators. Bonn: United Nations Framework Convention on Climate Change.

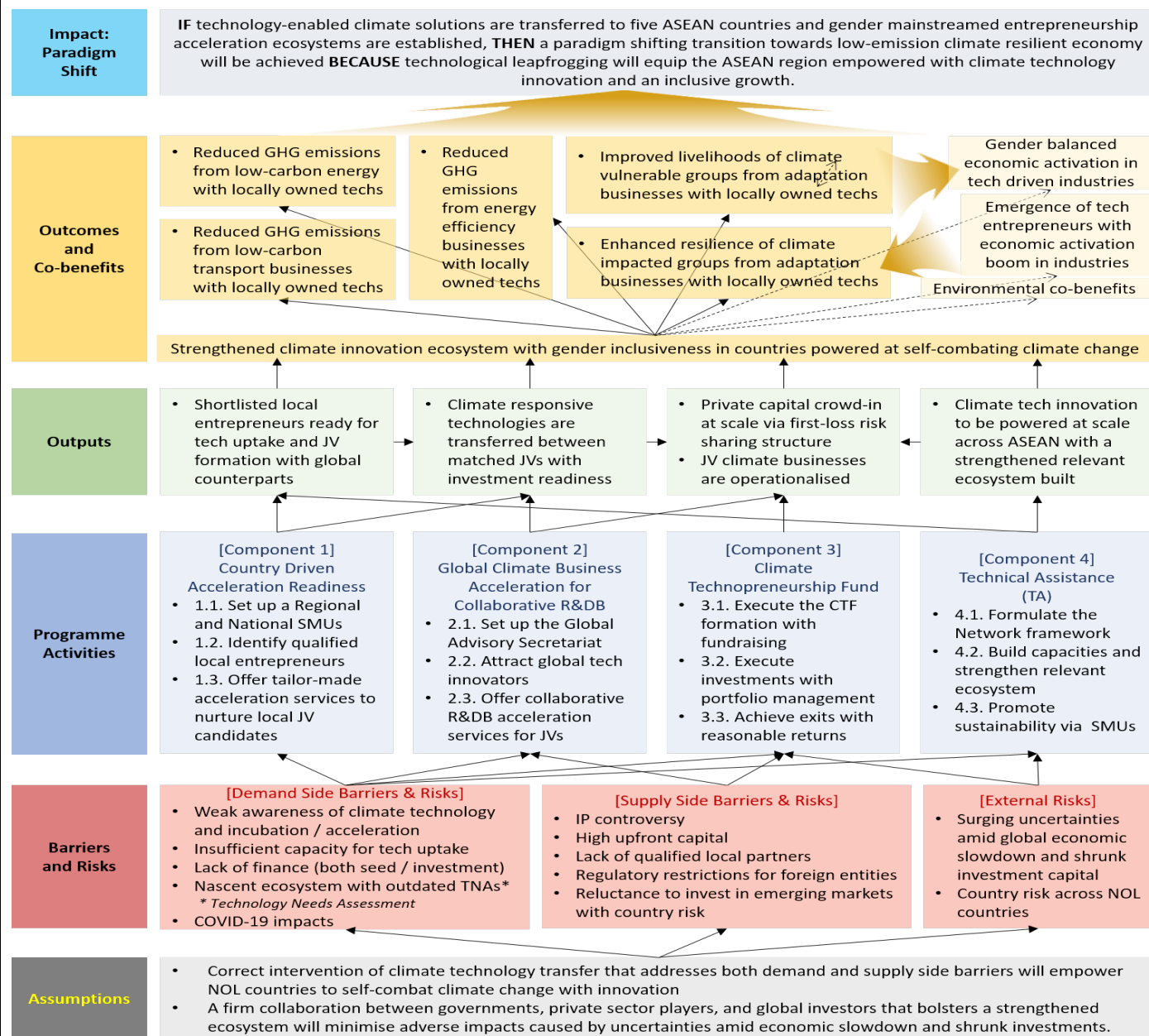
- (1) Components 1 and 4 shall address demand-side barriers of the five different countries with varying forms and depths of intervention as the severity, facets, and dynamics of such barriers differ between countries: e.g., from a complete impasse and near-total lack of an ecosystem to a massive surge of the market with new-found popularity. In a nutshell, under the same umbrella, all five partner countries will enjoy acceleration activities that best fit individual local contexts. In fact, the current, conventional model of acceleration is not suitable to the emerging market context as it was borne over the course of supporting ICT start-ups in Silicon Valley. The two components will devise and deploy customised acceleration modules for the recipients, and will do its best to integrate it into the local ecosystems once proven contextually workable.
- (2) Components 2 and 3 shall address supply-side barriers that have barred global technology providers, talented innovators, and private investors from carrying out technology-intensive transactions in emerging markets. Besides IP controversies prescribed in B1, there exist a plethora of barriers including, but not limited to, high upfront costs due to immature supply chains of a nascent market not integrated into the global trading system, difficulties in teaming up with the right local business partners like buyers, agents, distributors, and licensees, regulatory restrictions discriminating against foreign entities, and commercially supposed country risk factors.

Diversified Mitigation/Adaptation Potentials via Joint Venture (JV) Business Intervention that Leads Technological Leapfrogging in NOL Countries. Fitfully trained JVs will be supported throughout R&DB acceleration and patient capital injection to be able to deploy their business solutions equipped with climate responsive technologies. Over the course of the businesses being mature in market ecosystems to be nurtured with the TA intervention, their low-carbon and climate-resilient businesses will occupy a key space, be scaled, and eventually replace outdated rival businesses that feature emission-heavy, inefficient, and polluting technologies.

By immediately translating technology-based concepts and ideas into climate actions, JV businesses will accelerate a diffusion and stabilisation of the next generation of climate responsive technologies so that the transferred technologies will soon become competitive in individual markets, thereby moving straight towards reaching NDC and relevant climate goals. Meanwhile, the NOL countries will see a gender mainstreamed entrepreneurship ecosystem with a surging technologically skilled, capable, and passionate female entrepreneurs and women-led SMEs as the key innovation agency that will propel bright climate solutions after mainstreaming transferred technologies and applying them into locally customised businesses.

Case-specific ToC Scenarios on What Paradigm Shifting Changes to be Derived from JV Business Deployment and its Consequences. The programme will see newly created JVs with investment readiness to implement climate-technology enabled projects (Output of ToC) that will bring about mitigation and adaptation outcomes in a society with an emergence of female talents (Outcomes with Co-benefits of ToC), which will lead to a paradigm shifting innovation in the climate responsive entrepreneurial ecosystem of the five countries (Impacts of ToC). Case-specific ToC scenarios assume exemplary cases as below.

Theory of Change (ToC)



ToC Scenario 1: Post-harvest Processing Agro-Tech for Cambodia's Food Security

Impacts	Agro processing tech innovation will empower Cambodia to obtain climate resiliency in agriculture, leading the national leapfrogging in the global agricultural supply chain.	
▲		
Outcomes & Co-benefits	Enhanced capacity of food security in climate vulnerable agricultural areas with engagement of female talents throughout the processing supply chain	
▲		
Outputs	JV's agro-processing business deployment with local farmers' tech literacy enhancement	
▲		
Activities	Newly created agro-tech JV with investment readiness after acceleration services	
▲		
Barriers	[Demand side barriers] Weak technology capacity of post-harvest processing, systemic barriers in O&M, high	[Supply side barriers] High upfront capital burden and regulatory restrictions for foreign entities, lack of

	upfront costs for local farmers, COVID-19 impacts, etc.	qualified local partners, reluctance to invest in nascent agro-processing market
▲		
Rationale for Intervention	JV intervention that addresses demand and supply side barriers will empower Cambodia to self-combat low productivity and food insecurity caused by shifting climate and heat waves.	

ToC Scenario 2: AI-based Epidemic Warning Tech for the Philippines' Climate Resilient Healthcare

Impacts	AI-applied tech innovation will empower the Philippines to timely control epidemic disasters and obtain climate-resilient healthcare management system.	
▲		
Outcomes & Co-benefits	Enhanced capacity of tracking and managing infectious diseases with remedy actions in climate vulnerable areas with an emergence of female technicians and engineers.	
▲		
Outputs	JV's business deployment with localised big data analyses and diseases tracking software	
▲		
Activities	Newly created AI-tech JV with investment readiness after acceleration services	
▲		
Barriers	[Demand side barriers] Lack of access to relevant technology sources, high upfront costs, COVID-19 impacts intertwined with climate effects, etc.	[Supply side barriers] Regulatory ownership / investment restrictions for foreign entities, lack of qualified local partners, IP controversy, etc.
▲		
Rationale for Intervention	JV intervention that addresses demand and supply side barriers will empower the Philippines to self-combat uncontrollable spread of infectious diseases deteriorated by climate impacts.	

ToC Scenario 3: Clean/Economic Ocean Energy Technology for Vietnam's Energy Transition

Impacts	Clean ocean energy innovation will empower Vietnam to initiate low-carbon energy transition.	
▲		
Outcomes & Co-benefits	Reduced emissions (ca. 2.9 kt) with an increased access to electricity in isolated areas with engagement of female talents throughout the energy generation and transmission process	
▲		
Outputs	JV's clean and economic wave energy deployment in isolated rural areas	
▲		
Activities	Newly created wave energy tech JV with investment readiness after acceleration services	
▲		
Barriers	[Demand side barriers]	[Supply side barriers]
	Lack of awareness on technology amongst local stakeholders, high upfront costs	High upfront capital and commercial funding gap, lack of qualified local partners
▲		
Rationale for Intervention	JV business intervention that addresses demand and supply side barriers will empower Vietnam to increase access to electricity in remote areas with energy transition.	

ToC Scenario 4: 4D Drone Control Platform for Laos' Climate Resilient Land Management

Impacts	Land management innovation will lead Laos into a leapfrogging move towards climate resiliency of the forestry sector and its vulnerable communities.
▲	
Outcomes & Co-benefits	Systemic land management and agricultural livelihoods improvement with active participation of women in vulnerable mountainous areas

▲		
Outputs	JV's cloud-based intelligent 4D ground control platform business that implements the mapping, real-time monitoring operation of drones in climate-damaged land areas	
▲		
Activities	Newly created 4D tech JV with investment readiness after acceleration services	
▲		
Barriers	[Demand side barriers] Lack of qualified local entities for technology uptake, high upfront costs for the vulnerable	[Supply side barriers] Lack of qualified local partners, nascent relevant innovation ecosystem
▲		
Rationale for Intervention	JV intervention that addresses demand and supply side barriers will empower Laos to self-combat against agricultural losses, caused by climate induced extreme weather events, on which over 75% of the total population relies for livelihoods.	

ToC Scenario 5: Industrial Energy Efficiency for Indonesia's Leap of Low-carbon Growth

Impacts	Energy efficiency innovation will empower Indonesia to make a leap of a low-carbon advancement, leading the national leapfrogging in the post-pandemic economic growth.	
▲		
Outcomes & Co-benefits	Reduced emissions across industries equipped with energy efficient equipment and technologies with engagement of female engineers and technicians in the market	
▲		
Outputs	JV's energy efficiency business deployment throughout the industrial manufacturing process	
▲		
Activities	Newly created agro-tech JV with investment readiness after acceleration services	
▲		
Barriers	[Demand side barriers] Lack of willingness for local stakeholders under no incentive measures, lack of energy efficiency finance, high upfront costs, etc.	[Supply side barriers] Reluctance to entre the nascent market, upfront capital burden and regulatory restrictions for foreign entities, etc.
▲		
Rationale for Intervention	JV intervention that addresses demand and supply side barriers will empower Indonesia to self-combat long delayed energy efficiency initiation without any successful precedents.	

B.2 (b). Outcome mapping to GCF results areas and co-benefit categorization

Outcome Mapping to GCF Result Areas with the Investment Portfolio Scenario Equipped with Robust Investment Criteria in terms of Eligibility and Selection. The CTF considers investment opportunities in five (5) result areas under a programmatic approach taken with a strong set of investment criteria at stages of eligibility screening and beneficiary selection. In that technologies, companies, and sub projects are not identified yet, all the five result areas are marked.

Outcome number	GCF Mitigation Results Area (MRA 1-4)				GCF Adaptation Results Area (ARA 1-4)			
	MRA 1 Energy generation and access	MRA 2 Low-emission transport	MRA 3 Building, cities, industries, appliances	MRA 4 Forestry and land use	ARA 1 Most vulnerable people and communities	ARA 2 Health, well-being, food and water security	ARA 3 Infrastructure and built environment	ARA 4 Ecosystems and ecosystem services

High level Outcome (Strengthened climate innovation ecosystem with gender inclusiveness in countries powered at self-combating climate change)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second level Outcome 1 (Mitigation from low-carbon energy with locally owned technologies)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second level Outcome 2 (Mitigation from low-carbon transport businesses with locally owned technologies)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second level Outcome 3 (Mitigation from energy efficiency with locally owned technologies)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second level Outcome 4 (Improved livelihoods of climate vulnerable groups from adaptation actions with locally owned technologies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Second level Outcome 5 (Enhanced resilience of climate impacted groups from adaptation businesses with locally owned technologies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ex-ante Prediction of Co-benefits with Scenario-based Evidence. The programme predicts that the five ASEAN members will enjoy variety of co-benefits, apart from adaptation and mitigation outcomes. For instance, energy efficient industrial processing technologies may align with co-benefits in environmental (less air pollution), gender sensitive (gender balance by employing female engineers and technicians) and economic and industrial (economic activation across climate and green growth sectors) areas.

Co-benefit Number	Environm't	Social	Economic	Gender	Adaptation	Mitigation
Gender balanced economic activation in tech driven industries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The emergence of tech entrepreneurs with economic activation boom in industries	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental co-benefits	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B.3. Project/programme description (max. 2500 words, approximately 5 pages)

Designing the Programme that Addresses Both Demand and Supply Side Barriers to Empower the ASEAN Community via Climate Technology Transfer and Innovation Acceleration. The programme shall address the systemic process of climate technology innovation that underpins a range of interacting actors with business accelerators anchored. It is structured with four different components using a two-tiered approach: locally driven (related to demand side barriers) and globally inspired (related to supply side barriers). Individual components and activities will closely function in order to reinforce synergies by bridging the gaps which have kept the five countries from a much-needed innovation leap.

Designing Barriers-based Activities

Pressing Barriers to be Addressed	Activities as Solutions
<ul style="list-style-type: none"> Scattered small-scale international/national start-up support trials that are mostly grant based one-off events without an inter-ministerial level policy and regulatory engagement 	<ul style="list-style-type: none"> (Activity 1.1) Set up a National Sustainability Management Unit (SMU) that hold the Steering Committee with the government level engagement
<ul style="list-style-type: none"> Limited awareness of climate technology, entrepreneurship and business acceleration with an unbalanced access to existing market opportunities by gender and others (geography, socio-economic status, language, etc.) 	<ul style="list-style-type: none"> (Activity 1.2) Launch contextually fit sourcing strategies to identify qualified local JV candidates with a gender focus (e.g., recruiting female students via partnership with academic institutions)
<ul style="list-style-type: none"> Lack of qualified entrepreneurs with climate responsive technology uptake capacity (tech digestion capabilities, transparent IP trade concept, communication skills) 	<ul style="list-style-type: none"> (Activity 1.3) Offer tailor-made acceleration readiness services to nurture local JV candidates ready to partner with global tech entrepreneurs
<ul style="list-style-type: none"> Lack of climate tech-supportive sophisticated acceleration infrastructure in a local space: esp. ASEAN-fit (emerging/developing market-fit) business accelerators versed in climate 	<ul style="list-style-type: none"> (Activity 2.1) Set up the Global Acceleration Advisory Secretariat in partnership with global accelerators of various business areas
<ul style="list-style-type: none"> Few global tech companies willing to entre risky developing markets Difficulties to identify qualified local partners under a fair standard competition format 	<ul style="list-style-type: none"> (Activity 2.2) Launch global sourcing strategies to attract global technology innovators and match them with trained/qualified local entrepreneurs
<ul style="list-style-type: none"> Expensive foreign technologies IP controversy High upfront costs in a nascent market Lack of locally customised tech-driven R&D and business acceleration opportunities 	<ul style="list-style-type: none"> (Activity 2.3) Support JV teams' technology transfer and business modelling in a legally permitted way through provision of gender-mainstreamed collaborative R&DB acceleration services
<ul style="list-style-type: none"> Deficit of the government budget assigned for climate actions and tech entrepreneurship Shrunk climate investments amid economic slowdown, market fluctuations 	<ul style="list-style-type: none"> (Activity 3.1) Set up and execute an investment fund with attracting and raising investment capital on a global scale
<ul style="list-style-type: none"> Oversaturated, scattered small-scale grant based early-stage support schemes without continuing later stage investments Lack of risk-taking equity capital in ASEAN 	<ul style="list-style-type: none"> (Activity 3.2) Execute equity investments with strategic portfolio management as per investment criteria incl. gender mainstreaming
<ul style="list-style-type: none"> Few NOL countries have experienced exit achievements while their markets are nascent or almost non-existent. 	<ul style="list-style-type: none"> (Activity 3.3) Design detailed exit strategies and achieve exits with a reasonable rate of return
<ul style="list-style-type: none"> Scattered similar programmes have been completed, without any follow-up actions amongst local ecosystem stakeholders 	<ul style="list-style-type: none"> (Activity 4.1) Formulate the best workable local ecosystem network framework

<ul style="list-style-type: none"> Lack of enabling innovation ecosystem, including a weak regulatory framework and skilled climate business accelerators 	<ul style="list-style-type: none"> (Activity 4.2) Build capacities to enable and strengthen the relevant ecosystem stakeholders, including national climate tech-focused accelerators
<ul style="list-style-type: none"> Disregarded/discontinued sustainability in one-off grant trials after international/national investment exits 	<ul style="list-style-type: none"> (Activity 4.3) Promote sustainability via the locally-owned SMU operation

Programme Framework by Output, Component, Activity, and Sub-activity. Maintaining a structural cohesion of the general programme framework (below table), country-specific programme details are developed to meet country-specific needs and gaps identified by feasibility studies and a series of consultations during the designing stage.

Output 1. Country Driven Shortlist of Local JV Candidates Ready for Climate Technology Uptake
Component 1. Country Driven Acceleration Readiness
<ul style="list-style-type: none"> Activity 1.1. Set up a Regional and National Sustainability Management Unit (SMU) <ul style="list-style-type: none"> Sub-Activity 1.1.1. Set up a Regional SMU in GGGI HQ Sub-Activity 1.1.2. Set up a National SMU in each country Activity 1.2. Launch sourcing strategies to identify qualified local JV candidates <ul style="list-style-type: none"> Sub-Activity 1.2.1. Develop a robust sourcing strategy Sub-Activity 1.2.2. Prepare necessary platforms and materials for sourcing JV candidates Sub-Activity 1.2.3. Launch outreach activities Sub-Activity 1.2.4. Narrow down the pool of local JV candidates for acceleration readiness Activity 1.3. Offer tailor-made acceleration services to nurture local JV candidates <ul style="list-style-type: none"> Sub-Activity 1.3.1. Design the National Climate Entrepreneur Accelerator Programme (N-CEAPs) Sub-Activity 1.3.2. Train selected candidates for acceleration readiness Sub-Activity 1.3.3. Organise a competition to shortlist JV candidates for global acceleration
Output 2. Climate Technology Transfer between Global-ASEAN JVs with Investment Readiness
Component 2. Global Acceleration for Collaborative R&DB (R&D + Business)
<ul style="list-style-type: none"> Activity 2.1. Set up the Global Acceleration Advisory Secretariat <ul style="list-style-type: none"> Sub-Activity 2.1.1. Implement the global component with necessary logistics Sub-Activity 2.1.2. Manage multi-dimensional stakeholder communication Sub-Activity 2.1.3. Conduct regular M&E and reporting to KDB Activity 2.2. Launch global sourcing strategies to attract global technology innovators <ul style="list-style-type: none"> Sub-Activity 2.2.1. Establish a Global-ASEAN pool of global technology innovators Sub-Activity 2.2.2. Assess the suitability and feasibility of global technology innovators Sub-Activity 2.2.3. Select the finalists for Global-ASEAN technology transfer Activity 2.3. Offer collaborative R&DB acceleration services for JVs <ul style="list-style-type: none"> Sub-Activity 2.3.1. Perform diagnostic analyses on participating JV candidates Sub-Activity 2.3.2. Offer tailor-made acceleration services for JV candidates Sub-Activity 2.3.3. Achieve Global-ASEAN technology transfer with best fit mechanisms Sub-Activity 2.3.4. Support investment attraction
Output 3. Climate Technopreneurship Fund (CTF) with Private Capital Crowd-in
Component 3. Climate Technopreneurship Fund (CTF)
<ul style="list-style-type: none"> Activity 3.1. Execute the CTF formation with raising investment capital

- Sub-Activity 3.1.1. Establish the fund vehicle and related entities
- Sub-Activity 3.1.2. Close the GCF into the CTF
- Sub-Activity 3.1.3. Fundraise private investment capital
• Activity 3.2. Execute investments with portfolio management as per investment criteria
- Sub-Activity 3.2.1. Perform due diligence on proposed businesses
- Sub-Activity 3.2.2. Build, revise, and manage investment portfolios
- Sub-Activity 3.2.3. Monitor performance of portfolio companies with structured support
- Sub-Activity 3.2.4. Conduct regular reporting to KDB
• Activity 3.3. Achieve successful exits with a reasonable rate of return
- Sub-Activity 3.3.1. Realise exits after assessment on appropriate exit methods
- Sub-Activity 3.3.2. Distribute proceeds and returns
- Sub-Activity 3.3.3. Terminate the CTF
- Sub-Activity 3.3.4. Perform the fund's post-exit obligations
Output 4. Climate Technopreneurship to be Powered at Scale under Strengthened Ecosystem
Component 4. Technical Assistance (TA)
• Activity 4.1. Formulate the best workable network framework
- Sub-Activity 4.1.1. Promote national networks for climate technology innovation
- Sub-Activity 4.1.2. Develop a communication hub with knowledge sharing activities
• Activity 4.2. Build capacities to enable and strengthen the relevant ecosystem
- Sub-Activity 4.2.1. Build capacities of national accelerators to sustain N-CEAPs (1.3.1)
- Sub-Activity 4.2.2. Establish the national strategy on climate technopreneurship promotion
- Sub-Activity 4.2.3. Offer regulatory and policy recommendations
• Activity 4.3. Promote sustainability via the National SMUs
- Sub-Activity 4.3.1. Develop a detailed M&E implementation plan
- Sub-Activity 4.3.2. Conduct regular reporting to KDB
- Sub-Activity 4.3.3. Support ex-post impact assessments
- Sub-Activity 4.3.4. Coordinate with the Regional SMU and the Acceleration Secretariat

Component 1 – A Starting Point for NOL Countries to be the Climate Tech Capacitated Agent. The first component is this climate technology transfer initiative's starting point that sources promising local entrepreneurs and accelerate their capacity so that they could be equipped with the proper awareness and readiness to collaborate with global technology providers in Component 2. In particular, sourced and shortlisted local companies will be supported in order to satisfy the National Climate Entrepreneur Accelerator Programme (N-CEAP) Investment Criteria that requires qualifications NOL countries' local entities are not able to be equipped.

N-CEAP Investment Criteria for Local Entrepreneurs

	Criteria	Description
	Eligibility Criteria	
	<i>(Local Entrepreneurs to be Screened Out if not Relevant or Satisfied)</i>	
1	Locally Owned Entities	<ul style="list-style-type: none"> Entrepreneurs with valid business registration in NOL countries; or Entrepreneurs with recommendation from the National SMU Project Steering Committee (composed by representatives from GCF NDAs and line ministries in NOL countries) <p>✓ <i>As a result of local consultation, in case that a vulnerable NOL country needs transfer of certain climate technologies but does not have qualified local entrepreneurs, the SMU Project Steering</i></p>

		<i>Committee may consider a setup of a local subsidiary of global technology firms which must be registered as a local company with local employees in NOL countries.</i>
2	Country Owned Tech Prioritisation	<ul style="list-style-type: none"> Initial categorisation as per Seven (7) Technology Groups; or Country fitness of a proposed technology to be confirmed by the SMU Project Steering Committee (composed by representatives from GCF NDAs and line ministries in NOL countries)
3	E&S Safeguards (ESS)	<ul style="list-style-type: none"> [Initial Negative Screening on E&S Risk] Local entrepreneurs who consider a business defined in IFC Exclusion List and/or a business with adverse impacts on indigenous peoples are NOT eligible.
4	IP Rights Protection	<ul style="list-style-type: none"> Applicant entrepreneurs' commitments to transparent technology uptake under the global level UNFCCC initiative that values IP rights shall be legally binding under confirmation of the National SMU Project Steering Committee (composed by representatives from GCF NDAs and line ministries in NOL countries)
	Selection Criteria <i>(Scoring-based Assessment for Admission to N-CEAP)</i>	
5	Technology Uptake Capacity	<ul style="list-style-type: none"> Local entrepreneurs deemed to have capacity for foreign technology uptake and digestion in terms of staffing expertise – a minimum level of relevant technical/engineering expertise (1st Round) To be assessed by the Technical Advisory (2nd Round) To be assessed by the GP team via the Regional SMU
6	Gender Mainstreaming	<ul style="list-style-type: none"> [Screening via Gender Profiling Form] Women-led SME candidates shall be prioritised for selection. <ul style="list-style-type: none"> SMEs with at least 26% of the total capital owned by women; SMEs with at least one woman participates in the Board of Directors and/or different types of boards or internal committees such as ESG committees, among others (CEO, COO, CTO, etc.); and/or SMEs with more than 30% of the total workforce are females. To be consulted and assessed by gender experts of the SMU, based on Gender Profiling Form (Appendix 2 of Annex 8)
7	Funding Contribution	<ul style="list-style-type: none"> [Co-investment Potential] Selection priority given to local entrepreneurs with investment capacity and/or willingness

NOL Country-specific Business Acceleration Provision in Component 1. This first component distinctively optimises specific contents of the National Climate Entrepreneur Accelerator Programme (N-CEAP) in each country while maintaining consistency in terms of an integrated goal and the overall structure. Under the general programme framework (above table), the detailed nature of sub-activities will vary across the five different countries: potentially even within a single country as per the needs and gaps of individual beneficiary firms. Consequently, all NOL countries will benefit from the N-CEAP, though the support structure may look like different across the different five countries. Assumed country-specific uniqueness is as follows (further detailed in Annex 2) and such uniqueness will be mainstreamed in N-CEAP elements.

- Cambodia** – Given its crowded local incubation landscape, the Cambodian leg of the programme will focus on later-stage acceleration and JV readiness. The Cambodian SMU will partner with existing local associations and partners, including Cambodia Investment Club, Cambodia Women Entrepreneurs Association, Platform Impact, Young Entrepreneurs Association, UNIDO, and

others to identify a pipeline of investable entrepreneurs and provide Cambodia's own N-CEAP courses to be climate tech-driven JV ready. In brief, Component 1 will pay particular attention to opportunities for technology transfer through subsidiaries and licensing, while Component 4 will strengthen the enabling environment for more local innovation.

- **Indonesia** – The Indonesian SMU will be set up in collaboration with the relevant Government of Indonesia's agency or ministry, consisting of the GGGI implementing team and representatives of the host ministry. The SMU will implement inclusive communication and outreach strategies that effectively attract qualified technology entrepreneurs with high changes to form JVs with global innovators. In particular, GGGI Indonesian team aims to shortlist at least five potential climate technopreneurs for global partnership.
- **Laos** – Given a very nascent nature of the relevant ecosystem, the Lao leg of the programme seeks for establishing the 'Lao National Climate Entrepreneurship Network' under the aegis of the Young Entrepreneurs Association of Laos. Strongly supported by the Ministry of Natural Resources and Environment, GCF NDA, in partnership with Lao National Chamber of Commerce and Industry (LNCCCI), the Lao SMU is expected to widely disseminate the calls for application and reach ca. 300 local firms in relevant industries.
- **Philippines** – Given that the Philippines has a wide pool of active local and international climate experts in the market, those potential mentors will be consulted for the N-CEAP design to ensure it necessary for addressing climate related issues on the ground. The Philippines' leg of the programme will mainly support both technology-based start-ups and social enterprises under Component 1, while strengthening local ecosystem stakeholders' capacity centred around the Philippine Businesses for Climate Impact Network under Component 4.
- **Vietnam** – Given quite a number of growing young entrepreneurs who recognise a desperate need of foreign technologies but cannot afford to buy due to realistic hurdles, which is different from situations of other participating countries in a severe vulnerability, the programme will proceed with competitive selection processes in order to identify qualified local players who could uptake transferred technologies from global peers after 3-6 months' N-CEAP provision and an advanced round of investor pitch.

Component 2 – Best Available Business Acceleration from a Global Team with Multi-Expertise. The second component aims to source and train global innovators and technology providers as per Acceleration Investment Criteria (see below), facilitate adequate partnership models to be established by matching between local entrepreneurs (N-CEAP graduates, i.e., domestically nominated as a result of N-CEAP under Component 1) and sourced global innovators, and to eventually achieve climate-responsive technology transfer by translating fit technology solutions into shovel-ready businesses of the matched teams.

Acceleration Investment Criteria for Global Entrepreneurs

	Criteria	Description
	Eligibility Criteria <i>(Global Entrepreneurs to be Screened Red if not Relevant or Satisfied)</i>	
1	Awareness of the Programme Mandate	<ul style="list-style-type: none"> Global innovators must be aware of the fundamental programme mandate that climate (responsive) technologies are to be applied for business deployment across the five (5) NOL countries, in alignment with the five (5) GCF Result Areas <ol style="list-style-type: none"> (1) M1. Energy generation and access (2) M2. Low-emission transport (3) M3. Buildings, cities, industries and appliances (4) A1. Most vulnerable people and communities

		(5) A2. Health and well-being, and food and water security
2	Climate Technology	<ul style="list-style-type: none"> A global entrepreneur must have an acknowledged qualification (e.g., intellectual property [IP] on a proposed technology) to have and trade a climate (responsive) technology.
3	Country Owned Tech Prioritisation	<ul style="list-style-type: none"> To be screened by Seven (7) Prioritised Technology Groups; or NOL countries' urgent need of a proposed technology should be proven, in case of a proposed technology not included in the Technology Groups – to be confirmed and approved by the National SMU Project Steering Committee (composed by representatives from GCF NDAs and line ministries in NOL countries)
4	Technology Transfer	<ul style="list-style-type: none"> A proposal on technology transfer mechanism to be submitted to the Acceleration Secretariat for Global Acceleration, with acceptance on climate (responsive) technology to be transferred in legally permitted manners under compliance with a standard IP trade format
5	E&S Safeguards (ESS)	<ul style="list-style-type: none"> [Secondary Negative Screening on E&S Risk] Global entrepreneurs who consider a business defined in IFC Exclusion List and/or a business with adverse impacts on indigenous peoples are NOT eligible. Global entrepreneurs whose ESG policy and ESMS are existent but not aligned with the CTF E&S Safeguard Policy are recommended to adopt a common approach on the ESMS for their JV entities that will carry out the CTF activities. If candidates are equipped with their own (or stricter) strategies, theirs would be evaluated as per ESS/Gender compliance.
Selection Criteria <i>(Scoring Based Assessment for Admission to Global Acceleration)</i>		
6	Local Partnership	<ul style="list-style-type: none"> Partnership with N-CEAP graduates from Component 1; Partnership with local entrepreneurs (non N-CEAP graduates) – need to be approved by the National SMU Project Steering Committee (composed by representatives from GCF NDAs and line ministries in NOL countries); or Commitment to partnership with local entrepreneurs (if technologies are urgently needed amid lack of local peers) – need to be approved by the National SMU Project Steering Committee (composed by representatives from GCF NDAs and line ministries in NOL countries)
7	Gender Mainstreaming	<ul style="list-style-type: none"> [Gender Mainstreaming Readiness Check] Scoring-based assessment on a global applicant's gender balanced appealing points, in addition to Gender Mainstreaming Commitment Plan (GMCP), upon request from international gender experts from Gaia Consult Inc. that includes, among others: <ul style="list-style-type: none"> Set specific employment and esp. high-value skill training targets of women and girls with concrete timeline Reflect gender inclusiveness in the design/business plans of the JV team (along through the process of climate technology R&DB acceleration): e.g., recruiting female talents intentionally with a certain target to be active agents of the enterprises and/or internationally targeting female population as major beneficiaries
8	Funding Contribution	<ul style="list-style-type: none"> [Co-investment Potential]

		Selection priority given to global entrepreneurs with investment capacity and/or willingness
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In order to support ASEAN-global teams to satisfy the Acceleration Investment Criteria above, the programme will deliver on collaborative R&DB activities overall as below.

(1) [Sourcing and Shortlisting of Global Technology Providers with Climate Responsive Solutions]

By leveraging the global innovation network consisting of VCs, accelerators, and other start-up support intermediaries with global presence, NHIS (as Executing Entity of Component 2) will launch a call for proposals to source tech-based businesses (start-ups, SMEs, etc.) in countries with advanced climate responsive ecosystems, including, but not limited to, Canada, Singapore, Denmark, Finland, the Netherlands, the US, and the UK. Global tech innovators in climate space will be sourced to engage in the programme to scale up their impactful technologies to flow into the five emerging ASEAN markets. The global JV candidates will be shortlisted upon a series of diagnostic assessment on the technological suitability, market viability and scalability potential (both in terms of technology fitness and climate outcomes) by the GP team.

(2) [Tailor-made Consultation and Guidance on Business Strategy]

With shortlisted global teams on board, a series of tailor-made consultation sessions will take place, to gauge and further assess the feasibility of technologies by closely examining risk factors, business projections and technology transfer capacity. Such baseline analysis will provide a solid ground for the GP to consistently keep track of back-to-back support provided to the companies.

Such consultation will also aim to help shape the go-to-market strategies of global tech providers by offering deep-dive sessions on respective local markets of the five NOL countries, including on-site, preliminary proof of concept (PoC) activities, local network building and setting up milestones on business expansion. Through this process, each team will have strategised measures to secure local business licenses and patents as well as plans on potential JV creation and entailed actions, while their business models with identified viable technologies will be confirmed, primed for proposing to local companies with technology needs subject to the JV establishment.

(3) [ASEAN Market Entry Readiness Training & PoC Support]

Based on previous consultation sessions validating core climate (responsive) technology as well as touching upon business strategies for scaling up, the global climate tech innovators will be provided with a series of activities enhancing their readiness for the ASEAN market. Training on prerequisites and associated procedural measures will be given, in conjunction with reviewing the general business ecosystem of the target NOL countries. Furthermore, similar practices that involve overseas market entry via technology transfer scheme will be analysed and reviewed as a benchmark, allowing the teams to examine potential issues in business expansion.

Upon formulating tailor-made market entry strategies, the programme aims to leverage local networks of extensive relevant stakeholders and partners, particularly state agencies, to facilitate substantial discussions on local business licenses and cooperation with local business ecosystems, in a close partnership and intensive discussions with the Regional SMU under KDB guidance.

(4) [Technology Transfer Modalities and Business Development]

With the global climate tech innovators identified, accelerated and ready to expand into the target NOL countries, a series of business matching consultations will take place, to undertake a genuine technology transfer through bespoke schemes: i.e., JV partnership (onshore target set-up as a

locally registered JV between a local company and a global climate technology company contributing its technology transfer or asset including both cash and in-kind); and/or technology licensing agreement (late-stage, onshore target licensing climate technology from a global firm upon investment). In addition to aforementioned schemes, consulting sessions for enabling a genuine technology transfer through other likely recommended business models are to be offered as well in a close communication and intensive discussions with the Regional SMU under KDB guidance, following similar procedures involving feasibility studies on business and technology: e.g., local company under the concept of South-South Cooperation (onshore business with climate technology on its own, with no need for additional technology sourcing/licensing; rather, capable of enabling potential technology transfer as the transmitter amongst NOL countries).

In order to assess compatibility between the two partners, the matching arrangements between global and local entities will first entail feasibility studies covering business plan, profitability, financial projection and exit strategy. Furthermore, aside from a business perspective, technical aspects will be looked into, which an aim to review the potential commercialisation of respective climate tech-driven solutions.

(5) [Consultation on Climate Advisory and E&S/Gender Safeguards]

In order to align each business model with viable climate outcomes, a professional climate advisory firm will be engaged to provide businesses with adequate guidance and framework on capturing climate outcomes via Project Selection Tool based on GCF Additionality and Innovation Tool (AIT). Moreover, analysis on the environmental and social (E&S) impacts borne out of such technology transfer models will also be conducted to allow the businesses to better incorporate E&S/Gender related factors into their operation and monitoring of supply chains.

(6) [Investment Attraction and Facilitation Support]

Upon the set-up of technology transfer in local-global partnership formats, the programme will offer dedicated support to the selected businesses on attracting investment by not only sharpening their IR resources but also providing consultation to rebuild business strategies considering the investor-oriented approach. Moreover, aiming for a seamless integration into respective local markets, if necessary, the teams will further be mentored by global and local accelerators and venture capitals to strengthen the market linkage and build relationships for potential investment in the future.

In parallel with such support given to the businesses, the GP and local partner entities of Component 2 will host a periodic VC/investors' roundtable and networking session to highlight the accelerated teams' potential and expand the network of climate tech-driven investment space. As part of support, a regional demo day to a targeted audience of investors and industry stakeholders at both global and regional levels will take place to showcase the innovations and discuss the way forward.

Component 2 as the Channel of Global Innovators' Joining Climate Action. The kernel of the second component is to invite global companies that have not paid attention to the UNFCCC/GCF strategic goals that much, reframe their technology capacity as per above listed business acceleration services, and support them to be ready to contribute to climate action as per Acceleration and CTF Investment Criteria, including but not limited to strict E&S, gender, IP risk resolution requirements, thereby unlocking their climate responsive tech expertise fit to the target NOL countries. For this, the NHIS centred at the Team NH (see Section B for NH Financial Group's group-wide commitment for the programme success) will tap investment opportunities in partnership with more than 100 global VC/PE/AC partners in Singapore, the US, Switzerland, Japan, Australia, Thailand, and so on. Once proper global innovators identified, the second component will support them to be ready to satisfy the Acceleration Investment Criteria below and eventually CTF Investment Criteria.

ASEAN-fit Global Acceleration Teams to be Optimised with Kernel Professionals in Component 2.

A global acceleration team with a diverse array of expertise, including IP and patent, accounting, tax, law, financial modelling, technology valuation, marketing, fundraising, investment, business mentoring, E&S risk management, and gender mainstreaming, will be organised to offer collaborative R&DB consulting services that are customised as per partnership and nature of technology. In a nutshell, agile and project-based acceleration teams will be optimised with kernel professionals who have the expertise each business needs – i.e., Collaborative R&DB acceleration services to be co-designed and/or operated with chartered patent agents, professional accelerators, university-based R&D centres, and consulting firms – to validate the sustainability of each team's core business model pertaining to climate outcomes, and to deliver on its mission.

In order to build its expansive relationship with global stakeholders nurturing and advancing innovation ecosystems, the programme, specifically NHIS, as Executing Entity of Component 2, shall make proactive collaborations with global acceleration partners with different expertise and focus areas that are proven capable of fostering acceleration in the climate technology space, for instance (see below), under engagement partnership. With the multi-disciplinary team on board, Component 2 shall proceed with sourcing talented global innovations, match-making with technology deployable local companies, training JVs to devise technology-enabled climate solutions, enabling selected forward-looking businesses to advance their scalable capabilities in five emerging markets, and finally reaching a commercialisation milestone, leading up to the investment phase of Component 3. This would allow the businesses to finalise their mid- to long-term business plans tailored to the local settings.

Component 3 – Climate Technopreneurship Fund (CTF) with GCF Catalytic First-loss Equity Capital under the Risk-Adjusted Investment Framework. Component 3 is the very core of this programme that establishes an investment fund of USD 200 million, *CTF*, with the GCF anchor investment, and finances graduates from Component 2 that have proven climate technology applied businesses most suitable to individual local contexts. The CTF shall support JVs or other forms of entities that execute relevant technology transfer into NOL countries to grow as small and medium sized enterprises (SMEs) to expand climate responsive businesses while addressing a missing middle corporate structure caused by a wide gap between large and micro, mostly informal, enterprises in the five countries.

The CTF adopts a risk-adjusted investment framework to cover varying risks that arise from diverse portfolio companies in multiple NOL countries. Direct capital injection is the default mode of investment but, if needed, additional layer of a special purpose vehicle (SPV) may be structured to accommodate categorised risks such as tax/regulatory restrictions on foreign direct investment and entry/exist convenience. The SPV differentiates itself from a BAU Fund of Funds (FoF) that is an expensive vehicle investing in other hedge funds. Given that the programme pays attention to a challenging reality that levels of acceptable risk and capital configuration ratio differ country by country, even amongst industries within a single country, thereby necessitating deal-by-deal adjustments via navigating, calculating, and managing associated risks. Additionally, the configuration of debt and equity within a project can vary; setting full-equity investments as a default, a project with a higher risk may be structured with an 80/20 debt-equity configuration, while a lower-risk project may require a 50/50 debt-equity configuration.

It shall deal with the problematic finding of existing and/or similar initiatives that most graduates from initiatives with one-off seed grants have failed to attract further investment capital and progress to more advanced stages. In recognition of the finding, the fund shall invest in JVs or other forms of entities that execute relevant technology transfer into NOL countries as per CTF Investment Criteria (see below) in case barriers bar the JV model and prevent from achieving the programme objectives. Only applicants

whose readiness and business fitness have been validated by the GP as per investment criteria below can benefit from the CTF's capital.

CTF Investment Criteria

	Criteria	Description
	Eligibility Criteria <i>(Local-Global Partnership to be Screened Out if not Relevant or Satisfied)</i>	
1	GCF Mandate	<ul style="list-style-type: none"> [Alignment with the GCF Result Areas] An applicant must propose a business that is classified into (at least) one of the chosen GCF's five (5) result areas. (1) M1. Energy generation and access (2) M2. Low-emission transport (3) M3. Buildings, cities, industries and appliances (4) A1. Most vulnerable people and communities (5) A2. Health and well-being, and food and water security Applicants must demonstrate their level of climate impact within the GCF result areas
2	NOL Countries' Technology Needs	<ul style="list-style-type: none"> A proposed climate responsive tech-driven business must respond to NOL countries' technology needs in response to climate change. To be screened by Priority Technologies by Result Areas with Specific Level of Needs in Section B1 Other climate responsive technologies recommended by NOL countries' Project Steering Committee can be considered.
3	Technology Transfer	<ul style="list-style-type: none"> An applicant must prove its technology transfer mechanism from global to NOL countries. Joint Venture (JV) partnership is the default investment model with flexibility that is triggered by NOL countries' request. Such flexible cases will be confirmed by NOL countries' Project Steering Committee under Sustainability Management Unit (SMU). <ul style="list-style-type: none"> ✓ <i>Example 1: In case that NOL countries request 100% local ownership, technology licencing agreement can be considered as an alternative technology transfer case.</i> ✓ <i>Example 2: In case of a lack of local entrepreneurs who can digest a needed technology, NOL countries may consider a subsidiary of a foreign technology firm.</i> ✓ <i>Example 3: In case of a huge tech capacity gap between local and global side, NOL countries may consider South-South technology transfer modality, seeking for a local company with potential to execute South-South transfer/cooperation on climate responsive technology. In such case, the proposed local business should be able to demonstrate its pertinence to further establish potential South-South technology partnerships.</i> ✓ <i>Example 4: In case of little interest from global tech companies – e.g., due to lack of market opportunities – amid an urgent need of such technologies in NOL countries, NDAs via SMU's Project Steering Committee may suggest alternative investment options such as investments directed at such innovative companies with technologies in urgent need and/or debt/mezzanine for the NDA's proposed investments under a condition to achieve technology transfer via relevant tech</i>

		<i>licensing agreement or an investment vehicle set-up in NOL countries for local job creation, among others.</i>
4	Local Ownership of Innovation	<ul style="list-style-type: none"> • Clear evidence must prove that a proposed technology-enabled climate solution is not owned by NOL countries, being triggered by at least one of the followings, so that the innovation intervention is additional to NOL countries. <ul style="list-style-type: none"> ✓ A proposed technology-enabled climate transaction is a first of its kind in NOL countries; ✓ No technically feasible and more cost-effective alternatives to the solution exist; ✓ Similar technologies and/or viable alternatives are not available in the domestic market of a target NOL country; ✓ Similar technologies and/or alternatives should be necessarily supported by concessional finance and/or other public support mechanisms (e.g., tax incentives, subsidies) to be viable, while the support does not distort the market; ✓ The target market and available finance are insufficient to deploy a proposed technology-enabled climate solution so that scale-up and replication potential is highly low; or ✓ Similar technologies and/or viable alternatives are not locally owned, so that NOL countries cannot afford to be self-equipped with the solution to self-combat relevant adverse climate change impacts.
5	Additionality	<ul style="list-style-type: none"> • Clear evidence must be provided to demonstrate that a proposed solution overcomes existing barriers, contributes to market development and transformation and to strengthening knowledge and capacity, and applies best technology(ies). • To be screened by Project Selection Tool (Annex 21)
6	E&S Safeguards (ESS)	<ul style="list-style-type: none"> • Negative screening <ul style="list-style-type: none"> ✓ Businesses defined in IFC Exclusion List NOT eligible for investment ✓ Businesses with adverse impacts on indigenous peoples NOT eligible for investment, by falling under one of the categories below: <ol style="list-style-type: none"> (1) Business/enterprises with negative impacts on lands and natural resources subject to traditional ownership or customary use or occupation; (2) Business/enterprises that results in relocation of indigenous people from lands and natural resources subject to traditional ownership or under customary use or occupation, or; (3) Business/enterprises that may potentially impact cultural heritage²⁵, and where the commercial use of the cultural heritage of indigenous peoples would need FPIC). • E&S risk categorisation <ul style="list-style-type: none"> ✓ High risk businesses (Category A) are NOT eligible for investment

²⁵ "Cultural heritage includes but is not limited to natural areas with cultural and/or spiritual value, such as sacred groves, sacred bodies of water and waterways, sacred mountains, sacred trees, sacred rocks, burial grounds and sites, as well as the non-physical expression of culture, such as traditions, language, identity, ceremonial, or spiritual aspects of the affected indigenous peoples' lives." (GCF IPP, Para 63)

		<ul style="list-style-type: none"> ✓ A proposed business must be classified as Category B or C • Post-investment commitment through Environmental and Social Management Plan (ESMP) for medium risk businesses (Category B) ✓ All the supported JVs with medium risk level (Category B) must comply with required duties and responsibilities regarding ESS compliance: e.g., E&S risk mitigation plan deployment, regular reporting.
		<p>Selection Criteria – Scoring Priority</p> <p><i>(Applicants are encouraged to strengthen their proposal to meet the selection criteria via acceleration)</i></p>
7	Business Feasibility	<ul style="list-style-type: none"> • [JV dimension] Team capacity <ul style="list-style-type: none"> ✓ The founding team must be able to operate the business. (e.g., human resources in terms of size and expertise) • [Transaction dimension] Commercial viability <ul style="list-style-type: none"> ✓ Local market fit ✓ Technical feasibility with potential to scale ✓ Financial sustainability; bankability • CTF may finance a transaction that does not prove business feasibility, in case NOL countries need the business urgently.
8	Co-benefits & Sustainability	<ul style="list-style-type: none"> • Applicants are encouraged to fully deliver following co-benefits: <ul style="list-style-type: none"> ✓ Economic co-benefits, such as the creation of jobs, poverty alleviation and enhancement of income and financial inclusion, esp. amongst women; ✓ Social co-benefits, such as improvements in health and safety, access to education, cultural preservation, improved access to energy, social inclusion, improved sanitation facilities and improved quality of and access to other public utilities such as water supply; ✓ Environmental co-benefits, including increased air, water and soils quality, conservation and biodiversity ✓ Gender empowerment co-benefits outlining how the project will reduce gender inequalities (*Further gender component is also included in Criteria #9 below.) ✓ Promoting and empowering “indigenous-led/owned SMEs” to ensure indigenous climate technology and knowledge are fully tapped for the climate technology innovation in the five countries as shown in Criteria #10 below. • Where appropriate, proposals should present the ability of the projects to enable the achievement of one or more of the Sustainable Development Goals (SDGs).
9	Gender mainstreaming	<ul style="list-style-type: none"> • [JV formation dimension] <ul style="list-style-type: none"> ✓ At least 50% of the CTF-invested JVs are women-led JVs that are defined in Condition below; or alternatively, ✓ JVs are requested to present a gender mainstreaming commitment plan against the CTF. <p>[Condition – “Women-led JV” Definition] It constitutes the following conditions²⁶. Conditions below will be screened from</p>

²⁶ Condition 1-1) and 1-2) constitutes the IFC’s definition of women-owned SMEs. It is reported that most of the Southeast Asian countries are using the IFC’s definitions, including Cambodia, Indonesia, Philippines and

		<p>the selection process of entrepreneurs. The women-led SME candidates shall be prioritised for selection.</p> <ul style="list-style-type: none"> ▪ SMEs with at least 26% of the total capital owned by women; ▪ SMEs with at least one woman participates in the Board of Directors and/or different types of boards or internal committees such as ESG committees, among others (CEO, COO, CTO, etc.); and/or ▪ SMEs with more than 30% of the total workforce are females. <ul style="list-style-type: none"> • [Enterprise dimension] <ul style="list-style-type: none"> ✓ All proposed business proposals must be gender mainstreamed as per its agreed minimum gender mainstreaming requirements that are, among others: <ul style="list-style-type: none"> ▪ gender-disaggregated impacts to be presented, monitored, and evaluated; and ▪ a simplified gender assessment (GA) and gender action plan (GAP) (see a standard format in Appendix 3 of Annex 8) to be developed and submitted as part of the CTF application package. • Overall gender performance shall be monitored and evaluated throughout the JV implementation (Component 3) against the submitted GMCP and GAP; in case that 50% target is not achieved due to any reasonable circumstances – e.g., failure to reach the target with a slight gap due to unexpected investments at the 5th year of the investment period, this will be consulted to KDB/GCF. • Prioritisation scoring system for a winning gender-balanced portfolio <ul style="list-style-type: none"> ✓ Higher gender scores will be weighted higher in selection and investment in cases where scores are identical in other criteria
10	Indigenous-Led Entrepreneurship	<ul style="list-style-type: none"> • [Prioritisation of the indigenous-led enterprises/businesses] <ul style="list-style-type: none"> ✓ CTF will prioritise the applicant enterprises and activities that meet the following conditions: <ul style="list-style-type: none"> ▪ application/combination of indigenous technology for climate tech RD&B; and/or ▪ participatory and inclusive approach in the proposed enterprises/businesses in the design level • [Enterprise dimension] <ul style="list-style-type: none"> ✓ In case the nexus to indigenous people is confirmed, the JVs/activities may need to develop an indigenous peoples plan (IPP), as a stand-alone plan or as an integrated part of the environmental and social management plan (ESMP) of the proposed activities. <ul style="list-style-type: none"> ▪ The CTF will support, as appropriate, monitoring, evacuation, and any other due diligence including

Vietnam. See “Women-owned Small and Medium-sized Enterprises in Viet Nam: Situation Analysis and Policy Recommendations” (2017) A study requested by the Mekong Business Initiative (MBI) and conducted by a joint advisory facility of the Asian Development Bank (ADB) and the Government of Australia, and the Hanoi Women’s Association of Small and Medium Enterprises (HAWASME)/ Full text at: http://www.mekongbiz.org/wp-content/uploads/2017/04/WBAs-Position-Paper_English.pdf

		response/remedial/corrective measures in case of occurrence of unintended adverse impacts as per Para 19 of the GCF IPP Guidelines (2019).
11	Balanced Portfolio	<ul style="list-style-type: none"> CTF minimum investment threshold: at least 15% of the CTF investment proceeds to be allocated for Cambodia and/or Lao PDR <ul style="list-style-type: none"> ✓ If the NOL countries cannot be performed due to any force majeure events, it includes but not limited to (a) acts of God; (b) war, invasion, hostilities (whether war is declared or not); (c) action by any governmental authority; and (d) other similar events beyond the reasonable control of the executing entities, the threshold exemption in part or in whole shall be consulted with the GCF for the restructure approval. At least 50% of the CTF investment proceeds to be allocated for the GCF adaptation result areas

Component 4 (Technical Assistance, TA) – Ecosystem Building in Pursuit of a Genuine Country Ownership and Sustainability. Component 4 will offer the country-specific TA activities to contribute to the relevant ecosystem development for the programme's smooth roll-out, while avoiding overlaps with similar grant funding policymaking or capacity-building projects of other international development agencies.

This TA component aims to create or develop each country's proper sourcing and acceleration training organism and ecosystem to nurture top talents on the ground, and build on existing local platforms and initiatives for the sake of the programme's harmony with the local governance. Almost every programme country has a national body or relevant mechanism for promoting entrepreneurship, though they demonstrate different forms, levels, governance, and maturity. The programme will team up with such bodies to maximise the use of the contextually settled system and infrastructure, ensuring timely and efficient operationalisation and staying on track even after the GCF-KDB exit; i.e., it shall minimise expenses for a new office set-up with newly purchased office supplies, electronics, and furniture. This satisfies a broader governmental demand to minimise the creation of new mechanisms that typically fragment, duplicate, or overlap the efforts of local governments.

In particular, each country has its own unique Intellectual Property (IP) related regulatory framework, though all of them are relatively vulnerable and require improvement with international support. Targeted five countries can be divided into two groups on the basis of what KDB has researched (see Annex 9 for country-specific IP relevant regulatory status).

- 1st group comprises Indonesia, the Philippines, Vietnam, all of which are at the initial stage of IP framework development, reflecting aspects such as technology license valuation and IP enforcement. Although there is a long way to go before the countries have sufficiently advanced IP framework to provide comfort for global tech providers, these governments' continued efforts to improve the IP environment deserve appreciation. It is expected that the countries developing IP regulatory framework will advance thanks to the governments' strong willingness, though their policy enforcement, such as penalties, are generally weak in the middle of existing barriers to licensing and commercialised IP assets: e.g., compulsory licenses to override IP rights have been issued by the governments. The programme shall support their direction of development, while addressing such local barriers on the ground.
- 2nd group consists of Cambodia and Laos, generally classified as the least developed countries. Due to a relatively smaller size of economies and trade volume, there seems comparatively less information and assessment references available on their IP frameworks. Therefore, the programme's PPF outcome will serve as a starting point for a long regulatory development journey towards a more advanced IP framework in this highly vulnerable group. While there are

basic level of laws on IP and in-kind contributions like technology, copyrights, and patents can be registered for the issuance and consideration of shares for private companies, the evaluation method of value of each technology and enforcement process are not clear. The two countries are strongly recommended to refer to cases from other countries; i.e., TA activities are strongly needed.

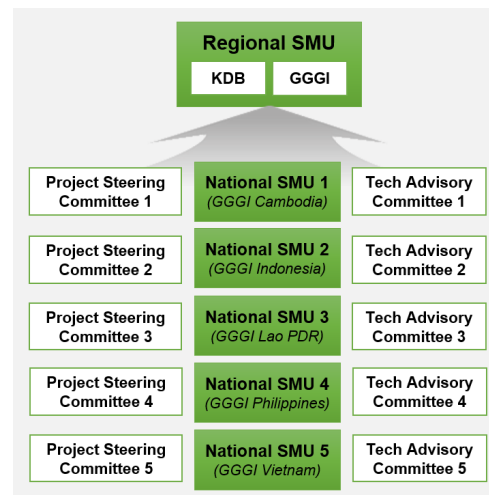
Based on the basic understanding of each country's IP regulatory framework ecosystem, the programme will develop a detailed and customised TA plan in pursuit of a more advanced IP protection ecosystem building. Meanwhile, lessons learnt by other target countries would be able to provide significant benefits amongst each other. It is anticipated that countries would go through a certain learning process via a case by case experience that they would perceive the concept of the IP rights and technical procedures in a practical fashion, and see the merits of how the IP protection scheme brings advanced technology providers and enhances their access to needed technologies. Most importantly, local JVs will deploy their own customised technologies with comfort that theirs could be protected under the newly framed or strengthened policies, laws, and regulations. This will lead countries to seriously consider the regulatory recommendations delivered on from Component 4, and to materialise TA deliverables on the ground – which is not common in a harsh reality of ODA or grant-funded TA areas. The programme admits a restraint that the whole legal framework of the five countries cannot be perfected in a few years under unlimited resources; but revision such as strengthening the existing references can be a practical and easier scenario with consideration of their individual country uniqueness.

Country Ownership Built Sustainability Management Unit (SMU), as the Core Decision-making Authority in Components 1 and 4. GGGI will organise in-house project teams named "Sustainability Management Unit (SMU) with an aim to strengthen country ownership in executing optimised and well-coordinated on-the-ground activities fit to individual NOL countries, and to concentrate allocated resources on the programme over the course of the implementation. Six (6) SMUs will be established as follows: (i) Regional SMU at the GGGI Seoul HQ; and (ii) National SMU at each NOL country's GGGI Country Office, thereby five National SMUs in total. In brief, the objectives of the SMU (GGGI's in-house team, not a separate legal entity) are as follow in brief: (i) country ownership; and (ii) effective programme management.

- The strengthening of country ownership: This creation of mechanism through which NDA and line ministries can make the decision-making intervention due to reasons (e.g., the technology needs evolve, considering the late implementation after board approval and FAA signing), which led to the SMU designing in different forms and composition by country. The National SMUs will be operational based on such feedback from the PSC under the principle of country ownership.
- The channel of the effective programme management: Given the multi-country targeting and the programme theme tech transfer per se leading to engagement of various stakeholders, the SMU will act as a core channel of the effective planning, resource management, communication, and coordination between various stakeholders in four components for the sake of the optimal investment outcomes and climate impacts.

Regional SMU – KDB Advisory Management & NH Engagement for Investment Linkages. The core

decision-making of the two components will be advised, guided, and determined by the Regional SMU meetings on an as-needed basis. In capacity of Accredited Entity and Executing Entity, sitting at the Regional SMU meetings, KDB shall advise and approve the main agendas – i.e., National SMU team building, each country team’s partner local entities (local bodies in the relevant acceleration and entrepreneurship realms in order to maximise the use of existing platforms and the eventual integration of the relevant resources into the ecosystem of the NOL countries in pursuit of a genuine post programme sustainability), procurement of properly qualified service providers – e.g., service provider with IP regulatory framework advisory capacity, budgeting, finalist company selection, and synergetic strategy amongst every component, as the control tower of the Regional SMU that gives guidance to the National SMUs.



The Regional SMU will invite NH affiliates in the decision-making process as for local private sector partnership, company sourcing, and acceleration activities (Activities 1.2 and 1.3) that require a close linkage with other subsequent components. At the Regional SMU meeting chaired by KDB, NH representatives will (i) recommend top-tier local VC/AC/PE partners that obtain abundant portfolio companies and local market expertise with established resources; (ii) will participate in the procurement and/or contracting process between GGGI and such recommended local top-tiers by supporting the ToR description with qualifications wanted from an investor’s perspective, evaluating candidates’ qualifications, along with the final selection. In addition to the selection of ASEAN-based local top-tiers, NH will directly engage discuss promising pipeline/portfolio company sharing with that selected local top-tiers, and approve the final selection of local JV candidates at demo days that eventually determine the finalists in Component 1. This NH engagement will support GGGI to identify and source qualified local entrepreneurs in Component 1, in addition to its own list of companies introduced by the NDAs and line ministries and its own private sector partners. All the procedures will be proceeded in accordance with the GGGI’s established institutional system; but NH has the prior decision-making authority and veto rights in case such procedures and outcomes are not fit into investments planned afterwards in Components 2 and 3, thereby not repeating trials and errors having been found in most of one-off seed grant provision events without any follow-up investment at scale.

GGGI will set up different forms of the in-house National SMU fitting into each NOL Country’ unique circumstances and the five National SMUs will lead operations of the locally driven activities of Components 1 and 4 in each country as a core implementation unit under the direction of the Regional SMU under KDB supervision and advisory guidance. The rationale of the five National SMUs is the different needs on the basis of the following general structure to enable effective delivery of the “National Climate Entrepreneur Accelerator Programme (N-CEAP).” As differentiated N-CEAPs should be designed and offered according to varying country needs and contexts, the GGGI will design and operate the locally customised N-CEAP provision with the support of both local governments and technical experts, thereby necessitating the Project Steering Committee (PSC) and Technical Advisory Committee (TAC) under the National SMU structure.

- **Project Steering Committee (PSC):** As a high-level decision-making body, the PSC will be composed by representatives from the local government (e.g., NDA), GGGI, academia, and relevant public and private sectors; the composition varies as per NDA instructions as below. The duties of the PSC

include high-level ministerial coordination, overall policy guidance, and need-based institutional arrangements for timely and effective implementation.

- **Technical Advisory Committee (TAC):** An ad-hoc technical advisory body will be established with working-level government officials, relevant sectoral/thematic experts, technicians, and/or private sector representatives to address technical and operational issues that arise during project implementation in a timely manner, if necessary.

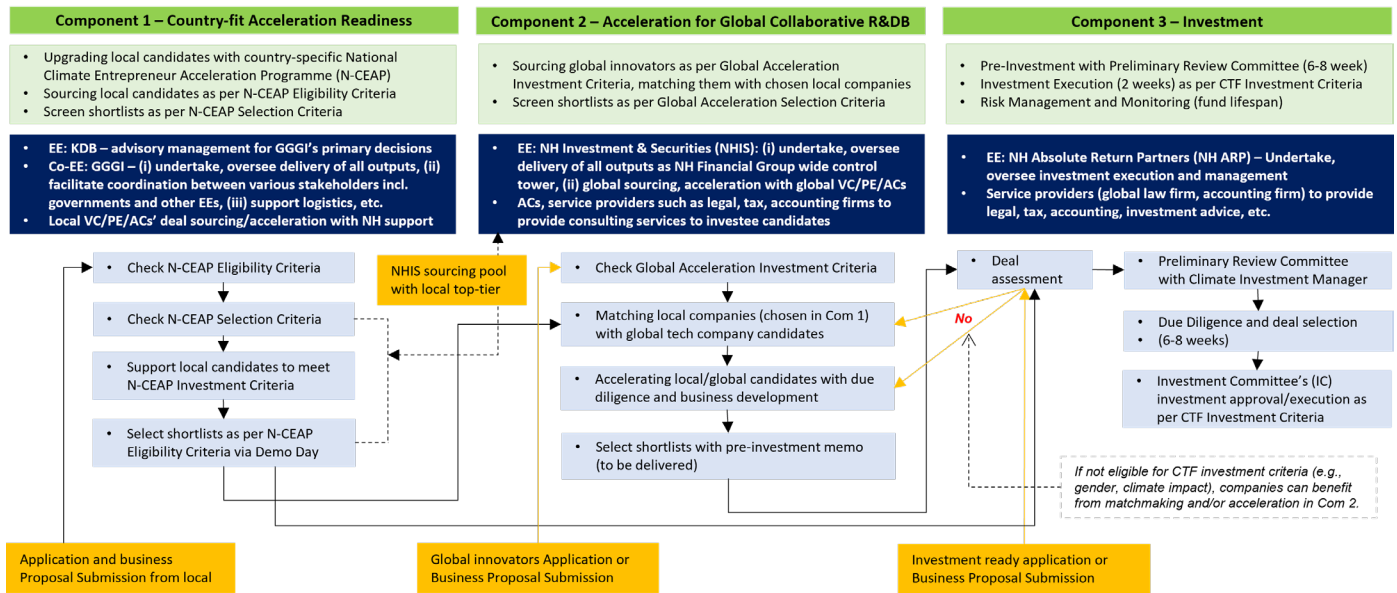
See below the tentative five National SMUs that have been formulated as a result of consultation with NDAs and their recommended local ecosystem players who consider country ownership significantly important for climate technology-enabled business acceleration activities. All the participating local partner entities were recommended or confirmed by the respective NDAs, line ministries, and their private sector partners as a result of extensive stakeholder consultation and feasibility studies, though it may be subject to change due to local ecosystem dynamics including the ministerial reshuffling.

In Components 1 & 4, the SMU aims at local companies' compliance with the N-CEAP investment criteria in Component 1 and readiness for collaboration with global companies in Component 2; only local graduates screened as per the investment criteria in Component 1 can enjoy collaboration with global companies in Component 2. Please see the N-CEAP investment criteria that include E&S safeguards screening and gender mainstreaming awareness - i.e., qualifications which local companies are rarely equipped with. The main roles and responsibilities of SMU are to: (i) strategise and develop operational work; (ii) undertake and oversee delivery of all outputs in a timely and cost-effective way; (iii) coordinate consultation with key governments, ministries, businesses, and vulnerable communities; (iv) communicate with NH in charge of Components 2 and 3 activities; among others. NH will approach and communicate with SMU on a regular and on-the-ground need-basis. Often, SMU will contribute its resources and in-kind supports such as venues and data sets) where needed.

Cross-Functional & Multi-Directional Collaboration between Components. The programme's success requires immense flexibility between components and agility in intuitive decision-making because the complete acceleration work-flow cycle is tremendously complex. In principle, the programme pursues the Joint Venture (JV) model as the mainstream technology transfer partnership modality, as prescribed in investment criteria: a default deal flow from Component 1 (locally driven readiness) and Component 2 (global collaboration) to Component 3 (risk-adjusted investment).

Nevertheless, a scenario may spin out of the lack of available local partner entities in certain industrial sectors and/or unpredictable barriers that bar investment approval and execution despite the strong needs. In such cases, the technology provider may be eligible for investment through setting a local subsidiary with ownership restriction and local employment condition. Another example is a local company that has already partnered with a foreign technology provider, in search of other methods of earning risk capital to address the second Death Valley. If deemed fit as per investment criteria, the local entrepreneur could be considered. Furthermore, if the investee's gender capacity is proven insufficient due to a lack of understanding of the GCF IRMF by the Investment Committee (Component 3), the company may be recommended to consult with related experts (Component 2) for impact assessment and gender mainstreaming trainings, a prerequisite for fund capital injections as shown below deal flow chart.

Deal Flow with Synergy between Components



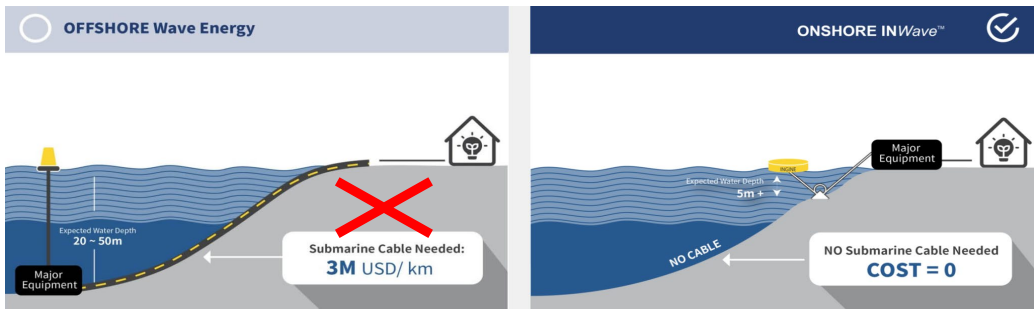
Below are case scenarios that illustrate and convey the spirit of the programme for ease of understanding.

Scenario 1. Climate-resilient Agriculture Strengthened with AI Technology

Global Tech Provider (Company A)	Climate-resilient Agriculture system for infectious diseases based on Artificial Intelligence (AI) technology, gathering data from over 100 different geographical dataset sources that can be utilised to quickly perform quantified risk assessments and identify potential high-risk areas and migration patterns
Local Entrepreneur (Company B)	Farming management company with needs on reducing the negative agricultural impacts primarily caused by climate-related disasters (e.g., recurring floods, typhoons, droughts) to improve harvesting management.
Programme	Actions per Component
Component 1	<ul style="list-style-type: none"> Company B is selected for the programme by the national SMU in coordination with the regional SMU, based on the eligibility criteria Company B undergoes a rapid needs assessment to then participate in a tailored N-CEAP programme primarily consisting of: a) the programme's pursuit and climate sensitisation; b) business and/or product development brainstorming; b) marketing and communications; c) significance of a transparent financial management; d) E&S/gender/IP requirements; and e) reporting and monitoring duties.
Component 2	<ul style="list-style-type: none"> Matchmaking opportunities for Companies A and B in a hybrid format considering the ongoing pandemic context Diagnostic analyses and training provided the NH Investment & Securities arranged team of accelerators and experts, to determine the best option for technology transfer between companies Advisory, consulting, and due diligence services provided to better understand the legal, tax, E&S and practical implications of the different technology transfer options Joint Venture model with in-kind technology contribution by Company A and local infrastructure by Company B → Company C created Additional acceleration services for Company C focused on the technical training of personnel on utilising the AI-based predictive modelling tech Legal resources to aid in negotiating the agreement terms and conditions between the two companies.

Component 3	<ul style="list-style-type: none"> Company C goes under review by the CTF Investment Committee Multi-faceted (reputational, legal, and financial) due diligence procedure Shareholder's agreement is signed, and funds are provided along with the business development and execution support by the GP.
Component 4	<ul style="list-style-type: none"> The SMU partners with the government agencies in the areas of e.g., public health and the local private sector on telecommunications to align with the Company C's actions, along with policy recommendation to be delivered on Regular monitoring and evaluations are executed to ensure the climate impact created by the programme and Company C are being upheld.

Scenario 2. Bringing an Economic Wave Technology Solution to Remote and/or Small Islands

Global Tech Provider (Company A)	<p>Onshore wave technology that collects wave power nearshore by multi-directional floating buoys with the power generation unit installed on land, enabling the provision of affordable yet clean and sustainable energy to remote islands, coastal areas.</p> <p><u>Onshore Wave Technology</u></p> 
Local Entrepreneur (Company B)	Energy infrastructure company committed to responding to energy/water scarcity with valuable understanding of the local energy environment
Programme	Actions per Component
Component 1	<ul style="list-style-type: none"> Company B is selected for the programme by the national SMU in coordination with the regional SMU, based on the eligibility criteria Company B undergoes a rapid needs assessment to join a tailored N-CEAP
Component 2	<ul style="list-style-type: none"> Matchmaking opportunities for Companies A and B in a hybrid format to discuss areas of potential collaboration on local sustainably energy resources advancement Diagnostic analyses and training provided, to determine the best option for technology transfer between companies through collaborative R&DB activities for PoC (e.g., wave energy-backed desalination) with gap analyses and financial modelling Advisory, consulting, and due diligence services provided to better understand the legal, tax, E&S and practical implications of the different technology transfer options Joint Venture model with in-kind technology contribution by Company A and local infrastructure by Company B) → Company C created Further extensive acceleration assistance on legal/business development/technical capacity building provided to Company C, while legal resources to aid in negotiating the terms and conditions between the two companies
Component 3	<ul style="list-style-type: none"> Company C goes under review by the Investment Committee for the CTF. Multi-faceted (reputational, legal, and financial) due diligence procedure Shareholder's agreement is signed, and funds are provided along with the business development and execution support by the GP.

Component 4	<ul style="list-style-type: none"> The SMU offers country-specific TA activities considering the nascent nature of wave technology, namely knowledge-sharing events to deepen the understanding of policymakers, industry stakeholders, and end-users. Policy-level intervention for incentivisation (e.g., Feed-in-Tariff) takes place backed by the national SMU in partnership with the local gov't Regular monitoring and evaluations are executed to ensure the climate impact created by the programme and Company C are being upheld.
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Scenario 3. Automatic Weather System for Disaster Risk Reduction

Global Player (Company A)	Meteorological technology with an Automatic Weather System enabling real-time, automatic measurement, recording and transmission of weather data
Local Entrepreneur (Company B)	Local company recommended by the local meteorological and hydrological administration with needs on strengthening human resources to operate AWS equipment on the ground
Programme	Actions per Component
Component 1	<ul style="list-style-type: none"> Company B is recommended by the local meteorological and hydrological administration, and selected for the programme by the national SMU in coordination with the regional SMU upon assessment.
Component 2	<ul style="list-style-type: none"> Matchmaking opportunities for Companies A and B in a hybrid format to discuss areas of potential collaboration on advancing weather forecasting and data management system Diagnostic analyses and consultation provided the NH Investment & Securities arranged team of accelerators and experts, to determine the best option for technology transfer. As part of the global acceleration support, the Meteorological Administration and Meteorological Institute assess and verify the quality of meteorological instruments of Company A. Technology licensing through a subscription-based model Additional acceleration assistance is provided to Company B, including technical training on equipment installation, maintenance, and operation, as well as data processing and management, while legal resources to aid in negotiating the terms and conditions between the two companies.
Component 3	<ul style="list-style-type: none"> Company B, now armed with the technology of Company A, goes under review by the Investment Committee for the CTF. Multi-faceted (reputational, legal, and financial) due diligence procedure Shareholder's agreement is signed, and funds are provided along with the business development and execution support by the GP.
Component 4	<ul style="list-style-type: none"> With the SMU support, the relevant national meteorological agencies take part in knowledge exchanges to facilitate adequate information flow Regular monitoring and evaluations are executed to ensure the climate impact created by the programme and Company B are being upheld.

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

Partnership with Executing Entities with a Proven Capacity in Each Component. KDB partners with various entities to efficiently carry out activities in the five vulnerable NOL countries: as for Components 1 and 4, the Global Green Growth Institute (GGGI) which boasts a strong track record in climate and green growth initiatives across the five countries via professional government consultation, to broadly reach the best suited entrepreneurs and audiences on the ground; as for Component 2, NH Investment & Securities (NHIS) which is to execute collaborative R&DB acceleration activities on the basis of partnership with both local and global accelerators with different technology expertise and strategies; and as for Component 3, NH Absolute Return Partners Pte. Ltd. (NH ARP, General Partner, “GP”) which is undoubtedly a proven financier with impressive investment track record and performance globally.

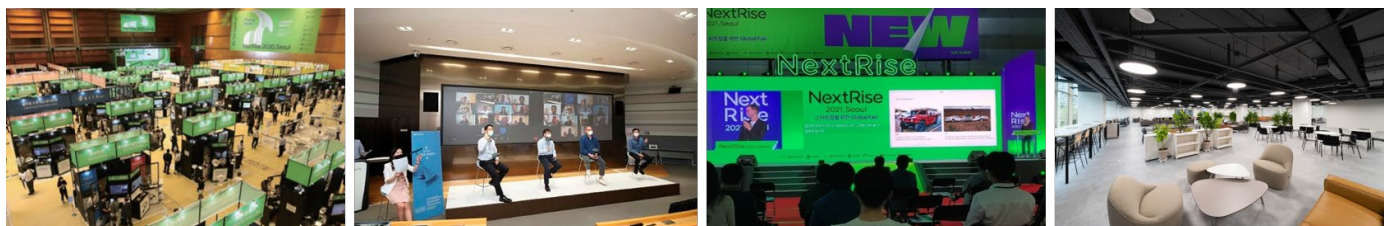
Component-wise Executing Entities and their Proven Capacity

Component	Activity	Executing Entity
<u>Component 1</u> Country Driven Acceleration Readiness	1.1. Set up a Regional and National Sustainability Management Unit (SMU) 1.2. Launch sourcing strategies to identify qualified local JV candidates 1.3. Offer tailor-made acceleration services to nurture local JV candidates	<u>KDB</u> <ul style="list-style-type: none"> Start-up/VC investment platform systemised (in-house) with ecosystem building experience and know-how Global VC network incl. affiliates in Singapore, Silicon Valley, and London <u>GGGI</u> <ul style="list-style-type: none"> Local presence and network across the 5 NOL countries, thereby enabling outreach to key local stakeholders Track record on entrepreneurship by working with climate vulnerable start-ups and MSMEs as a <i>Greenpreneurs</i> initiator
<u>Component 2</u> Global Acceleration for Collaborative R&DB	2.1. Set up the Global Acceleration Advisory Secretariat (Secretariat) 2.2. Launch global sourcing strategies to attract global technology innovators 2.3. Offer collaborative R&DB acceleration services for JVs	<u>NH Investment & Securities (NHIS)</u> <ul style="list-style-type: none"> A wide, strong business partnership with Southeast Asian top-tier VC/PEs Global business networks incl. NH affiliates in various geographies One of top-tiers, equipped with in-house VC investment wing and relevant resources and infrastructure to be leveraged for Team NH composition
<u>Component 3</u> Climate Technopreneurship Fund (CTF)	3.1. Execute the CTF formation with raising investment capital 3.2. Execute investments with portfolio management as per investment criteria 3.3. Achieve successful exits with a reasonable rate of return	<u>NH Absolute Return Partners (NH ARP)</u> <ul style="list-style-type: none"> GP, composed with investment experts with track record in fund investment and portfolio management across Asia A strong, large-scale NH Financial Group-wide support as a subsidiary 100% owned by NHIS Singapore-based presence with a wide pool of ASEAN-oriented investors
<u>Component 4</u> Technical Assistance (TA)	4.1. Formulate the best workable network framework 4.2. Build capacities to enable and strengthen the relevant ecosystem	<u>GGGI</u> <ul style="list-style-type: none"> Specialised in capacity building and knowledge sharing activities with a climate lens Key arranger, advisor for government consultations incl. NDAs, line ministries

4.3. Promote sustainability via the National SMUs per country	<ul style="list-style-type: none"> Obtained with a set of policies for executing and managing on-the-ground procurement, contracts, logistics, etc.
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The Korea Development Bank (KDB), Accredited Entity. As an accredited entity, KDB shall run and supervise the programme overall during the implementation period – each component to be separately implemented but closely associated by working hand in hand with partner entities. KDB will lead, oversee, and supervise the programme by leveraging the bank’s institutional capacity and resources that have fostered the economic growth and industrial advancement of Korea over the last seven decades. In particular, KDB has advanced the Asian venture capital market along with venture and technology banking services for promising start-ups and SMEs with technological prowess since the market began to take a shape during the late 1990s. Meanwhile, as a leading policy financing bank, KDB has set up an internal infrastructure to cultivate, sophisticate, and grow an enabling ecosystem that discovers small giants and supports them in growing into global unicorns for the country’s sake of innovative growth through new industrial engines.

KDB Infrastructure for Start-up Ecosystem Building



Above all things, the bank’s flagship venture investment platform called ‘KDB Next Round’ is an example of KDB’s actions towards developing a start-up ecosystem. IR rounds are held three days a week in the auditorium on the ground floor of the bank’s headquarters in Seoul, classified by the development stage of start-ups – (1) IR rounds for Seed and Pre-Series A on Tuesdays; (2) IR rounds for Series A and B on Wednesdays; and (3) IR rounds for Series C to Pre-IPO on Fridays – hence, covering the complete lifecycle of start-ups. The start-up and venture investment inducement platform has continued even in the midst of COVID-19 with live streaming services. It has so far arranged around USD 4 billion in total funding through more than 636 rounds since August 2018, as of 2020 4Q.

Such supervision and guidance as an accredited entity will be primarily provided by Climate Business Team of KDB HQ, while leveraging its in-house three-tier venture investment platform and global start-up/VC acceleration and investment networks: i.e., Singapore Venture Desk, London Venture Desk, and KDB Silicon Valley LLC (VC subsidiary in the US). Such KDB start-up/VC networks at the global financial centres will support the HQ to be equipped with information on timely trends about global acceleration and global technology company and/or climate transaction sourcing, which is critical for the bank’s HQ to serve as the control tower that aims at seamless interlinked management amongst the four (4) different components across five (5) NOL countries.

Executing Entities of Components 1 & 4: KDB, Global Green Growth Institute (GGGI)

Garnering GGGI’s Local Presence, a Noticeable Track Record as a “Greenpreneurs Program” Initiator, and Experience to Manage Non-reimbursable GCF Grant Proceeds. KDB developed a strategic partnership with GGGI amidst the wake of the pandemic crisis in appreciation of its in-country presence embedded in local governments and its prominent role as a trusted advisor for green growth promotion and NDC fulfilment. Garnering GGGI’s established local presence, KDB-GGGI partnership has eventually resulted in a great success of obtaining NOLs from all the five NOL countries, while several NDAs had stopped their administrative function in the middle of COVID-19-caused national lockdown. In a nutshell, the programme has been able to minimise the impacts of COVID-19-imposed international travel restrictions, and build constructive stakeholder relationships with the NDAs and potential implementing

partners, taking advantage of the five countries' GGGI membership. Such a strategic partnership with GGGI will strengthen the programme's alignment with the country ownership principle, through close communication with NDAs, line ministries, and influential market players across the five partner countries.

Above all things, GGGI Greenpreneurs Program is an incubator supporting young people to devise social enterprise solutions that address sustainability and climate change issues in the communities of GGGI member countries. It consists of web-based training modules, connecting with mentors and subject matter experts, business competition and provision of seed funding for winners. Since 2018, the initiative has engaged, on average, 200 youth green entrepreneurs every year, approximately 800 in total over four years, and has supported 57 teams from 20 different countries, including Indonesia and Cambodia. GGGI has extensive experience in working with the private sector particularly with start-ups and MSMEs in diverse sectors in GGGI member countries with various interventions.

In addition, GGGI has been closely working with various NDAs for the GCF Readiness Programmes as a Delivery Partner under "GCF-GGGI Framework Readiness and Preparatory Support Grant Agreement", which proves GGGI's requisite capacity to implement the GCF grant funds. With increased technical capacity in green and climate finance and strong relationship with public and private stakeholders in both donor countries as well as the developing world including the NOL countries, GGGI has mobilised over USD 8.6 billion in green investment commitments for its members and partners over the course of 2015–2022. In 2023, GGGI has contributed to green investment mobilisation valued at USD 1.8 billion, and has delivered 120 investment advisory outputs.

Executing Entity of Component 2: NH Investment & Securities (NHIS)

Strengthening a Linkage between Components 2 (Grant Component for Acceleration) and 3 (Equity Component for Investment). The programme pursues a close link between Components 2 and 3 because seamless operations between acceleration (Component 2) and investment (Component 3) are of great significance for the sake of achieving desirable climate impacts. Feasibility studies including situation assessment, gap analysis, and stakeholder consultations identified a key problematic issue that most of the graduates (local entrepreneurs) from scattered one-off seed grant initiatives have not obtained the next phase of investment capital needed for scale-up, market entry, and commercialisation. In consideration with such failed precedents learnt, the programme shall devise an implementation structure where later-stage accelerators and investment advisors are involved in the designing and programming of climate technology business acceleration services customised to individual JVs with different technology needs since the initial stage.

In order to achieve this pursuit, NHIS, to be invited into the CTF Investment Committee (IC) as an active advisor under Component 3, will function as Executing Entity of Component 2. As an Executing Entity of Component 2, NHIS will minimise undesirable cases that seed grant-supported entrepreneurs cannot approach the investment phase, are ineligible for component 3, and get stuck. This will enable a close linkage between multi-stakeholder engagement acceleration (Component 2) and investment portfolio management (Component 3), which will foster the programme's effectiveness in terms of resource management.

In order to allow accelerated high-potential JVs with measurable climate impacts to successfully grasp investment opportunities, NH Investment & Securities will serve as a control tower and focal point to take on the responsibilities of a smooth roll-out and the overall management of Component 2, including but not limited to creating acceleration work plans, facilitating partnership arrangements with local/global accelerators while coordinating the roles and responsibilities amongst business consulting advisors and accelerators under optimised communication and resource management, and tracking and reporting performance to KDB in accordance with the GCF principles.

Once the GCF Board Approval, existing service providers of NHIS and NHARP, composed by key experts in global level sourcing, business modelling, due diligence (legal, tax, tech valuation, IP trade, etc.), tech-enabled business localisation, E&S/gender/IP safeguards, and R&DB acceleration of climate tech ventures in partnership with various service providers.

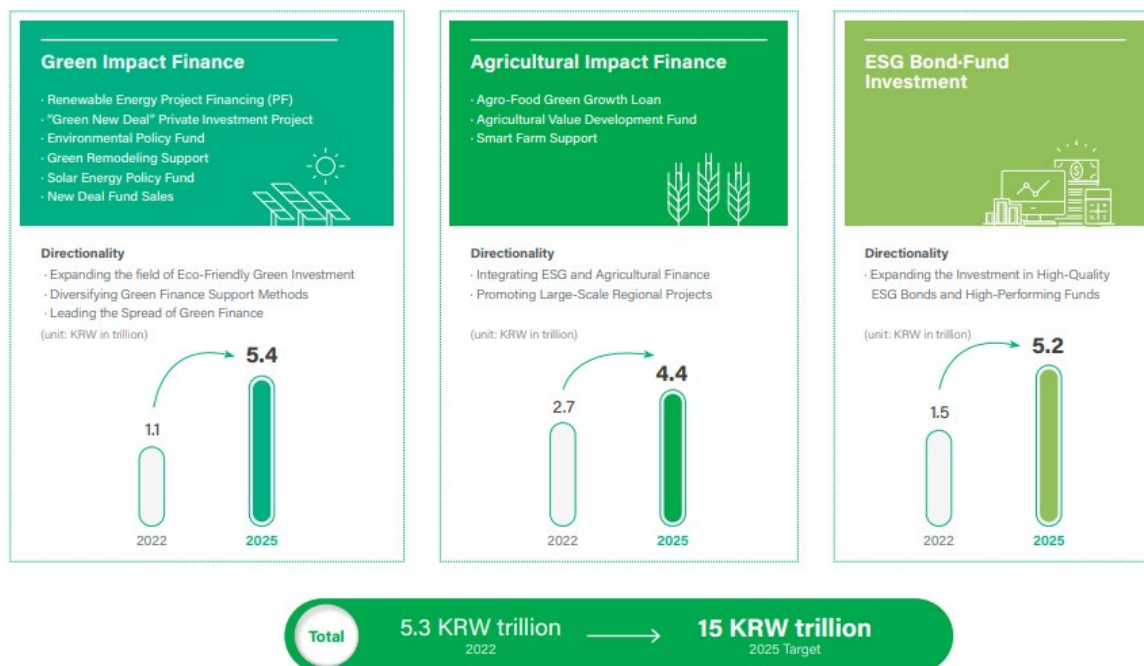
Executing Entity of Component 3: NH Absolute Return Partners (NH ARP)

Strong GP Team of NH Investment & Securities under the NH Financial Group. NH Absolute Return Partners (NH ARP) is the Executing Entity of Component 3 to be the General Partner (GP) entity for a Singapore-domiciled Climate Technopreneurship Fund (CTF).

NH ARP is a Singapore-based subsidiary 100% owned by NH Investment & Securities (NHIS) equipped with 3,136 investment experts, total assets of ca. USD 50 billion, and a stable credit rating of A3 (Moody's) and A-(S&P) (as of 2022), under the NH Financial Group with AUM-included total assets of ca. USD 600 billion. NH ARP is to establish and manage the CTF by fully leveraging the NH Financial Group and its NH Investment & Securities' competitiveness in diverse investment sectors, the Southeast Asian network with a strong local presence in Singapore, Indonesia, Vietnam, and Cambodia, and aggressive investment partnership with global peers (e.g., NH-Amundi Asset Management as the full-service asset management firm with more than ca. USD 47 billion in AUM).

NH targets ESG and green investments of ca. USD 13 billion (KRW15 trillion) in total by 2025, and boasts proactive sustainable business pursuits as a participant in various global initiatives such as the Partnership for Carbon Accounting Financials (PCAF), SBTi (Science Based Targets initiative), Net-Zero Banking Alliance (NZBA), Task Force on Climate-related Financial Disclosures (TCFD), UNEP FI, UN Global Compact, Carbon Disclosure Project (CDP), and Equator Principles (EP).

NH Ambition: ESG Investment Expansion by 2025



NH-wise Expertise in Financing the Climate Technology Needs of NOL Countries. GP team under the NH brand name that affiliates the National Agricultural Cooperative Federation (NACF) has shown a strong performance in agricultural finance. NH has financed the agricultural industry with diverse financial instruments and products – e.g., instalment financing products with an aim to expand the supply of renewable-fuelled agricultural machinery, farmers' insurance schemes, and agricultural and rural development fund set-up and management, while reinforcing internal and external collaboration (e.g.,

Foundation of Agricultural Technology Commercialisation & Transfer). Considering an obvious need in climate resilient and sustainable agricultural technologies from all the five countries, NH ARP's engagement as the GP entity will be able to garner the NH-wide stakeholders' demonstrated track record and accumulated experiences as the best-in-class player in financing the agricultural industry globally.

NH business strategy further reaches out to financing many other sectors in which the five NOL countries expressed their keen interest, including but not limited to renewable energy such as agricultural solar power deployment using reclaimed farmland and salt farms, floating solar power projects, and offshore wind power projects, which has contributed to increasing farmers' income as well as the expansion of renewable resources in climate vulnerable rural areas across countries. On the other hands, NH Venture Investment has created a virtuous circle that creates funds, invests in innovation-proven venture firms, increases their value, and finally maximise the returns. In addition, its investment in tech driven logistics companies via the ASEAN Technology Fund 2 in April 2022 proves NH's continued portfolio diversification efforts in innovative companies and promising industries with growth potential. Recently, it intends to expand green finance and investments in 100% carbon-neutral and green bio technologies and AI-based technologies.

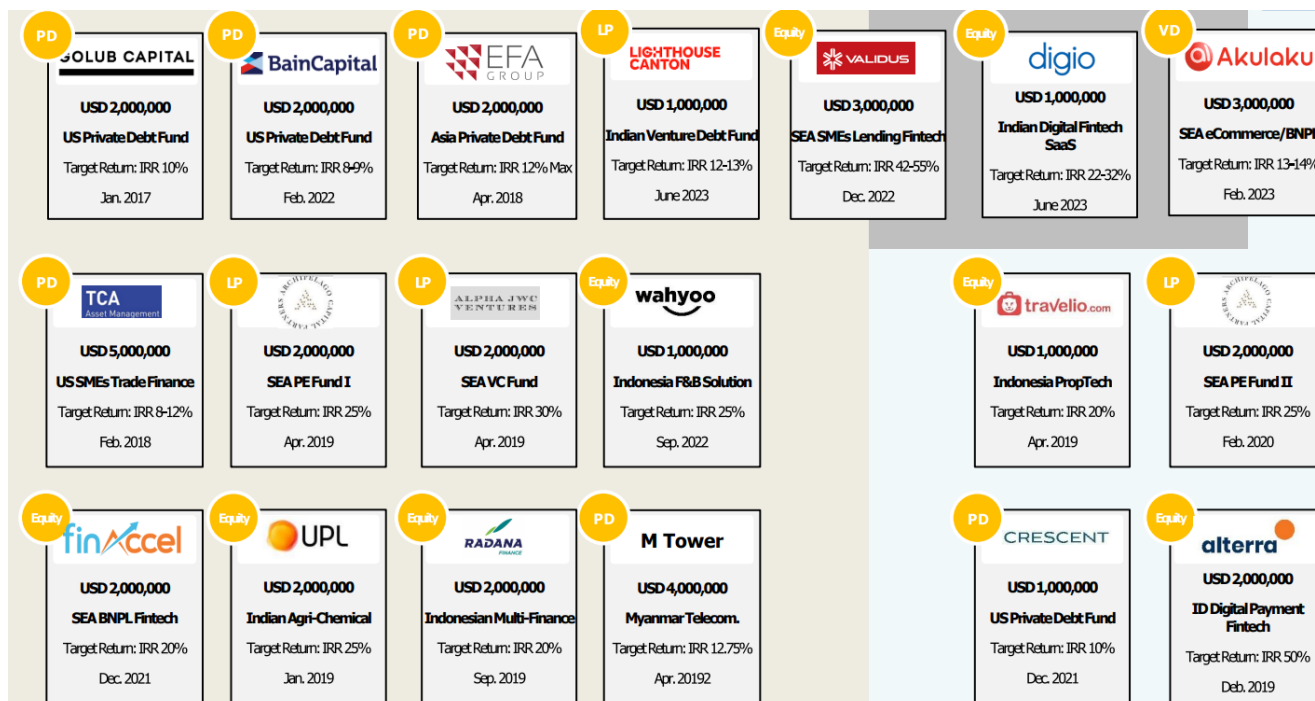
It is also noticeable that climate finance professionals of NH Investment & Security (Carbon Finance Team-centred investors' team-up at NHIS Headquarters) are ready to contribute to enhancing climate investment speciality of the CTF. As a global climate financial service provider, NHIS has shown a brilliant track record in GHG reduction and removal projects globally, investment of climate technologies such as DAC and CCUS, investment in climate tech firms, and carbon investment platforms development. The programme anticipates effective delivery of climate outcomes, on the back of the GP's best-in-industry investment capabilities in terms of climate/carbon/green finance.

NH Financial Group Organisation Chart: Garnering NH-wise Capacity



The core person of the CTF key man group (Managing Director, CIO of NH ARP) has been leading all private equity and debt investments of NH Investment & Securities with a geographic focus on Singapore and its neighbouring Southeast Asian countries, in order to expand strategic business partnership opportunities with the ASEAN region's growing innovators, and secure reasonable investment returns in underexplored sectors across emerging markets. Under his leadership, NH ARP currently obtains a diversified investment portfolio as shown below with noticeable returns and performance. Before a move to NH ARP, the core key person had served as an investment professional and/or analyst in various global

investment firms such as Merrill Lynch International, Macquarie Securities, Royal Bank of Scotland Asian Securities, and National Pension Service. The person's broad networking power and deep expertise in fund operations, fundraising, and investor relations, among others, will be fully leveraged to successfully operate and manage the CTF in Component 3 in pursuit of the intended programme objectives. In addition to the core person, the CTF GP, NHARP, plans to hire an additional key fund manager within the first anniversary of the FAA signing date to support and supplement the expertise of the core person and NHARP as a whole. The additional key fund manager will bring related expertise in sourcing and investing into climate tech companies to supplement the existing investment expertise of the core person and NHARP, in order to accelerate growth in climate tech investments and achieve both impact and fund returns.



As the CTF GP (fund manager), NHARP bears all authorities and responsibilities pertaining to the CTF general operations. The authorities related to investment is managed by NH ARP, and the CTF Investment Committee (IC) will initially consist of two (2) members appointed by the GP. The GP will actively search for appropriate advisors or consulting firms, and may from time to time appoint additional key professionals to serve as relevant personnel to ensure the perfection of the CTF IC decision-making process.

The authorities related to investment is managed by NHARP under which NH ARP appoints and invites members of the CTF Investment Committee (IC). The CTF IC, to be composed by two (2) seats along with Climate Impact and Compliance Managers as IC Observers with veto rights, is to be called. The CTF IC's investment decision is to be made by affirmative votes from the two representative professionals, along with climate impact and compliance managers with veto rights. While the role of the Climate Impact Managers is mainly to review, advise, monitor, and sustain (report) the climate impact of the investment deals, the managers will be given veto right during both preliminary review committees and investment committees, if the proposed investment deal severely lacks the representation of climate impact viability.

In addition, KDB is to sit in the CTF Advisory Committee (AC) in order to ensure the CTF's investment activities properly aligned with the GCF/KDB objectives which have been aimed at since the programme conceptualisation, approving matters including but not limited to any departures from or changes to pre-agreed investment objectives, policy, and/or restrictions.

CTF Investment Decision Making Process

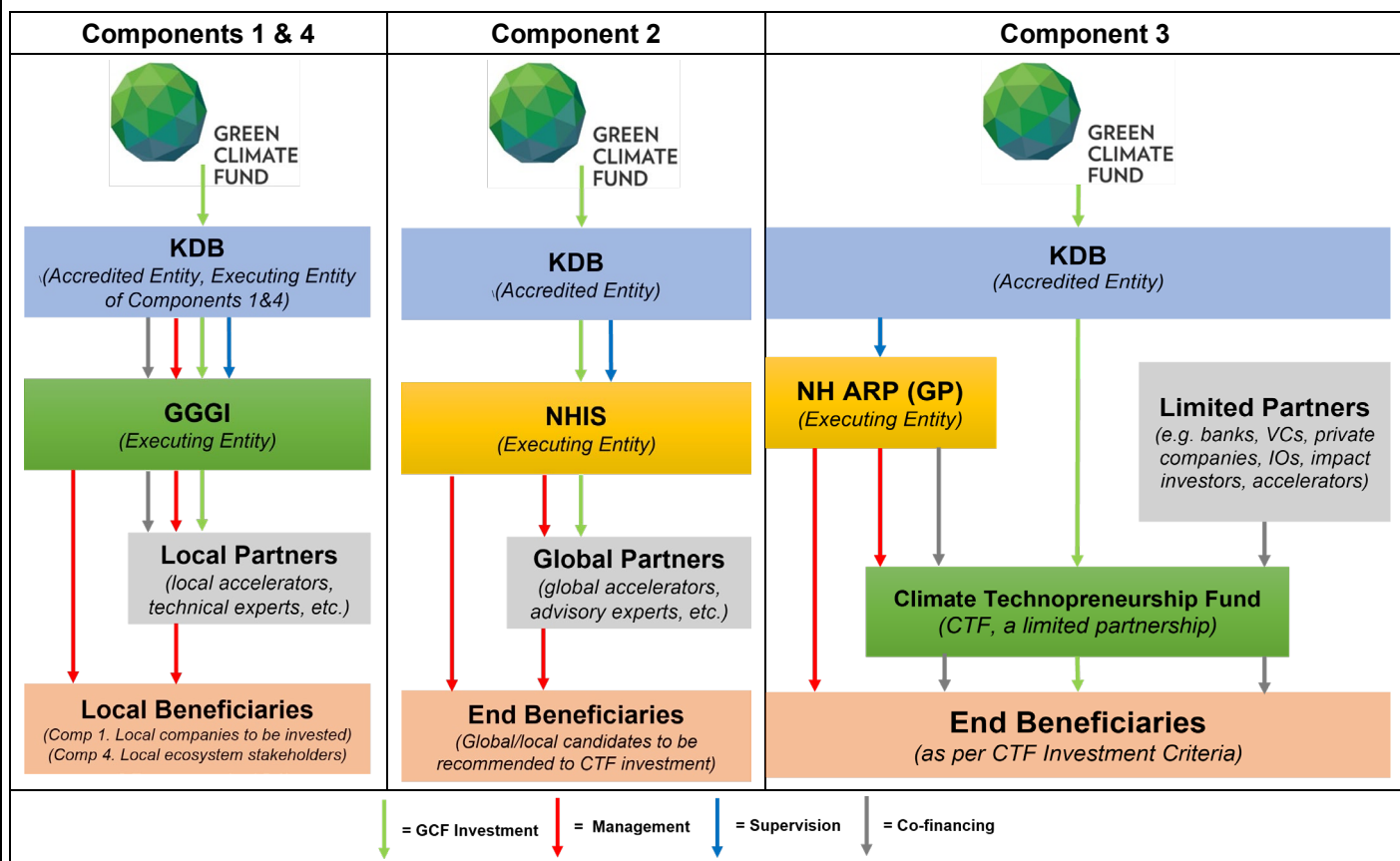


Pre-Investment (6-8 weeks)	<u>Deal Assessment</u> (2 weeks)	<ul style="list-style-type: none"> All potential deal pipeline (from inbound/outbound) to be reviewed by investment managers Deal log to be presented in weekly investment review meetings Pre-due diligence: macro, industry and company specific attributes to be reviewed
	<u>Preliminary Review Committee (IC)</u>	<ul style="list-style-type: none"> Preliminary Review Committee to be called, composed of compliance and a respective climate impact manager (mitigation or adaptation) in addition to investment professionals
	<u>Due Diligence</u> (6-8 weeks)	<ul style="list-style-type: none"> Deal selection key metrics: business model, growth potential, sector, competition, founders, existing shareholders, etc. Rigorous modelling of projected financials to be added On-site visit or virtual meeting with top management NH-wise research capability in Southeast Asian countries Review terms and conditions that relate to KDB/GCF standards – e.g., E&S risk assessment, gender mainstreaming, and climate impact measurement
Execution (2 weeks)	<u>Investment Approval – Investment Committee (IC)</u> (2 weeks)	<ul style="list-style-type: none"> Each IC member receives a pack of reports on the deal, prepared by investment managers. IC called when investment managers come to a firm decision IC responsible for investment decision making outcomes (performance)
Risk management	<u>Monitoring</u>	<ul style="list-style-type: none"> Quarterly review on financial, commercial, and operational (including safeguards such as E&S, gender, and climate impact outcomes) performance In cases of underperforming portfolio companies, investment managers to consider disposal in secondary market, among others

To strengthen the organic connectivity of the programme's four components and ensure more effective execution, NH Investment & Securities along with NHARP plan to establish "Team NH". This team will form an execution Task Force for Components 2 and 3, clearly defining the roles and responsibilities of participating personnel. Subsequently, Team NH aims to further leverage NH Financial Group's internal network and capitalise on professional resources for the programme success including a success of the fund close.

Implementation Structure with Capital Flow and Legal and Contractual Arrangements. Under KDB oversight and supervision in compliance with two bilateral agreements with the GCF – i.e., the Accreditation Master Agreement (AMA) and the Funded Activity Agreement (FAA), the programme's four components will be operational with different legal and contractual arrangements. Due to such varying engagement structures with different executing entities and local and global partner entities, the capital flow varies by component accordingly.

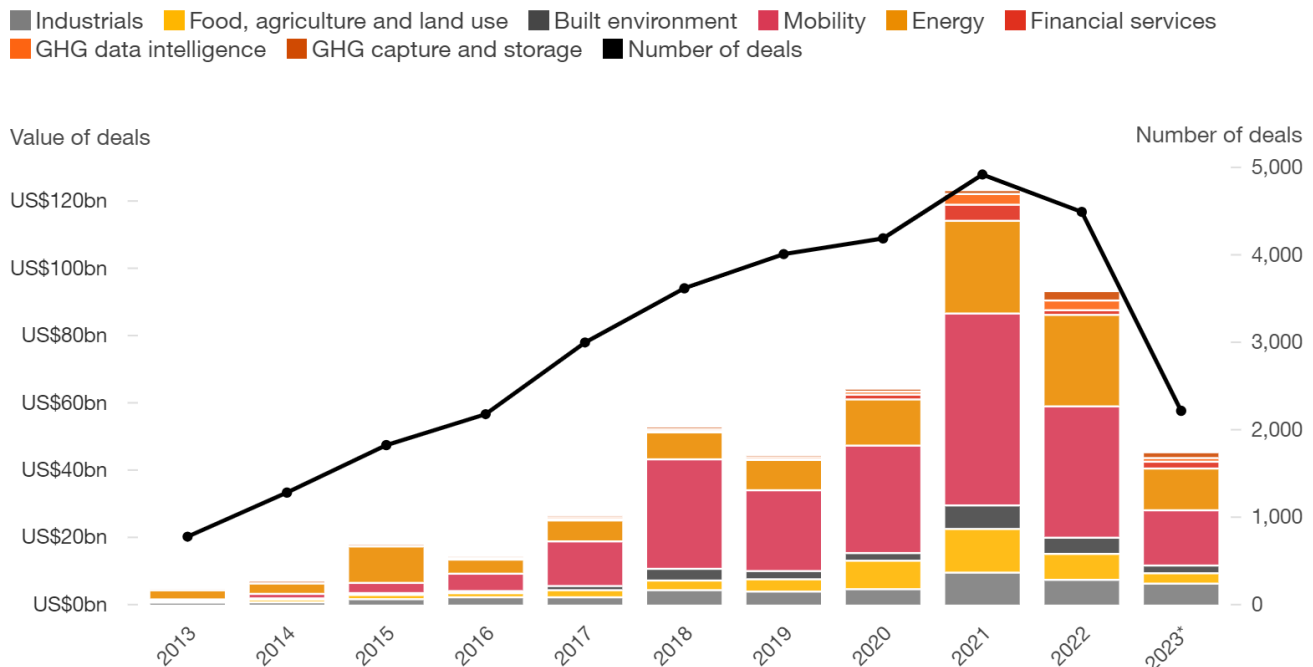
Component-wise Implementation Structure



B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

Make it Work for NOL Countries across ASEAN in Dire Need of Investment in Climate Responsive Technology and a Funding Shortfall. PwC's fourth *State of Climate Tech* report (PwC, 2023²⁷) reveals a drop of investments in climate technology start-ups and ventures back to the level of five (5) years ago. The report emphasises that much larger amount of innovation funding is critical for the needed technologies with abatement and adaptation challenges to reach scale in constrained surrounding circumstances.

Climate Technology Investment Trends (Yearly)



*Data for 2023 is current through the third quarter of the year.
Source: Pitchbook, PwC analysis

It is amply recognised by sources that investments in climate technologies are heavily concentrated in some developed markets and China (PwC, 2020).²⁸ In reality, such disproportionate capital distribution is not a surprising discovery. The ASEAN bloc has definitely remained the neediest in relation to capital inflows and investments in climate responsive technologies, and the gap is being further exacerbated by the unexpectedly prolonged post-pandemic emergence.

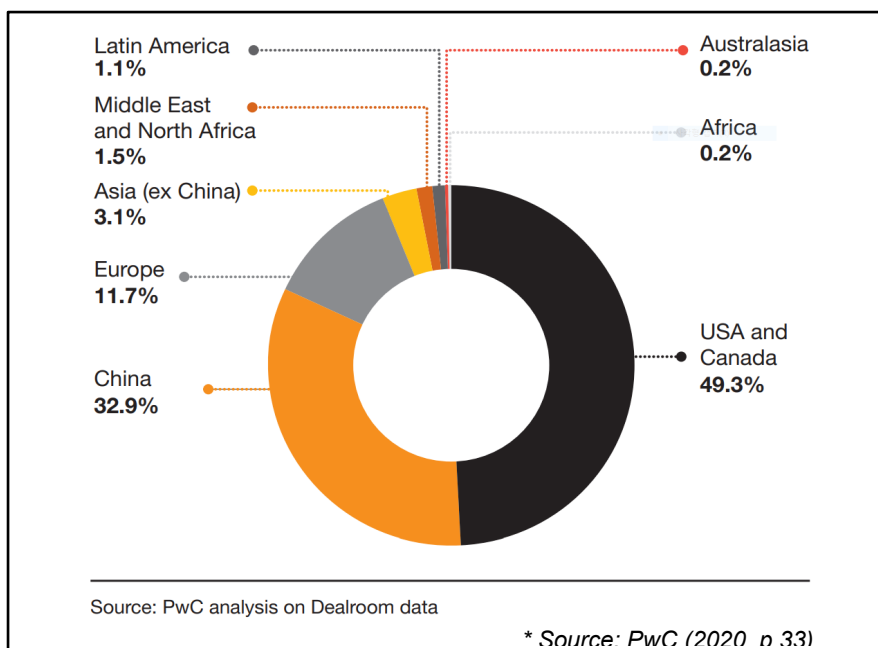
Such unfavourable situation is further compounded by the global economic slowdown coupled with the geopolitical unrest, inflation and interest rate hikes. According to the World Bank, in its recent *Global Economic Prospects* report (2022), a prolonged period of soaring inflation and frail growth is expected, potentially leading up to severe repercussion on low- and middle-income economies.²⁹ Investors and enterprises are hesitant to enter into markets that have yet to recover from the utterly catastrophic pandemics, halting the planning of investments into developing and emerging markets. All in all, while developing and emerging markets are disproportionately severely impacted by the economic hardship, the recent downward trajectory of venture funding deals is evident across the globe.

²⁷ PwC. 2023. *The State of Climate Tech 2023: How can the world reverse the fall in climate tech investment?*

²⁸ PwC. 2020. *The State of Climate Tech 2020: The next frontier for venture capital.*

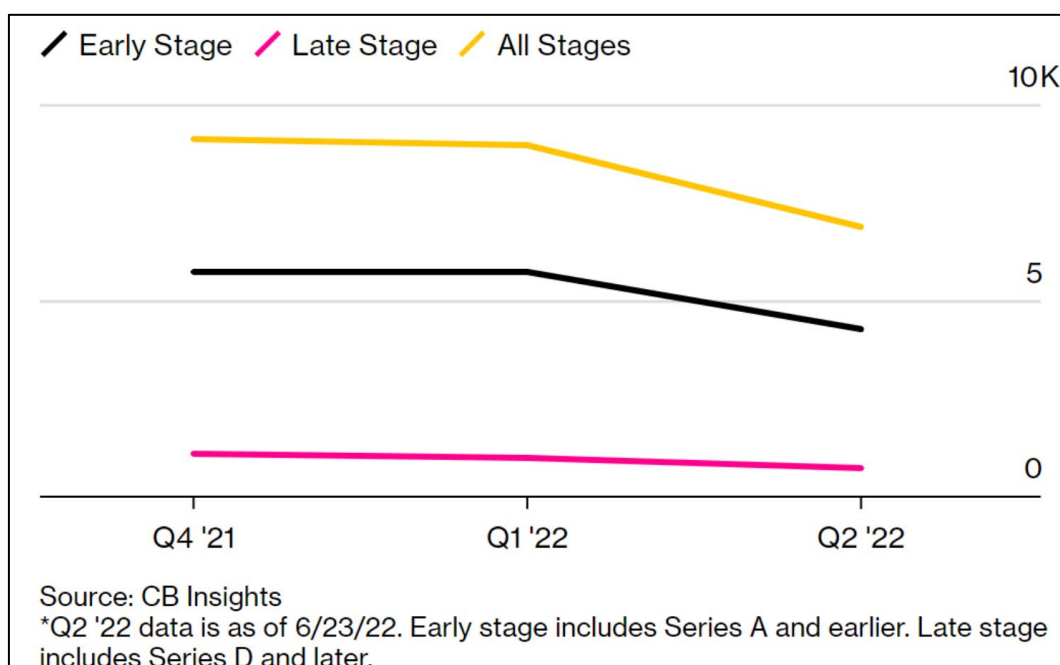
²⁹ World Bank. 2022. *Global Economic Prospects, June 2022*. Washington, DC: World Bank. doi: 10.1596/978-1-4648-1843-1.

A Geographical Split of Climate Technology Start-up Investments



The programme, in particular Climate Technopreneurship Fund (CTF), also faces challenges in attracting co-financiers in times of such turbulence in addition to delays in the GCF board approval which would not have hindered potential co-investors to allocate investment proceeds as per their business strategy and outlook otherwise. In light of such imperative investment needs, the GCF engagement as an anchor investor with a first loss risk capital is well-aligned with its mission of assisting developing countries in leapfrogging climate challenges. Such support from the GCF could not have come at a more opportune period, where climate technology acceleration in the emerging economies would call for catalytic, patient capital that would work as a de-risking mechanism to accelerate private investment in decarbonisation and climate resiliency. KDB will join forces with the GCF to catalyse capital for the five ASEAN countries in dire need.

Slowdown of Venture Investment at All Stages (Q4 '21- Q2 '22)

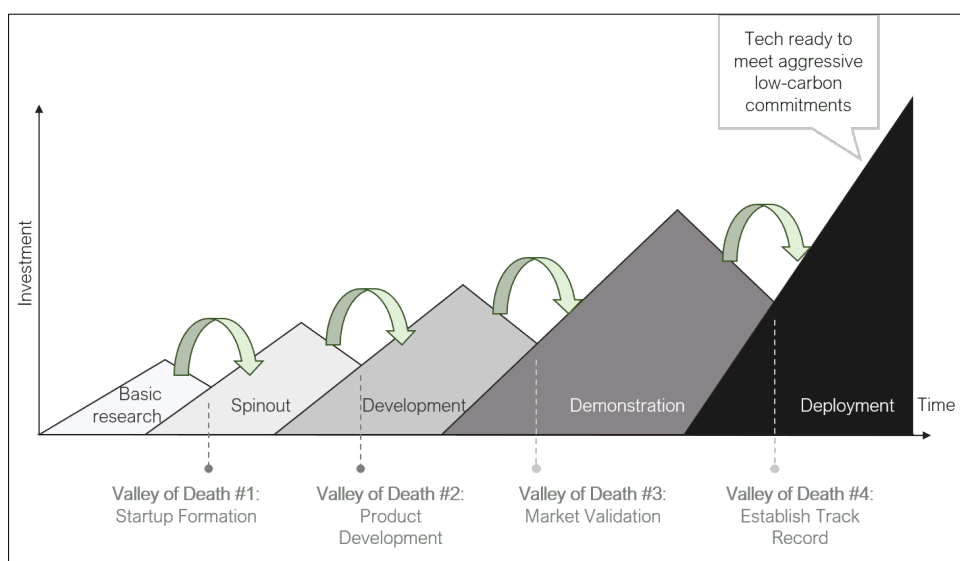


Financing Barriers Holding Back Climate Technology-enabled Solutions from Flourishing across the ASEAN Bloc. Finance poses a strong barrier in keeping technology-enabled climate solutions from reaching commercialisation. Low-carbon and climate responsive technologies is in need of not only longer investment horizons but also a more holistic cost-benefit approach justifying enhanced resilience, health-related benefits, prospective energy savings, and evaded ecological harm (Pigato et al., 2020).³⁰ Obviously, dedicated long-term and sufficient patient funding is necessary for entrepreneurs over the course of the early stages of development. Unfortunately, such funding needs become more acute, chronic in fact, when it comes to entrepreneurs with little to no track record in the developing world with a perceived higher risk. A more severe funding gap is identified with entrepreneurs with innovative – in other words, not commercially proven – technology-driven climate solutions, and the level of acuity has increasingly risen as the climate change phenomenon intensifies in frequency and magnitude.

The programme extends over the three challengeable facets that drive entrepreneurs forced into a corner: i.e. newly set up JVs or partnerships with little to no track record (facet 1) in emerging markets (facet 2) for technology-intensive actions (facet 3). At this juncture, GCF has an inevitable role as the world's largest climate financier to perform for the sake of great strides in developing and emerging markets where technology-driven climate solutions are highly insufficient, but so desperately needed. The programme, by enabling the development of low-carbon, environmentally-friendly businesses, could in turn contribute to the economic stabilisation of the ASEAN region and beyond in the long run.

The Programme Shall Invite Long-Standing, Patient Funding Needed to Bridge Four Valleys of Death in Accelerating Climate Responsive Technology Business Deployment. The programme will bridge four valleys of death that under-resourced entrepreneurs are predestined to cross as their climate technology business blossoms: (1) start-up formation; (2) product development; (3) market validation; and (4) track record establishment (Wang and Yee, 2020).³¹ Components 1 and 2 plan to address the first and second valleys of death with grant proceeds via which entrepreneurs benefit from start-up JV formation and market-fit product invention under a collaborative R&DB growth platform.

Climate Technology's Four Valleys of Death



(Source: Wang and Yee, 2020)

³⁰ Pigato, Miria A., Simon J. Black, Damien Dussaux, Zhimin Mao, Miles McKenna, Ryan Rafaty, and Simon Touboul. 2020. *Technology Transfer and Innovation for Low-Carbon Development*. International Development in Focus. Washington, DC: World Bank. doi:10.1596/978-1-4648-1500-3.

³¹ Wang and Yee. Climate Tech's Four Valleys of Death and Why We Must Build a Bridge. *Third Derivative*, accessed on June 17, 2020.

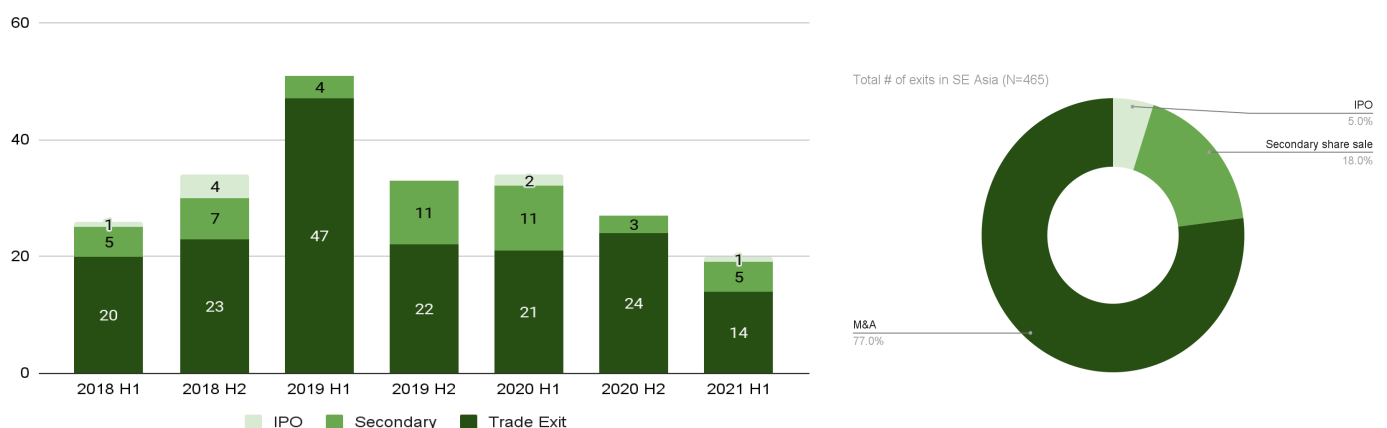
Rendering and Invigorating ASEAN Venture Capital Financing with Catalytic First-Loss Capital. A catalytic first-loss instrument is a must to render venture capital investments appealing and crowd in private capital in a nascent but growing climate technology-themed investment market. In actual, real-world experiences reveal a commonly practiced venture capital market trajectory that private parties, such as venture capitalists, would absorb the first loss up to a pre-negotiated threshold – as a matter of fact, pre-ordered by institutional investors of a stronger bargaining power – prior to the commencement of risk sharing, which has led to skewed capital flows towards stable and low-risk safe markets. In this regard, GCF’s catalytic role is vital as the world’s largest climate financier; under the global climate finance architecture, no alternative distinguishes itself with catalytic finance at scale. The programme anticipates that GCF’s catalytic role be distinctive beyond the above-mentioned default approach so that it can eventually render the ASEAN-centric investments in the first-ever climate technology transfer initiative.

As an investment vehicle of Component 3, the Climate Technopreneurship Fund (CTF) of USD 200 million will be structured with a catalytic first-loss instrument that is funded by the GCF equity proceeds. The GCF’s first-loss equity funding as a junior tranche will be a strong signal for the ASEAN-wide VC market by enhancing the fund’s credit worthiness, thereby resulting in successful private capital mobilisation under a challenging theme of the programme: i.e., ‘climate technology’, ‘start-up JVs’, and ‘emerging markets.’ The unprecedented first-loss protection mechanism will leverage much larger volumes of co-financing capital than the fund could mobilise on its own in the absence of the GCF’s catalytic first-loss capital, laying the foundation for investment flows into underserved or untouched climate technology-driven markets.

B.6. Exit strategy (max. 500 words, approximately 1 page)

Evidence-based Exit Strategy. The GP shall discern the most viable strategy for exiting each business. While exit strategies are necessarily specific to each investment, the GP expects around 10% of its fund portfolio to achieve one of three forms of exit, generating varying amounts of proceeds relative to the investment: i.e., trade sale, secondary sale, and IPO, according to the GP’s analyses on start-up exit data collected on its own, as shown below.

Historical Exit Trends in Southeast Asia (2013-2020 Cumulative) and Liquidity Events



(Source: CB Insight)

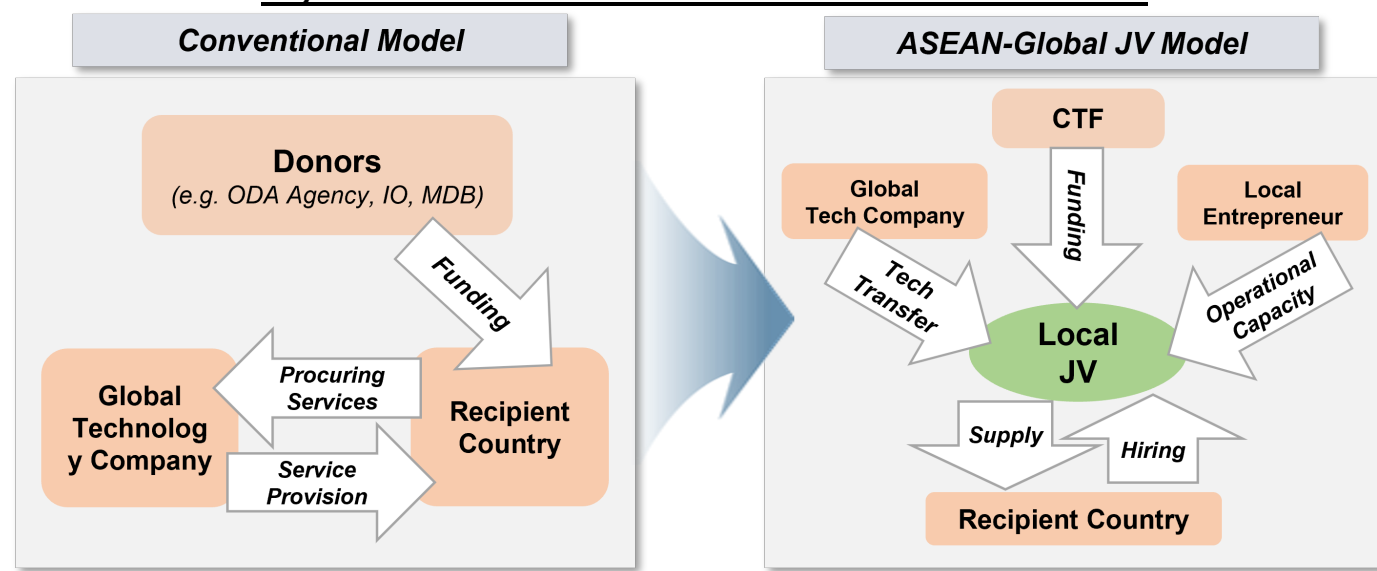
The most likely scenario for exit is via trade sale to a strategic acquirer, consistent with historical trends for the region. It is deemed that a “local-to-local in-industry sale,” where a local company in the same industry acquires the portfolio company, will be the most likely outcome of the fund’s investments. Alternatively, but less commonly, the fund may realise its investments through secondary share sales to investors coming

into investment rounds subsequent to the establishment of the fund. Despite the dearth of IPO exits to date for Southeast Asian companies, wherever feasible, the fund will work with its investment portfolio to guide these companies toward becoming publicly listed on a capital market exchange. The GP will consider the following key factors when deciding on an exit strategy: the extent of the fund's investment control, additional capital required by the portfolio company, suitability of acquisition by a strategic third party, public market appetite, and urgency for liquidity.

Post-Exit Sustainability in Pursuit of a Genuine Paradigm Shift. An answer to post-exit sustainability lies in the programme's core concept itself – JV (or partnership) formation. Most of the conventional international development cooperation projects used to subcontract global technology companies and/or suppliers so that a substantial amount of aid proceeds from donors have been given to foreign entities in the form of service fees. In particular, one-time basis grant-funded initiatives are quite often demanding to sustain when initial funding is over with personnel turnover and an exit of foreign entities, like global consulting firms and technology advisory providers. The programme therefore devises a proposal of replacing the conventional trajectory with locally owned JVs as the enablers that ensure sustainability at the local level. As a core instrument of sustainable businesses, ASEAN-Global JVs (or partnerships) with strong local ownership will run the marathon, not sprints, beyond the life of funding so as to be instrumental in bringing about the impacts and benefits of innovation even after the GCF and KDB exit.

The programme's sole private investment component, i.e., Climate Technopreneurship Fund (CTF) under component 3, will bolster the confidence of ASEAN-Global JVs (or partnerships) in ensuring sustainability from contextual adjustments of technology solutions to replication of climate businesses at scale. Sustainability of the programme participants and their businesses will be architected through the long-term structure of the CTF, under which the GP will orchestrate components to optimise support measures for building the skillset and resilience of JVs (or partnerships) and bring them in a formal reporting and auditing mechanism. The JVs will undergo additional due diligence by the GP at a transaction level to ensure that the partnership has been established on a sound legal, reputational, and financial foundation and, adheres to the necessary anti-money laundering, anti-terrorism, anti-bribery, and anti-corruption, and FCPA laws, among other compliance requirements. In addition to actively engaging with each of the developed partnership, the GP will make continuing efforts to attract new investors and create networking opportunities for the programme's ASEAN participants and potential investors and stakeholders. With this, the fund-backed climate responsive ventures will prove the ingenuity of the JV model centred on a fundamental proposition that bankability is key to post-exit sustainability.

Beyond Conventional Model: JV as a Local Sustainable Enabler



C. FINANCING INFORMATION						
C.1. Total financing						
(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount			Currency		
	104.471			million USD (\$)		
GCF financial instrument	Amount	Tenor	Grace period	Pricing		
(i) Senior loans	<u>Enter amount</u>	<u>Enter years</u>	<u>Enter years</u>	<u>Enter %</u>		
(ii) Subordinated loans	<u>Enter amount</u>	<u>Enter years</u>	<u>Enter years</u>	<u>Enter %</u>		
(iii) Equity	83.75	11 years	3 years of extension possible	13.9% IRR (indicative)		
(iv) Guarantees	<u>Enter amount</u>	<u>Enter years</u>				
(v) Reimbursable grants	<u>Enter amount</u>					
(vi) Grants	20.721					
(vii) Results-based payments	<u>Enter amount</u>					
(b) Co-financing information	Total amount			Currency		
	116,743,900			million USD (\$)		
Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
GP	<u>Equity</u>	<u>2</u>	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter%</u>	<u>junior</u> <u>(Subordinate to GCF)</u>
LPs	<u>Equity</u>	<u>114.25</u>	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter%</u>	<u>senior</u>
KDB	<u>In kind</u>	<u>0.1</u>	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter%</u>	<u>Options</u>
GGGI	<u>In kind</u>	<u>0.3939</u>	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter%</u>	<u>Options</u>
(c) Total financing (c) = (a)+(b)	Amount			Currency		
	<u>221.2149</u>			<u>million USD (\$)</u>		
(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)	Please explain if any of the financing parties including the AE would benefit from any type of guarantee (e.g. sovereign guarantee, MIGA guarantee). N/A. The programme does not benefit from any type of guarantee mechanism.					
	Please also explain other contributions such as in-kind contributions including tax exemptions and contributions of assets.					
	In addition to the indicative financing plan above, the programme additionally anticipates cash and/or in-kind contributions from participating global and local enterprises in buying the JV (or partnership) ownership interests: e.g., capital, physical assets, and IP rights.					
	Please also include parallel financing associated with this project or programme (refer to the co-financing policy). The programme anticipates potential parallel financing from various sources, including but not limited to Korea International Cooperation Agency (KOICA), the Korean Ministry of SMEs and Startups (MSS), Food and Agriculture Organisation					

(FAO) of the United Nations, and Korea Meteorological Institute (KMI). Each entity that expressed interest with a supportive willingness has been operating under different timelines and procedures for budgeting and disbursement approval with differential funding windows and implementation tracks (e.g., fast-track aligned with the GCF processing for the Funded Activities). In pursuit of investment at scale, a series of practical discussions on parallel finances between KDB and these potential partners have been in progress.

C.2. Financing by component

Component	Output	Indicative cost million USD (\$)	GCF financing		Co-financing**		
			Amount million USD (\$)	Financial Instrument	Amount million USD (\$)	Financial Instrument	Name of Institutions
<u>Component 1</u>	<u>Output 1</u>	<u>6.171</u>	<u>6.071</u>	<u>Grants</u>	<u>0.1</u>	<u>Grants</u>	<u>KDB (in-kind)</u>
<u>Component 2</u>	<u>Output 2</u>	<u>9.5</u>	<u>9.5</u>	<u>Grants</u>			
<u>Component 3</u>	<u>Output 3</u>	<u>200</u>	<u>83.75</u>	<u>Equity</u>	<u>114.25</u>	<u>Equity</u>	<u>LPs</u>
					<u>2</u>	<u>Equity</u>	<u>GP</u>
<u>Component 4</u>	<u>Output 4</u>	<u>4.5531</u>	<u>4.5531</u>	<u>Grants</u>			
<u>PMC</u>		<u>0.9908</u>	<u>0.5969</u>	<u>Grants</u>	<u>0.3939</u>		<u>GGGI (in-kind)</u>
Indicative total cost (USD)		<u>221.2149</u> million	<u>104.471 million</u>		<u>116.7439 million</u>		

* Above figures are indicative with being rounded.

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities?

Yes ☒ No ☐

C.3.2. Does GCF funding finance technology development/transfer?

Yes ☒ No ☐

The main purpose of the programme is to support the five ASEAN countries in building capacity in order to be able to uptake climate responsive technologies from the global supply chain, self-deploy, and sustain the technologies at scale in pursuit of a genuine technology transfer. In other words, the kernel of this proposal is technology development (customisation) and transfer. In particular, the programme takes a market-driven approach in the belief that success – i.e., self-sustainability – can be achieved only through impact investing-oriented acceleration and consulting services.

In fact, the local markets have witnessed an oversaturated supply of early-stage start-up support services with the generosity of international donors, but graduates from such one-off grant provisions have not led to incoming investments at scale; a problematic status quo. With that in mind, the programme requests grant and equity proceeds of the GCF to deploy the funds appropriately throughout the whole systemic process of technology innovation amongst a range of interacting actors; above all things, devised business models to materialise in the nascent markets. Below is an indicative list of prospective activities, in that R&DB acceleration consulting services are personalised for individual JV teams. Additional detail is provided in both the Demand-driven and Supply-driven Feasibility Studies of Annex 2.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section refers to the performance of the project/programme against the investment criteria as set out in the GCF's [Initial Investment Framework](#).

D.1. Impact potential (max. 500 words, approximately 1 page)

Outcome Estimation via Virtual Demand-Supply Technology Matchmaking. As specific technologies, project proponents, and their product specifications are to be identified after JV (or partnership) matching – i.e. little information available on technical specifications, performance, costs, and baseline, the proposal estimates climate impacts with an investment portfolio scenario of the CTF with the total capitalisation of USD 200 million plus the additional programme costs that support the delivery of the mitigation and adaptation outcomes. The forward-looking scenario results from ex-ante technology match between demand and supply assessments and adjusted allocation of investment volumes to virtually matched technologies. See Annex 17, 22, 23, and 24 for detailed description on chosen methodologies for calculation, additionality of assessed technologies against individually set baselines, assessment of common practices, and indicative estimation on potential outcomes by country.

The programme will support new ventures and their technology transfer activities over 39 individual technologies across seven technology groups in five countries. The CTF aims for equal funding distribution across the five countries, but there is still considerable uncertainty about how the funding will be distributed across the technology groups and individual technologies. At the same time, insufficient information – e.g., venture growth and sales data – is available at this programme designing and development stage to evaluate a specific portfolio of investments and technology interventions within the technology groups.

The dimensions of the sectors, measures, and ventures will not be known until R&DB acceleration services and investments are fully implemented; the value of these mitigation and adaptation impacts is extremely difficult to predict at this juncture. As a result, the calculated ex-ante mitigation and adaptation impacts are considered conservative at this stage. However, the mitigation impacts and adaptation beneficiaries will be closely monitored and managed on an annual basis in accordance with the MRV protocol and implementation plan (to be developed as Component 4.3.1 deliverable).

Ex-ante Impact Estimates – Mitigation. Benchmarks were identified from publicly available information. Where available, benchmarks specific to the five countries represented in the funding proposal or specific to Southeast Asia were selected. In some cases, only global average or project-specific benchmarks were available. An effort was made to find the most recent benchmark data available.

Sources of benchmark data include, in order of preference:

1. Benchmarks based on aggregated cost and emission impact data from multiple projects. Examples include data from IRENA, IEA, and other trade and technology associations and NGOs.
2. Marginal emissions abatement cost curves from NGOs, trade and technology associations, and similar organizations
3. Peer-reviewed academic publications
4. Documents from the implementation of individual projects or programs, including GCF funding proposals, case studies, CDM project design documents, and other similar sources

For each technology group, two individual technologies were selected. Where possible, technologies with the broadest applicability across the five countries were selected. For each individual technology, two benchmarks were identified using the criteria described above.

Selected Individual Technologies for Benchmarking

Technology Group	Selected Individual Technology	Applicability				
		C	I	L	P	V
Renewable Energy Generation	Solar energy	X	X	X		X
	Wind energy			X		X
Transmission, Distribution, and Electricity Storage Systems	Off-grid Energy Systems	X		X	X	
	Battery Storage	X			X	
Low-emission transport	Electric Vehicle infrastructure	X		X	X	
	Electric Vehicles	X	X	X	X	X
Residential and Industrial Energy Efficiency Technologies	Lighting	X		X	X	X
	HVAC	X		X	X	X
Waste Management and Treatment	Composting	X	X			X
	Mechanical-Biological Treatment	X	X	X	X	X

In some cases, additional calculations and assumptions were required to transform the available benchmark data into the appropriate units. In other cases, additional data, such as the grid emission factors for the five countries, were needed to complete the calculations. In all cases, the assumptions are documented in the model and the source of data is identified and linked (if available online). Wherever benchmark development required the selection from multiple values or a range of values, values resulting in conservative impact estimates (*i.e.*, a higher USD per tCO₂e of mitigated emission) were selected.

For each technology group, an average of the benchmarks representing the selected individual technologies was calculated. The total mitigation impact was then estimated by applying a series of assumptions from the Funding Proposal about the distribution of the total funding amount in the proposal.

- It was assumed that 50% of the total funding would be distributed to mitigation technologies, with 50% being distributed to adaptation technologies; especially, at least 50% (or more) of the CTF funding would be allocated to the GCF adaptation result areas. This resulted in an estimate of approximately \$100M in funding distributed to mitigation.
- It was assumed that the funding would be distributed equally among the five countries (20% each).
- An impact multiplier of 2.2x was applied to the mitigation funding allocation to account for the fact that the fund will take only a partial stake in the ventures and that their capitalization will grow during the fund life.

Ex-ante Mitigation Impact Estimate Model Results (Mitigation)

Model Results	Total	Per Country
Funding allocated for mitigation (USD)	\$100,000,000	\$20,000,000
Fund-Level Mitigation Efficiency Benchmark (USD/tCO ₂ e)	\$134.17	
Expected Mitigation Impact (tCO ₂ e)	1,639,681	327,936

The ex-ante impact estimates generated by this model are likely to be highly conservative due to the nature of the programme relative to the benchmarks used. Rather than investing in individual mitigation projects, the programme, through its venture acceleration and capital investments, is seeking to build enterprises that will persist in the market following the fund's exit, and that will help create a market ecosystem for the technologies and a multiplier effect for their deployment and implementation. It presents a conservative measure of 1,639,681.

RESULT AREAS	lifespan GHG emission reduction	Implementation period GHG emission reduction
m1	521,717 tCO ₂ eq	191,296 tCO ₂ eq
m2	1,043,433 tCO ₂ eq	382,592 tCO ₂ eq
m3	74,531 tCO ₂ eq	27,328 tCO ₂ eq
total	1,639,681 tCO ₂ eq	601,216 tCO ₂ eq

Ex-ante Impact Estimates – Adaptation. The methodology developed for the ex-ante estimates is a bottom-up approach based on a benchmark study of approved project examples (full proposals approved by the GCF, as well as from the Asian Development Bank and the World Bank). The methodology includes some examples of mitigation technologies that explicitly generate adaptation benefits or co-benefits, as clarified in full proposals or other benchmark sources used for the mitigation ex-ante impact estimate. From reviewing actual financed projects, it was possible to identify the efficiency figure (US dollars invested per beneficiary) from each example and then find the average efficiency figure across multiple projects to settle on a programme-level benchmark figure. The figure was used as the denominator for dividing the total programme capital for adaptation (technical/venture accelerator assistance and plus the venture fund capital, multiplied by 2.2. – the venture capital model multiplier, as explained in annex 22).

This resulted in the estimated impact – the number of direct and indirect program beneficiaries, disaggregated by gender. The estimated number of beneficiaries should be seen as a reference point rather than a minimum target or projected ceiling, given project specific intervention and contextualisation are essential to assess adaptation impacts.

The steps used to implement this method are as follows:

1. Identify a representative sample of project examples for project technologies (refer to Section B1 of the Funding Proposal and Annex 23 for details on technology groups and individual technologies).
2. Calculate each project example's efficiency figures (for direct and indirect beneficiaries).
3. Calculate the average efficiency figures (direct and indirect beneficiaries) for each adaptation technology group (or mitigation technology group with adaptation co-benefits) included in the KDB funding proposal.
4. Calculate the average efficiency figures (direct and indirect beneficiaries) for all technology groups considered in the steps above (aggregate figure from steps 1-3 above).
5. Divide the total amount of programmatic and investment adaptation capital of the R&DB Programme (based on a targeted programme and capital allocation of 50% to adaptation and 50% to mitigation) by the efficiency figures found in step four to obtain the final ex-ante impact estimate – the number of direct and indirect beneficiaries - at the programme level.
6. Apply figures from country statistics on the percentage of female population to identify the number of female direct and indirect beneficiaries.

The detailed modelling is presented in the Annex 22 spreadsheet. The model's characteristics and boundaries, assumptions, and limitations are shown below.

Model Boundaries

- The adaptation outputs are delivered through financed climate technology-led interventions (ventures applying and bringing to market equipment, tools, services) with related capacity building to deploy and maintain the technologies. Therefore, TA/capacity building and investment capital figures are both utilised for total adaptation spend. Project management, supervision, monitoring, and reporting expenses are also included, as these are intrinsic to the venture capital fund's implementation and compliance with GCF requirements.
- Projects from all four adaptation and cross-cutting technology groups included in the Funding Proposal (Agricultural Technologies & Practices, Water Management & Treatment, and Waste Management & Treatment) are benchmarked. In addition, as mentioned above, benchmarks and project examples from mitigation technology groups that provide adaptation co-benefits were also included in the model.

Model Assumptions

- Total fund investment - USD 220,000,000 - the total investment size (programmatic and investment capital) multiplied by the venture capital financial multiplier of 2.2. The amount from this step is then multiplied by the correspondent percentage allocation to adaptation (50%) and by the percentage allocation to mitigation (50%).
- Country-by-country allocation – equal distribution between the five programme countries.
- Female population: 49.9% (average from the population of the five countries, according to the World Bank Data)
- Indirect beneficiaries: for project examples that did not disclose the number of indirect beneficiaries, we applied the average difference (2.1) between direct and indirect beneficiaries found across the project examples that disclose such information. Such average calculation discounts the outliers. Further, this average was not applied to the mitigation technologies examples with adaptation co-benefits, as the examples from this group did not provide data on indirect beneficiaries.
- Seven adaptation project technologies have been captured –as representative technologies, i.e., those with significant demand according to the country Demand Analysis (detailed in Annex 2). As for the mitigation technology groups, data was found for six individual technologies with adaptation co-benefits.
- In some cases, a single project example offered interventions targeting more than one adaptation or mitigation technology group. In those cases, the total beneficiaries and project amount were equally divided between the individual technologies to find the efficiency figure for their respective technology groups.
- Project examples for benchmarking were drawn from Southeast Asia whenever possible.

List of Representative Adaptation Technologies for Benchmarking

Technology Group	Individual adaptation technologies
Agricultural Technologies & practices	Climate Resilient Agriculture (precision farming, integrated farming, conservation agriculture, sustainable rice cultivation, agro-forestry, crop-diversification, adapted plants and animal genetics/breeding, pest management, water harvesting, retention, and efficient irrigation RE-powered equipment (i.e., pre- and post-harvesting processing))

	Aqua/mariculture development (Mapping changes in the range of fish species, monitoring of fish stocks, Improved allocation of areas for fishing, Changes to fishing gear and fleet, Adjusting fishing fleet composition, RE-powered equipment, i.e., for storage, and processing)
Water Management & Treatment	Water treatment (small scale)
	Water treatment (large scale)
Waste management & treatment (adaptation)	Large-scale waste collection and treatment (i.e., mechanical-biological treatment, aerobic/semi-aerobic digestion, composting), including or not the conversion of gases to energy
	Large-scale waste collection and treatment (i.e., mechanical-biological treatment, aerobic/semi-aerobic digestion, composting), including or not the conversion of gases to energy

List of Mitigation Technologies with Adaptation Co-Benefits

Mitigation tech group with adaptation benefits	Individual Technology
Renewable Energy Generation	Solar
Transmission, distribution and Electricity Storage	Off-grid energy systems
	Battery storage
Residential and Industrial EE Technologies	Lighting
Waste management & treatment (cross-cutting)	Composting
	Mechanical Biological Treatment

Ex-ante Adaptation Impact Estimate Results

Direct beneficiaries (total)	Direct beneficiaries (female)	Indirect beneficiaries (total)	Indirect beneficiaries (female)
1,180,881	589,260	1,132,408	565,071

“Innovation and Additionality Tool (IAT) Scoring Methodology” with a Robust Project Selection Investment Tool (Annex 21). As per the adjusted ex-ante simulation, the best impact scenarios are 1,138,106 tCO₂eq and 1,180,881 direct beneficiaries (ca. 50% of female ratio). By programme nature, estimated impacts expect backward-looking discrepancies, depending on unexpected demand-supply technology match, the fund’s real-time risk tolerance, and investing time horizon. While paying heed to such potential discrepancies, the programme shall take three-layered actions to achieve intended, or higher, mitigation and adaptation targets: (i) readiness and acceleration support for JV candidates to extract measurable impacts; (ii) CTF Investment Committee’s robust Project Selection Tool; and (iii) third-party independent verification on submitted impacts. Once a technology-enabled climate project is determined, the CTF will monitor invested JV’s self-reporting on impacts throughout the fund lifespan, and will annually report outcomes to KDB, which will be verified by periodic site visits of KDB, both in communication with the GCF and in collaboration with executing entities and other engaging partners.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

Paradigm Shifting Fundamental Transition Sought. The programme shall initiate, support, and drive the five countries to grapple with innovation-triggered transformation towards low-carbon and climate-resilient development pathways, completely away from climate-damaging and highly inefficient technologies. In order to achieve this, it does intend to go beyond one-off action, ensuring a fundamental change in perception, structural adjustment for innovation, and new market segments, through customisation, scaling, and replication of transferred technologies.

It is believed that the programme will contribute to a genuine paradigm shift in three fashions. The first and foremost contribution is to introduce a term, *climate technology*, to local entrepreneurs and line ministries – what it refers to, why it is important and how both public and private sectors can shape the relevant ecosystems together. In fact, consultations during the PPF implementation have already initiated such deliberations amongst local stakeholders as they seized the concept within individual national contexts. Second, such heightened awareness will allow the emergence and growth of essential ecosystems such as regulators, policies, agencies, committees, innovation clusters, and VCs with contextual expertise, in the medium to long term phase. Further, the process may give rise to the ASEAN-unique ecosystem culture on the ground of shared values amongst ASEAN innovators, akin to that observed in Silicon Valley. Lastly, the programme will prove the workable innovation investment model which will serve as a standard financing model to encourage the community, including those not participating in the initiative, to move together.

- (1) **Cambodia.** There are barriers to education and access to information, particularly for women, due to prevailing social norms related to gender, and there is limited education in science, technology, engineering, and mathematics (STEM). This results in a limited understanding of climate technology and its economic, social, and environmental benefits. To foster access to markets and an enabling environment for the innovation of climate mitigation and adaptation technologies, greater support is needed in the form of technology transfer, education, and finance – exactly what the proposed project aims to offer.
- (2) As for **Indonesia**, the programme will kick start the advancement of traditionally under-tapped equity investment mechanisms in the country's start-up incubation and acceleration landscape. This truly remains a niche area, and thus has not garnered much attention from major investors. Thus, the programme's investment vehicle, CTF, will revamp already attractive start-up ecosystems of the country with great potential for a higher leap, shifting away from the current business-as-usual carbon lock-in pathway while replacing climate-damaging industries – e.g., mining, deforestation-linked commodity production – with alternative solutions enhanced by transferred technologies.
- (3) **Laos**-centred activities are to be implemented under the national-level strategic direction towards innovative, sustainable, and climate-resilient economy, with a strong emphasis on enabling entrepreneurial ecosystem formulation. Deploying risk tolerance capital, the programme shall create successful climate business cases of JVs (or partnerships) which should function as unprecedented best practices, trigger the green and climate market creation, and inspire policy makers to brainstorm contextually workable solutions for a true paradigm shift.
- (4) As for the **Philippines**, 'much-needed interventions' will be carried out, considering that the country has relevant institutions and passionate groups of players in the market but limited awareness of climate responsive technology hinders a more-sophisticated climate innovation leap. The programme's packaged interventions will gather young and fast learning entrepreneurs to uptake and sponge transferred technologies, delivering on a holistic approach on what parts of the climate technology customisation value chain should be further filled and strengthened.
- (5) **Vietnam.** Even for the emerging economy with vibrant moves amongst pioneering peers, the climate technology ecosystem still remains quite small and scattered with only a handful

of key stakeholders. The programme shall support the nascent yet vibrant ecosystem to awaken innovation potentials at a paradigm-shifting scale, through business acceleration services with a climate lens and substantial capital. This will provide a solid basis for enhanced regulatory frameworks with attractive policy incentives to attract global innovators beyond the lifetime of the programme.

Along with overcoming similar and/or different barriers by country, the programme ensures the following potentials – e.g., scaling up and replication, knowledge sharing and learning, formulation of enabling ecosystem including the regulatory framework and policies, and a comprehensive contribution to a low-carbon and climate-resilient growth pathway at a national and regional levels – that are instrumental to achieving a paradigm shifting transition across the NOL countries.

- **Potential for scaling up and replication:** The programme's basic concept is expected to have significant scaling and replication potential. The proposed intervention with GCF grant and first loss equity funding will pilot acceleration plus customised JV/technology transfer model. Through a successful rollout and lessons learnt from this intervention, the programme can be up-scaled in other developing and emerging countries while leveraging funding from various sources including the governments, MDBs, climate funds, bilateral donors, also private sector including impact investors and foundations. The market-driven platform for venture incubation/acceleration and VC investment as well as multi-country aggregation and programmatic approach demonstrated through this programme will be key in devising and implementing similar programmes in Africa and Latin America.
- **Potential for knowledge sharing and learning:** Introducing brand new terms and concepts, climate technology and acceleration, to the key local ecosystem builders is important. The market-driven intervention also embraces TA activities that will contribute to national-level and ASEAN-wide knowledge sharing and learning under Activity 4.1. and 4.3, for example. This grant-based supportive intervention aims to enhance the awareness of the relevant space, and promote and strengthen national/regional networks for climate technology innovation in the middle of developed communication channels.
- **Contribution to the creation of an enabling environment:** Component 4, a grant-supported TA element, will contribute to strengthening entrepreneurial ecosystems for climate technology and innovation in the five NOL countries by formulating the relevant network framework that is key to acceleration, building capacities of national accelerators and startup/business support entities, establishing national strategies, and offering policy and regulatory recommendations. These activities will allow the emergence and growth of essential enabling ecosystems such as regulators, policies, agencies, committees, innovation clusters, and VCs with contextual expertise, in the medium to the long-term phase. Eventually, all the activities and their outputs are anticipated to give rise to the ASEAN-unique ecosystem culture on the ground of shared values amongst ASEAN rooted innovators.
- **Contribution to the regulatory framework and policies:** The TA component will provide policy and regulatory recommendations which are fitting into each country under Sub-Activity 4.2.3. This will contribute to creating an enabling environment and business ecosystem which will ensure a genuine sustainability of the programme beyond the programme lifespan. Government officials and policy makers will actively involve throughout the programme implementation, contributing to coordinating a high-level inter-ministerial discussion and drafting policy recommendations.
- **Overall contribution to climate-resilient development pathways consistent with relevant national climate change adaptation strategies and plans:** A successful roll out of the programme will accelerate a genuine transition towards climate-resilient development pathways by strengthening national climate entrepreneurial ecosystems and by transferring

of technology-enabled climate solutions into five NOL countries. Climate technologies for transfer, localisation, and investment will be selected in line with national climate change adaptation strategies and plans of each country. NDAs and their line ministries of all the NOL countries will actively engage with the programme activities as a member of the Project Steering Committee at each SMU.

D.3. Sustainable development (max. 500 words, approximately 1 page)

Gender Co-benefits through the Emergence of Gender Mainstreamed Innovation Ecosystem with Talented Female Entrepreneurs. Besides the primary climate responsive impacts, the programme anticipates wide-ranging co-benefits that will contribute to the sustainable development of the five partner countries. As becoming sustainable does not happen overnight, this ASEAN region-wide climate technopreneurship initiative shall trigger the tuning of the entire ecosystem and market. Therefore, ensuring positive externalities are so comprehensive that it is actually demanding to single out certain co-benefits. Co-benefits may vary and differ by transferred technology and applied industry, and a technology generally brings about different kinds of benefits and impacts across the ecosystem value chain. As an example, climate-resilient agricultural technologies are prioritised by all the five countries as shown in Table 2. Such advanced technology-enabled agricultural projects can improve efficiency in agricultural land use by applying sustainable agricultural techniques into degraded areas (environmental), guarantee food security in climate-affected vulnerable communities (social), increase income generation of climate vulnerable farmers with better productivity (economic), and build women's capacity at higher level of supply chain such as processing and distributing benefits to women equally (gender co-benefits). Considering such uncertainty, the programme only concentrates on gender co-benefits that are crystal clear at present.

Alignment with the UN Sustainable Development Goals (SDGs). In that the overall ecosystem is to be covered under the programme, the technology transfer trial expects alignment with all of the 17 SDGs, in both direct and indirect ways. Real dynamics reveal that associations between or within SDGs and co-benefits are collectively exhaustive and not mutually exclusive. Nevertheless, the proposal shall anticipate and sort the directly linked alignment of 10 SDGs by gender co-benefit potential as below; e.g., SDG 10 (Reduced Inequalities) is excluded below, but the programme's endeavours to promote economic inclusion of all regardless of sex and ethnicity will contribute to eradicating inequality.

Alignment with SDGs and Potential Co-benefits

Alignment with 11 SDGs	Gender Co-benefits (Environmental Co-benefits – TBD per Tech)
SDG 2. Zero hunger with food security & nutrition	<ul style="list-style-type: none"> • Emergence of women-led/owned SMEs under gendered ownership and management structure • Girls and women's enhanced access to healthcare services, clean water and sanitation facilities, etc. • Women's active participation in climate technology relevant industries • Increased incomes amongst girls and women in agricultural areas vulnerable to climate change impacts • Women's advancement in skilled technology and engineering jobs
SDG 3. Good health and well-being	
SDG 5. Gender equality	
SDG 6. Clean water and sanitation	
SDG 7. Affordable and clean energy	
SDG 9. Industry, innovation and infrastructure	
SDG 11. Sustainable cities and communities	
SDG 13. Climate action	
SDG 15. Protect and restore forests, biodiversity	
SDG 17. Partnerships for the SDGs	

In Pursuit of Market-oriented Sustainability – JV as a Key Agent. The programme has a desire for JVs with full financial and intellectual supports to grow them as pioneers with a mission of greening the ASEAN emerging market. Contextually adjusted long-standing business operation of technology-transferred JVs (or partnerships) will function as the key market-driving agent for sustainable development, activating a number of co-benefits such as local job creation, expanded role for women in enterprise ownership and leadership roles, decent work with fair and safe working conditions, and local resource development – e.g., in terms of human resources, raising potential for under-resourced grassroots innovators to acknowledge what must be done and how the problem can be resolved, a vibrant gender-balanced society with talented women and girls' aspirations, and social inclusion of vulnerable communities with enhanced access to energy. Proactive interplay of the motivated and technology-transferred entrepreneurs will be central to the market's development and advancement, driving the national uplift in various fields of development. Furthermore, additional sustainability co-benefits include the incapacitation of the local JVs on climate technology innovation in the five countries to equip themselves with and be able to operationalise a proper environmental and social management system (ESMS) in accordance with the international safeguard standards for future climate technology innovation even after the CTF exit.

D.4. Needs of recipient (max. 500 words, approximately 1 page)

Outcomes of studies and analyses (see Annex 2) conclude that needs of the five participating countries are classified into three overall categories, though the needs vary by country, in both depth and feature: (i) weak regulatory framework; (ii) limited access to finance; and (iii) nascent or immature climate technology and innovation ecosystem. The programme shall embark on needs-specific technology transfer activities for five different countries, concentrating on (i) the establishing of a regulatory and policy framework, tailored to climate technopreneurs; (ii) addressing the financing gap through private sector capital crowd-in and equity investments at large; and (iii) nurturing a robust innovation ecosystem by awareness enhancement and capacity building assistance.

- **Cambodia's** corporate structure and business ecosystem is orientated around SMEs, accounting for circa 70% of employment, 99.8% of companies, and 58% of GDP. Surrounded by weak institutional environments for technology innovation, SMEs with a significant footprint have faced challenges, some of which include lack of skilled human resources and poor access to finance as most of them lack the necessary assets to secure credit. The missing middle backbone group, which are too high-risk to be attractive to global investors, will be served by the programme in various manners such as training local talents to be equipped with technology.
- **Indonesia.** Aligned with unprecedented challenges posed by COVID-19 and reallocation of climate priorities and budgets, in 2020, only 13% of the financing needs outlined in the NDC Mitigation Roadmap were addressed. With that, a vibrant private sector engagement with investment crowd-in into climate technology deployment is essential for Indonesia to meet its NDC commitments. In recognition of a harsh reality that the most marginalised group is more likely to experience loss and damage by shifting climate, the fastest adoption of climate technology solutions is urgent. There is no time to wait for the right technologies to mature through traditional cycles of trials and errors.
- **Laos** is seeking to improve overall sustainable management of national resources. Challenges in doing so have undermined the country's long-term development, exacerbated by double disasters of climate change and the pandemic crisis. The Lao PDR government is committed to enhancing access to finance for local entrepreneurs as well as strengthening regulatory and institutional arrangements. The programme will assist the government's novel mission by unlocking the role of under-resourced private sectors via technology trade at a corporate level, devising an innovation-intervened management

framework for the country's previous resources at an institutional level, and accompanying both public and private to run a race towards 2050 Net Zero emissions at last.

- **The Philippines'** needs arise due to (i) absence of a centralized repository of information and indicators and data on SMEs regarding climate change adaptation and mitigation; (ii) investment gap; (iii) limited availability of capacity building initiatives for climate technology firms; (iv) impact of the pandemic, community quarantine, and the resulting disruption in the supply chain and distribution channels; (v) low accessibility of public services designed to support entrepreneurs; and (vi) limited support on climate innovation activities. Filipino entrepreneurs will take advantage of the investment opportunities and incentives throughout the programme, witnessing improving market conditions and other enabling circumstances for the climate technology innovation leap.
- **Vietnam** is in need of responding to climate-relevant natural hazards like heat waves, drought, and floods that accelerate over-exploitation of non-substitutable natural resources, like water, at an alarming pace. Meanwhile, bottom of the pyramid groups is disproportionately exposed to risks: primarily residing in the Mekong River Delta, the Red River, and the Central Coast. Although investment in climate actions is urgent to minimise adverse climate impacts, limited availability of climate responsive technologies along with the funding gap for technology entrepreneurs has constructed institutional bottlenecks for climate business deployment. The initiative shall therefore stimulate innovation to trickle benefits down to all, including the most vulnerable, in the economy.

D.5. Country ownership (max. 500 words, approximately 1 page)

Country Ownership at the Heart of the Climate Technopreneurship Initiative. Ensuring ownership of the five countries is at the centre of the innovation proposal which cannot materialise unless it is driven and sustained by the countries themselves. Since the ideation stage, two courses of action have been adopted to strengthen the principle of country ownership and accountability as follows; (i) national strategy and policy review; and (ii) stakeholder consultation and local ownership-centred SMU governance structure.

- (1) **Country Planning and Strategies Review:** An extensive literature review was conducted over the course of extracting a prospective list of priority technologies by country (Table 2). In addition to the five countries' Nationally Determined Contributions (NDC) and Technology Needs Assessment (TNA), comprehensive studies on primary policy documents were explored to be aligned with each country's directions and priorities, including but not limited to the following list. For more, see the Demand-driven FS of Annex 2.

Cambodia	<i>Rectangular Strategy IV 2018-2023, National Strategic Development Plan 2019-2023, National Green Growth Roadmap (2010), National Policy on Green Growth (2013), National Green Growth Strategic Plan 2013-2030, Cambodian Climate Change Strategic Plan 2014-2023, and National Science, Technology and Innovation Policy 2020-2030</i>
Indonesia	<i>2020-2024 National Medium-Term Development Plan (RPJMN), the GCF Country Programme Document (CPD, 2020), a National Adaptation Planning – Executive Summary (2019), NDC Adaptation Roadmap (2021), NDC Mitigation Roadmap (2020), 2020-2024 Climate Resilience Development Policy (2021), 3rd Biennial Update Report (2022), and a review on climate change references throughout sectoral strategic plans such as forestry, energy, industry, waste, agriculture</i>
Laos	<i>9th National Socio-Economic Development Plan 2021-2025 (NSED), National Strategy on Climate Change, National Green Growth Strategy (2018), and National Adaption Programme of Action to Climate Change (NAPA)</i>

Philippines	<i>Republic Act 10771: Philippine Green Jobs Act of 2016, Republic Act 9729: Climate Change Act of 2009, Republic Act 9501: Magna Carta for Micro, Small and Medium Enterprises of 2007, Republic Act No. 10644: Go Negosyo Act of 2014, Republic Act No. 11337: Innovative Start-up Act, and Republic Act No. 11293: Philippine Innovation Act (PIA), Republic Act 10174: Sustainable Finance Framework</i>
Vietnam	<i>National Strategy on Climate Change (2011), National Green Growth Strategy for the period 2021-2030, with a vision to 2050, National Action Plan on Climate Change (NAPCC) for the period 2012 to 2020, Plan for the Implementation of the Paris Agreement on Climate Change (PIPA), National Action Plan for the Implementation of 2030 Agenda for Sustainable Development, Viet Nam's National Climate Change Adaptation Plan (NAP)</i>

(2) **Local Ownership-centred Governance Structure as a Result of Wide-Ranging Stakeholder Consultations:**

KDB has closely engaged with multiple stakeholders from governments, ministries, relevant public entities, state-owned enterprises, VCs, investors, start-up assisting services firms, and international donors present on the ground to CSOs, in partnership with the GGFI equipped with a firm local presence, since the concept designing stage (see Demand-driven FS of Annex 2 for consultation methods and a full list of tapped stakeholders).

Such wide-ranging stakeholder consultations resulted in the SMU governance structure that ensures strong country ownership. The NDAs of the five countries will function as members of the SMU Steering Committee to offer high-level policy guidance and strategic advice over the course of executing country-specific activities, while supporting partnership coordination with entities attached to ministries, enterprises, VCs, CSOs, academia, etc. Undoubtedly, this governance structure will ensure throughout the implementation phase of the programme (see Demand-driven FS of Annex 2 for SMU governance details with information on engaging entities by country).

D.6. Efficiency and effectiveness (max` . 500 words, approximately 1 page)

GCF First-loss Funding as the Catalyst for the Scale-up of Capital in the ASEAN Market. First-loss equity capacity of the GCF is critical in enabling the CTF to meet expected results directed at catalysing innovation-driving venture capital at scale across ASEAN, home to the five attractive markets. In the absence of the GCF's first-loss equity capital, the CTF will face difficulty in mobilising private sector-led investment capital in the middle of the regional post-pandemic recession when investment flows have been exceptionally low. With the GCF, the world's largest climate financier, on board as the anchor investor, funding sources from the private sector can be secured, complementing the GCF mandate on financing climate action.

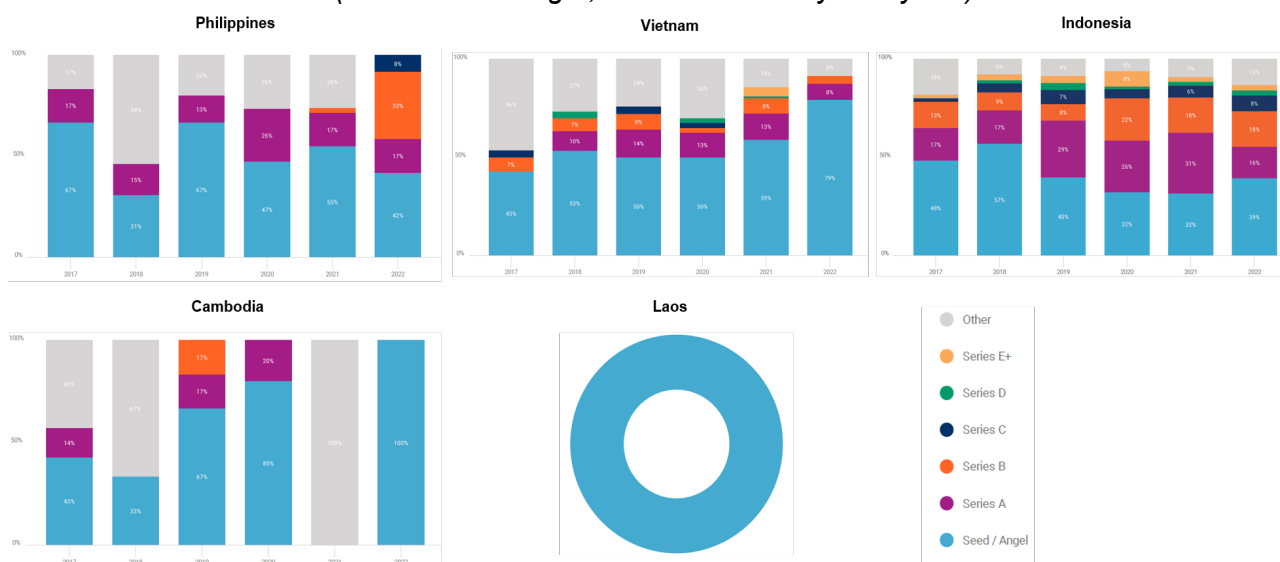
A successful mobilisation with unprecedented volumes of resources will incite keen attention to the initial closing trial throughout the region with few precedents. Leveraging the initial achievement, the CTF shall arrange the second round of co-investment post-initial closing towards USD 200 million, where KDB shall be a catalytic financier who will re-direct investors' interest in this move to spur additional private sector capital as one of Asia's leading financiers. The multi-closing method is the most viable avenue for catalysing the largest volumes of private-oriented VC finance, thereby achieving the scale needed to fill the innovation funding gap present in ASEAN countries. Besides KDB's investment leveraging power, the GCF will remain significant throughout the fund's lifespan. Such significant GCF commitment will strengthen the fund's credit worthiness in the region-wide venture investment market especially in volatile time of economic downturn and stagnation.

Co-financing Efforts for the Optimal Efficiency and Effectiveness. Institutional, corporate, and private investors are being sought to participate in the programme as limited partners. The consortium, and the GP in particular, is utilising its network and credibility as a successful general manager to initiate conversations and gauge interest and achieve the objectives and goals of the Climate Technopreneurship Fund (CTF). Potential co-investors for the CTF can be comprehensively mapped into following categories once attractive commercial terms and conditions are confirmed and fixed: (i) global investors with previous experience in committing to funds of similar nature, scale, or magnitude (e.g., Temasek and its subsidiaries);(ii) local financial institutions across the five NOL countries; (iii) global and local enterprises that are currently operating (or planning to do so) in at least one of the five NOL countries; (vi) public or private institutions and investors committed to addressing ESG-related issues (e.g., investors and proponents developing technology on Carbon Capture Utilization and Storage); and (v) financial investors, impact investors, or fund of funds that could complement the programme, aligning with the GCF's objectives. It is anticipated that the programme will attract the majority of limited party investors after the technology providers have been identified so that the potential industries of the CTF can be better marketed.

As part of the ongoing investment attraction efforts, KDB plans to organise a series of GCF-themed climate technology showcases and networking events (KDB NextRound), targeting potential investors globally and corporate venture capital firms equipped with a presentation of exemplary technology solutions for climate resilience and other potential investors.

Counterfactual Baseline Comparison. At the outset, it should be emphasised that, without the GCF's participation, the baseline is zero because private financiers, not to mention global technology providers, would have low levels of incentives to strengthen budding innovation ecosystems on climate: i.e. far from easy. The preliminary climate technology market assessment (see Demand-driven FS of Annex 2 for details) has observed that, in spite of the region's growth of digital innovation and technology start-ups, bottlenecks and gaps in the climate innovation ecosystem exist – e.g., lack of climate-focused start-up support intermediaries, absence of legal incentives for start-ups and SMEs on climate technology. In light of this, the GP of the CTF, with the GCF's funding support, targets to execute investments tailored to individual country-specific contexts and structured into specific stages, spanning seed, early (Series A), and growth (Series B and above) stage opportunities, in order to achieve an economic rate of return. See below.

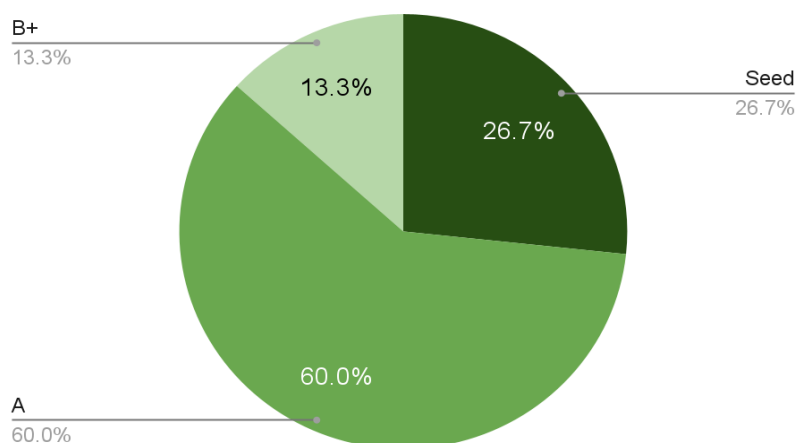
Investment Stage Analytics by Country (Source: CB Insight, customised analytics by GP)



Anticipated Investment Stage Focus by Country

	Indonesia	Vietnam	Philippines	Cambodia	Laos
Seed			○	●	●
Series A	○	●	●	○	
Series B+	●	○			

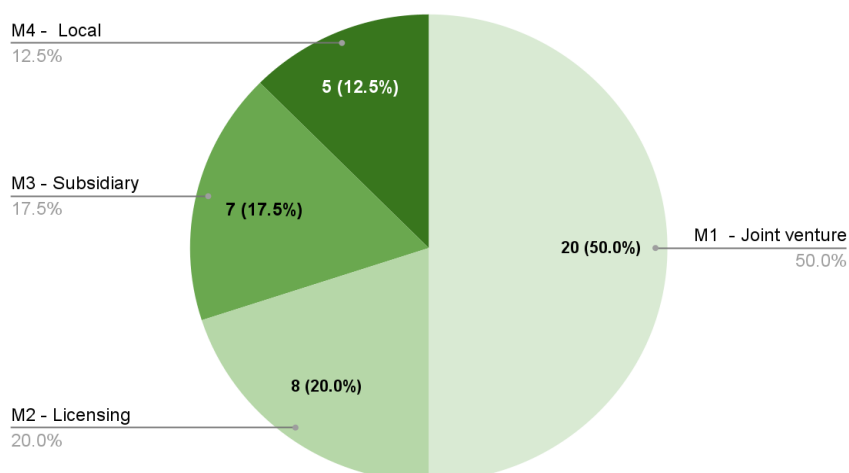
CTF Anticipated Deal Breakdown by Investment Stage



CTF Anticipated Investment Stage Focus by Technology Transfer Model

	Model 1	Model 2	Model 3	Model 4
Seed	●			●
Series A	●		●	
Series B+		●		

CTF Anticipated Deal Count by Technology Transfer Model



While these are to be adjusted for investment complexity, shifting market trends, and exit considerations, in the long run, the CTF is expected to attain a 7-13.9% rate of return (subject to success rate and returns accordingly as per Annex 3), backed by that ambitious GCF-KDB partnership which will be at the core of cultivating prime, innovative climate technology solutions for the ASEAN region and beyond. See Supply-driven FS of Annex 2 for more.

E. LOGICAL FRAMEWORK

This section refers to the project/programme's logical framework in accordance with the GCF's Integrated Results Management Framework to which the project/programme contributes as a whole, including in respect of any co-financing.

E.1. Project/Programme Focus

Please indicate whether this proposal is for a mitigation or adaptation project/programme. For cross-cutting proposals, select both.

- ☒ Reduced emissions (mitigation)
- ☒ Increased resilience (adaptation)

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

This section of the logical framework is meant to help a project/programme monitor and assess how it contributes to the paradigm shift described in section D.2 above by applying three assessment dimensions - scale, replicability, and sustainability.

Accordingly, for each assessment dimension (see the definition per assessment in the accompanying guidance note), describe the current state (baseline) and the potential scenario (target) and rate the current state (baseline) by using the three-point-scale rating (low, medium, and high) provided in the guidance note. Also describe how the project/programme will contribute to that shift/ transformation under respective assessment dimensions (scale, replicability and sustainability). In doing so, please refer to section B.2(a) (theory of change).

Assessment Dimension	Current state (baseline)		Potential target scenario (Description)	How the project/programme will contribute (Description)
	Description	Rating		
Scale	Workable innovative technology-enabled climate solutions rarely exist. A few precedents are mostly small-scale trials, not qualified to be a scalable business model for go-to-market.	<u>Low</u>	A genuine paradigm shift will be achieved by benefiting from economies of scale, in that catalysed VC funds at scale will spur emergence and implementation of likely scalable climate businesses which would otherwise have been the left-behind areas or beneath the surface in the five emerging markets where small-sized proceeds cannot afford expensive tech-driven projects at scale.	The programme will scale the VC fund (CTF) to achieve economies of scale by catalysing private investment crowd-in, anchored by GCF de-risk financing. This intervention is projected to enable the selected forward-looking businesses to advance their scalable capabilities and reach a full-blown commercialisation point in the five countries.

Replicability	No climate technology-transferred business model has been proven to deserve replicability, so that there is a remote yet distinct possibility of replication.	<u>Low</u>	Once a role model climate technology transferred business is identified to work contextually, the model with contextual and technological adjustments will be replicated on a nation-wide and further ASEAN region-wide basis.	The intervention – climate technology transfer model and VC fund risk-sharing structure – is a first of its kind initiative with an ambition to create replicable best practices, so that lessons learnt will guide followers in driving replication across the ASEAN market beyond the programme's target geography.
Sustainability	Climate-responsive innovation ecosystem, key to sustainability, is immature, even though the vulnerability and the type of gaps differ across target countries.	<u>Low</u>	Strengthened innovation ecosystems will foster fast and fit deployment of climate technology solutions, which will lead up to technological leapfrogging of the five countries with inspiration of a genuine ASEAN-wide paradigm shift.	The programme will propel market-driven ecosystem formulation with bankability-centred incentives, in order to encourage key local players with ownership interests to be accountable for continued impacts and benefits after the programme exit.

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

Select appropriate IRMF core and supplementary indicators to monitor project/programme progress. More than one IRMF (core and or supplementary) indicators may be selected as applicable for each GCF results area and project/programme outcome (as defined in the table in section B.2(b)). If IRMF indicators are unable to measure any given project/programme outcomes, project/programme-specific indicators should be developed under section E.5 (project/programme specific indicators).

Below figures are all indicative based on lots of assumption layers and virtual scenarios: for detailed assumptions and scenario, please see Annex 22 and 23.

GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final ³²	
<u>All result Areas – MRA 1.2.3</u> (1,639,681 tCO ₂ eq)	<u>Core 1: GHG emissions reduced, avoided or removed/sequestered</u>	CTF reporting to KDB with third-party independent verification on the annual basis on the annual basis	0	-	Implementation period GHG emission reduction (11 years): 601,216 tCO ₂ eq	Zero baseline is assumed because there exist no JVs (outcome producers) in the absence of the acceleration programme. GHG mitigation estimates are presented in detail in

³² The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

					<p>Implementation period GHG emission reduction by country: 120,243tCO₂eq</p> <p>Lifespan GHG emission reduction (30yrs): 1,639,681 tCO₂eq</p> <p>Lifespan GHG emission reduction by country: 327,936 tCO₂eq</p>	Annex 22 – (4) Mitigation Spreadsheet.
<u>MRA1 Energy generation and access</u>	<u>Core 1: GHG emissions reduced, avoided or removed/sequestered</u>	CTF reporting to KDB with third-party independent verification on the annual basis on the annual basis	0	-	<p>Implementation period (11yrs): 191,296 tCO₂eq</p> <p>Total lifespan (30yrs): 521,717 tCO₂eq</p>	<p>Zero baseline is assumed because there exist no JVs (outcome producers) in the absence of the acceleration programme.</p> <p>GHG mitigation estimates are presented in detail in Annex 22.</p>
	<u>Supplementary 1.2: Installed energy storage capacity</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	TBD	TBD	Mid-term target is assumed zero in regards to 5-year investment period.

	<u>Supplementary 1.3: Installed renewable energy capacity</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	TBD	TBD	<ul style="list-style-type: none"> - Implementation Period GHG emission reduction: 417,306 <i>tCO₂eq</i> - Annual GHG emission reduction: 37,936 <i>tCO₂eq</i>
	<u>Supplementary 1.4: Renewable energy generated</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	TBD	TBD	
<u>MRA2 Low-emission transport</u>	<u>Core 1: GHG emissions reduced, avoided or removed/sequestered</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	-	Implementation period (11yrs): 382,592 <i>tCO₂eq</i> Total lifespan (30yrs): 1,043,433 <i>tCO₂eq</i>	<ul style="list-style-type: none"> - Lifespan GHG emission reduction (30 years): 1,138,106 <i>tCO₂eq</i> <p>TBD – Once sub-project selection is to be done, specific mid-term/final targets will be provided.</p>
	<u>Supplementary 1.5 Improved low-emission vehicle fuel economy</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	TBD	TBD	
<u>MRA3 Buildings, cities, industries and appliances</u>	<u>Core 1: GHG emissions reduced, avoided or removed/sequestered</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	-	Implementation period (11yrs): 27,328 <i>tCO₂eq</i> Total lifespan (30yrs): 74,531 <i>tCO₂eq</i>	
	<u>Supplementary 1.1: Annual energy savings</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	TBD	TBD	

<p><u>All result Areas – ARA 1, 2 (1,180,881, female 50%)</u></p>	<p><u>Core 2: Direct and indirect beneficiaries reached</u></p>	<p>CTF reporting to KDB with third-party independent verification on the annual basis</p>	<p>0</p>	<p>-</p>	<p>Expected adaptation outcome in total: [Direct beneficiary] 1,180,881 (female, 50%) Country breakdown: 236,176 for each country [Indirect beneficiary] 1,132,408 (female, 50%) Country breakdown: 226,481 for each country</p>	<p>Zero baseline is assumed because there exist no JVs (outcome producers) in the absence of the acceleration programme. Adaptation estimates are presented in detail in Annex 22 - (5) Adaptation Spreadsheet.</p>
<p><u>ARA1 Most vulnerable people and communities</u></p>	<p><u>Core 2: Direct and indirect beneficiaries reached</u></p>	<p>CTF reporting to KDB with third-party independent verification on the annual basis</p>	<p>0</p>	<p>-</p>	<p>[Direct beneficiary] 224,367 (women 50%) [Indirect beneficiary] 215,157 (women 50%)</p>	<p>Zero baseline is assumed because there exist no JVs (outcome producers) in the absence of the acceleration programme. Detailed assumptions (linkages amongst hazards, risks, and envisioned activities) prescribed in Annex 23. Mid-term target is assumed zero in regards to 5-year investment period.</p>
	<p><u>Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new</u></p>	<p>CTF reporting to KDB with third-party independent verification on the annual basis</p>	<p>0</p>	<p>TBD</p>	<p>TBD</p>	

	<u>climate-resilient livelihood options</u>					TBD – Once sub-project selection is to be done, specific mid-term/final targets will be provided.
	<u>Supplementary 2.5: Beneficiaries (female/male) adopting innovations that strengthen climate change resilience</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	-	[Direct beneficiary] 224,367 (women 50%) [Indirect beneficiary] 215,157 (women 50%)	
<u>ARA2 Health, well-being, food and water security</u>	<u>Core 2: Direct and indirect beneficiaries reached</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	-	[Direct beneficiary] 956,514 (women 50%) [Indirect beneficiary] 917,250 (women 50%)	
	<u>Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	TBD	TBD	
	<u>Supplementary 2.2: Beneficiaries (female/male) with improved food security</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	TBD	TBD	

	<u>Supplementary 2.3: Beneficiaries (female/male) with more climate-resilient water security</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	TBD	TBD	
	<u>Supplementary 2.5: Beneficiaries (female/male) adopting innovations that strengthen climate change resilience</u>	CTF reporting to KDB with third-party independent verification on the annual basis	0	-	[Direct beneficiary] 956,514 (women 50%) [Indirect beneficiary] 917,250 (women 50%)	

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

Select at least two relevant IRMF core (enabling environment) indicators to monitor and elaborate the baseline context and project/programme's targeted outcome against the respective indicators. Rate the current state (baseline) vis-à-vis the target scenario and select the geographical scope of the outcome to be assessed. Describe how the project/programme will contribute towards the target scenario. Refer to a case example in the accompanying guidance to complete this section.

Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
<u>Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner</u>	Institutional and regulatory frameworks as well as government initiatives are weak, and highly insufficient for promoting innovation and entrepreneurship with climate solutions.	<u>low</u>	<i>Relevant institutional and regulatory frameworks will be established and strengthened in NOL countries by adoption of proposed policy and regulatory recommendations.</i>	The programme will assess gaps, barriers, and opportunities of the existing policy and regulations to foster innovative climate actions, and develop recommendable policy and regulatory for NOL countries to consider and adopt.	<u>Multi-countries</u>
<u>Core Indicator 6: Degree to which GCF</u>	Apt technologies to combat climate change	<u>low</u>	<i>Access to transferred disruptive technologies</i>	The programme will facilitate global-ASEAN	<u>Multi-countries</u>

<u>investments contribute to technology deployment, dissemination, development or transfer and innovation</u>	are scarce or insufficient for the demand in local markets which cannot afford high costs of technology imports from wealthy countries.		<i>will empower and uplift local capacity to self-devise and deploy context-specific climate solutions.</i>	exchange for local entrepreneurs to purchase and digest technologies not yet on the ASEAN market.	
<u>Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level</u>	Climate tech-specific acceleration and VC markets are nascent or in need of innovation shifts, to be ready for taking up and absorbing climate tech-enabled solutions.	<u>low</u>	<i>Market-driven entry point, i.e. acceleration, will contribute to market formation and/or sophistication, instrumental to paradigm shifting transformation across ASEAN beyond the nation-wide basis.</i>	Its market-focused intervention in both financing and ecosystem building will open or mature climate tech-specific acceleration and VC markets on an economically viable scale.	<u>Multi-countries</u>
<u>Core indicator 8: Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards</u>	Infant/emerging local VC markets lack awareness on climate tech theme, in-depth understanding on structured equity financing, and best practices.	<u>low</u>	<i>Growing awareness and obtained track record of the five markets will be instrumental in bringing about a true technology innovation nation-wide and ASEAN-wide.</i>	The programme will spur proactive exchange of expertise, ideas, and experiences amongst Global-ASEAN partners, via knowledge sharing platforms.	<u>Multi-countries</u>

E.5. Project/programme specific indicators (project outcomes and outputs)

This section should list out project/programme-specific performance indicators (outcomes and outputs) that are not covered in sections above (E.1-E.4). List down tailored indicators to monitor /track progress against relevant project/programme results (outcomes/outputs). AEs have the freedom to decide against which outcomes they would like to set project/programme specific indicators. If any co-benefits are identified in sections B.2(a)(b), and D.3, AEs are encouraged to add and monitor co-benefit indicators under the “Project/programme co-benefit indicators” section in table below. Add rows as needed.

Please number each outcome and output as shown below to indicate association of outputs to the contributing outcome. The numbering for outputs under this section should correspond to the output numbering in annex 4 (detailed budget plan).

Below country breakdown of the mid- and final-targets are indicative. During the implementation period, it will be revised according to country context.

Project/programme results (outcomes/ outputs)	Project/programme specific Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final	
Output 1. Country-driven shortlist of local JV candidates ready for climate technology uptake (i.e., NOL countries will shortlist their own champion entrepreneurs with climate technology capacity)	# of local entrepreneurs (JV candidates) supported by N-CEAP of Component 1	Quarterly SMU reporting to KDB on N-CEAP	0	50 in the Philippines; 40 in Cambodia, Indonesia, and Viet Nam; 15 in Laos	50 in the Philippines; 40 in Cambodia, Indonesia, and Viet Nam; 15 in Laos	Mid-term and final targets are the same, as activities of Component 1 will be done before the mid-term schedule.
	# of local entrepreneurs (JV candidates) shortlisted for Global Acceleration of Component 2	N-CEAP Innovation challenge demo day event, in addition to Quarterly SMU reporting to KDB on shortlist information (with a possible KDB/GCF visit)	0	20 in Indonesia, the Philippines, and Viet Nam; 12 in Cambodia; 6 in Laos	20 in Indonesia, the Philippines, and Viet Nam; 12 in Cambodia; 6 in Laos	Mid-term and final targets are the same, as activities of Component 1 will be done before the mid-term schedule.
Output 2. Climate tech transfer between Global-ASEAN JVs with investment readiness (i.e. JVs with climate tech-driven solutions are ready for investment)	# of global technology entrepreneurs equipped with tech-enabled climate solutions	Global Acceleration that entails JV match-making with N-CEAP graduates from Component 1, in addition to the Acceleration Secretariat's reporting to KDB	0	5-10 in Indonesia, the Philippines, and Vietnam; 4-5 in Cambodia and Lao PDR	5-10 in Indonesia, the Philippines, and Vietnam; 4-5 in Cambodia and Lao PDR	Conservative estimation, as several technologies may be transferred for a single JV or partnership entity.
	# of gender mainstreamed or committed Global-ASEAN JVs (or	Global acceleration advisory Secretariat's reporting to KDB on JV (or partnership) selection based on Global	0	5-10 in Indonesia, the Philippines, and Vietnam; 4-5 in	5-10 in Indonesia, the Philippines, and Vietnam; 4-5 in	Approx.6-8 expected per country but certain cases may not go through Component 2.

	partnerships) with investment readiness	Acceleration / CTF Investment criteria		Cambodia and Lao PDR	Cambodia and Lao PDR	
Output 3. Climate Technopreneurship Fund with private capital crowd-in	Volume of catalysed capital from private (by result area of MRA1-3, ARA1-2)	GP's quarterly reporting to KDB on initial, subsequent, and final commitments for the CTF	0	(USD million) MRA1: 18.6, MRA2: 37.2, MRA3: 2.325, ARA1: 11.625, ARA2: 46.5	(USD million) MRA1: 18.6, MRA2: 37.2, MRA3: 2.325, ARA1: 11.625, ARA2: 46.5	USD 116.25 million in total, based on first loss equity of USD 83.75 million (Result area breakdown is indicative, based on ex-ante assumptions for an indicative climate outcome estimation) Mid-term and final targets are the same, due to a final close before the mid-term schedule
	Volume of catalysed capital from private (by NOL country)	GP's quarterly reporting to KDB on initial, subsequent, and final commitments for the CTF	0	USD 23.25 million per NOL country	USD 23.25 million per NOL country	USD 116.25 million in total (Country breakdown is indicative, based on an ex-ante assumption of equal distribution by country) Mid-term and final targets are the same, due to a final close before the mid-term schedule
	# of investments	GP's quarterly reporting to KDB on CTF Investment Committee (IC) approval	0	40 (ca. 8 per NOL country)	40 (ca. 8 per NOL country)	Mid-term and final targets are the same, due to all investments to be done before the mid-term: 5-year investment period
	# of gender-sensitive investments	GP's quarterly reporting to KDB on CTF Investment Committee (IC) approval based on	0	20 (ca. 4 per NOL country)	20 (ca. 4 per NOL country)	50% gender-sensitive investment rule applies as per GAP (Annex 8).

		CTF investment criteria, in addition to gender M&E				Mid-term and final targets are the same, due to all investments to be done before the mid-term: 5-year investment period
	CTF's expected rate of return	GP's quarterly reporting to KDB & LPs on CTF financial and investment information	0	n/a	7-13.9%	An indicative figure at the fund termination timeline as per Annex 3 modelled based on two scenarios (best/BAU)
Output 4. Climate technopreneurship to be powered as scale under strengthened relevant ecosystem	Level of relevant tech innovation ecosystem improvement	AE scorecard (0= status quo, 1= little improvement, 2=mid-level improvement, 3=high-level advancement)	0	2	3	AE scorecard sets the status quo at zero, regardless of varying status quo and degree of improvement
	Detailed M&E implementation plan report	M&E report submission to KDB after Steering Committee confirmation	0	1	1	Detailed M&E must entail country-specific details with endorsement from the National SMU Steering Committee under quality control of the Regional SMU Mid-term and final targets are the same, as it will be submitted before the mid-term schedule.
	Annual M&E Report	Annual reporting to KDB to ensure a success of N-CEAPs, with ex-post impact assessment	0	5 annual M&E reports	5 annual M&E reports	Impact includes progress on N-CEAPs and co-benefits.
	# of local experts and trainers trained (female ratio, too)	Periodic SMU reporting to KDB on TA activities		200 in total (ca. 40 per country – 40(C), 100(I), 16(L), 100(P), 60(V))	200 in total (ca. 40 per country – 40(C), 100(I), 16(L), 100(P), 60(V))	Mid-term and final targets are the same, as TA activities will be carried out before the mid-term schedule.

				Women 30%	Women 30%	
	Recommendations on national strategy or policy endorsed by the government of NOL countries	Submission of endorsed national strategies and policy proposal to KDB	0	1	1	Every submission to be done by individual NOL countries, with country fit recommendations. Mid-term and final targets are the same, as it will be submitted before the mid-term schedule.
Project/programme co-benefit indicators <i>(cannot be identified unless a target technology is chosen)</i>						
Outcomes/outputs	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final	
Co-benefit 1 (Gender): Gender inclusive and gender empowering innovation deployment across NOL countries under the programme that promotes women and girls become central agents and major beneficiaries – i.e., selected women-led entrepreneurs under the programme, in accordance with Gender Action Plan (GAP).	# of locally hired gender expert in each National SMU, which promotes gender expertise on the ground	Annual SMU reporting to KDB on co-benefits with submission of duties randomly requested by the GCF	0	At least 5 locally hired gender experts in NOL countries	At least 5 locally hired gender experts in NOL countries	Compliance to Gender Action Plan (GAP)
	# of local women-led SMEs to be selected as the programme beneficiary	Annual SMU reporting to KDB on co-benefits with submission of duties randomly requested by the GCF	0	At least 39 in total (30% representation per country)	At least 39 in total (30% representation per country)	Compliance to Gender Action Plan (GAP)
	Responsible GAP implementation	Annual SMU reporting to KDB on co-benefits with submission of duties in addition to M&E on GAP implementation	0	5 (Annual reporting to KDB)	5 (Annual reporting to KDB)	Compliance to Gender Action Plan (GAP) with gender responsive TA activities rolled out nationally
Co-benefit 2 (Environment): Varying environmental co-	TDB	Annual SMU reporting to KDB on co-benefits with submission of duties	0	TBD	TBD	Co-benefits to be specified as per project – e.g., water, disaster risk

benefits to NOL countries, as per JV business		randomly requested by the GCF				management, clean energy, and so on.
Co-benefit 3 (Economic): Emergency of climate technology driven entrepreneurs as pioneer industry players	# of locally owned/registered climate technology driven entrepreneurs	Annual SMU reporting to KDB on co-benefits with submission of duties randomly requested by the GCF	0	40	40	Mid-term and final targets are the same, as activities will be carried out before the mid-term schedule.

E.6. Project/programme activities and deliverables

All project activities should be listed here with a description and sub-activities. Significant deliverables should be reflected in annex 5 implementation timetable. Add rows as needed.

Please number the activities as shown below to indicate association of activities to the related outputs provided above in section E.5. Similarly, please number sub-activities as shown below to associate to the related activity.

Activities	Description	Sub-activities	Deliverables
Activity 1.1. Set up a Regional and National Sustainability Management Unit (SMU)	With a Regional SMU at the GGGI Seoul HQ, each country will establish a customised National SMU to lead implementation and enable effective delivery of outputs in consultation with NDAs and key local stakeholders.	Sub-activity 1.1.1. Set up a Regional SMU in GGGI Seoul HQ Sub-activity 1.1.2. Set up a National SMU in each country	Regional SMU governance structure National SMU(s) governance structure (Gender expertise secured through at least 1 recruitment or partnership) Partnership agreement with local implementing partner(s)
Activity 1.2. Launch sourcing strategies to identify qualified local JV candidates	As a country's top-class sourcing unit, SMUs will undertake promotional communication and outreach activities to build a pool of qualified talents in priority industries and technologies with a gender investing focus.	Sub-activity 1.2.1. Develop a robust communication and sourcing strategy Sub-activity 1.2.2. Prepare necessary platforms and materials for sourcing JV candidates Sub-activity 1.2.3. Launch outreach activities	Documented communication and sourcing strategy submitted to the Global Acceleration Advisory Secretariat Offline/online promotional channels/materials/events/platforms per country to be shared with the Global

		Sub-activity 1.2.4. Narrow down the pool of local JV candidates for acceleration readiness	Acceleration Advisory Secretariat and NDAs List of selected candidates of local entrepreneurs, to be selected for N-CEAPs (30% female-founded, female-headed, or more than 50% women-employed)
Activity 1.3. Offer tailor-made acceleration readiness services to nurture local JV candidates	SMUs will design the fittest N-CEAPs in partnership with local / regional mentors. Under the N-CEAPs, cohorts of shortlisted entrepreneurs will be trained and top talents will be finally selected as JV candidates through a competitive mechanism.	Sub-activity 1.3.1. Design the National Climate Entrepreneur Programme (N-CEAPs) Sub-activity 1.3.2. Train selected candidates for acceleration readiness Sub-activity 1.3.3. Organise a competition to shortlist JV candidates for global acceleration	N-CEAP design document including list of mentors/trainers/experts, activity outlines and gender mainstreaming manual N-CEAP progress reporting to the Global Acceleration Advisory Secretariat Selected finalists ready to digest global level JV matching and business acceleration approved by the Global Acceleration Advisory Secretariat
Activity 2.1. Set up the Global Acceleration Advisory Secretariat	The Global Acceleration Advisory Secretariat will be set up to manage the implementation of the global component and coordinate communication between consortium partners and relevant stakeholders.	Sub-activity 2.1.1. Implement the global component with necessary logistics Sub-activity 2.1.2. Manage multi-dimensional stakeholder communication Sub-activity 2.1.3. Conduct regular M&E and reporting to KDB	Operational manual including E&S/gender components (gender expertise secured through the partnership with Gaia Consult Inc.) submitted to KDB Annual programme execution plans including budget allocation, timelines, and logistical details established Annual performance reporting on the progress of acceleration activities to KDB

Activity 2.2. Launch global sourcing strategies to attract global technology innovators	By leveraging the global innovation network, the Secretariat will source and shortlist global technology businesses with climate-related solutions viable for Global-ASEAN technology transfer.	Sub-activity 2.2.1. Establish a Global-ASEAN pool of global technology innovators Sub-activity 2.2.2. Assess the suitability and feasibility of global technology innovators Sub-activity 2.2.3. Select the finalists for Global-ASEAN technology transfer	Diagnostic assessment on the technological suitability and feasibility results shared with the Investment Committee (IC) List of qualified global technology providers shortlisted upon rounds of reviews and interviews
Activity 2.3. Offer collaborative R&DB acceleration services for JVs	With selected teams on board, a series of tailor-made consulting sessions will take place, to enhance their technical capacity and sharpen go-to-market strategies, leading up to JV/partnership creation between global technology providers and local entrepreneurs.	Sub-activity 2.3.1. Perform diagnostic analyses on participating JV candidates Sub-activity 2.3.2. Offer tailor-made acceleration services for JV candidates Sub-activity 2.3.3. Achieve Global-ASEAN technology transfer with best fit mechanisms Sub-activity 2.3.4. Support investment attraction	Diagnostic assessment results and acceleration consulting plan for JVs List of JVs (or partnerships) enabling and accelerating climate technology transfer Regional event composed of demo day/networking/investment attraction event
Activity 3.1. Execute the CTF formation with raising investment capital	With necessary documentation including term sheets, the investment fund vehicle and related entities will be established, accompanied by closing the GCF into the CTF and securing private investment capital	Sub-activity 3.1.1. Establish the fund vehicle and related entities Sub-activity 3.1.2. Close the GCF into the CTF Sub-activity 3.1.3. Fundraise private investment capital	In-depth legal DD results LPAs with Side Letters Potential investors identified and LP commitments endorsed
Activity 3.2. Execute investments with portfolio management as per investment criteria	Through the process of building up the investment pipeline and performing due diligence respectively, the GP will execute investment, offer structured support and guidance to portfolio companies in areas ranging from capital planning to business modelling for their performance enhancement, and conduct reporting to KDB (semi-annual reporting on GCF relevant	Sub-activity 3.2.1. Perform due diligence on proposed businesses Sub-activity 3.2.2. Build, revise, and manage investment portfolios Sub-activity 3.2.3. Monitor performance of portfolio companies with structured support Sub-activity 3.2.4. Conduct regular reporting to KDB	Legal, financial, technology, and E&S due diligence on target companies Investment memo presented to the IC Fund-level performance report and analytic documentation Quarterly reporting to KDB and LPs

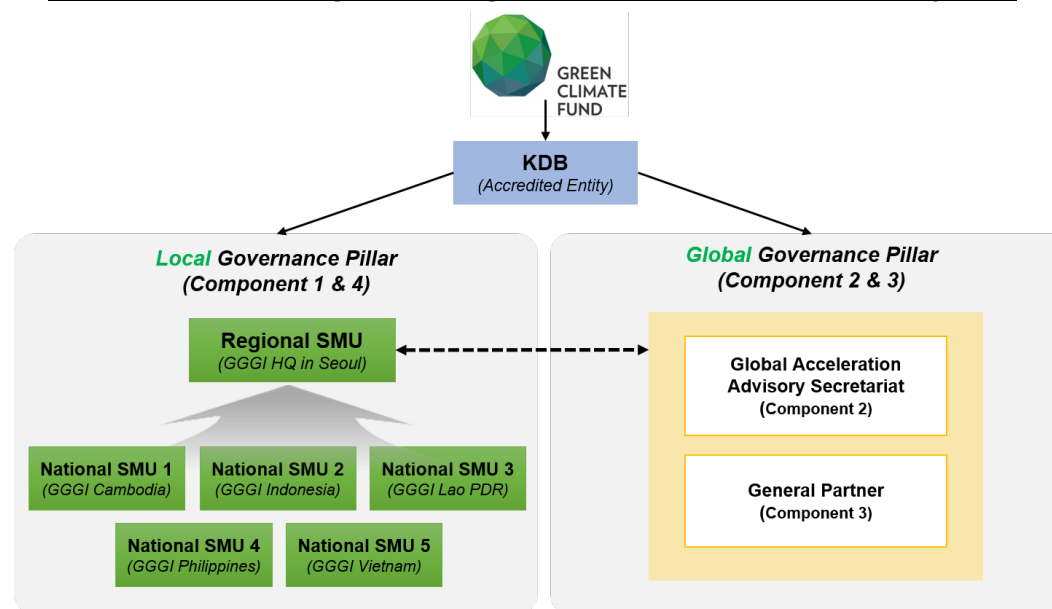
	obligations) and investors (quarterly fund-level performance).		
Activity 3.3. Achieve successful exits with a reasonable rate of return	With mid- and long-term exit strategies calculated, the GP will perform exits (e.g., trade sale, M&A, IPOs, etc.), distribute proceeds and returns, and subsequently execute the fund's post-exit obligations backed by legal counsel, terminating the CTF.	Sub-activity 3.3.1. Realise exits with a reasonable rate of return Sub-activity 3.3.2. Distribute proceeds and returns Sub-activity 3.3.3. Terminate the CTF Sub-activity 3.3.4. Perform the fund's port-exit obligations	Quarterly reporting on exit performance to KDB and LPs Transfer / purchaser details Documentation on necessary disclosure to regulatory parties CTF termination reporting to KDB on completion of post-exit obligations
Activity 4.1. Formulate the best workable network framework	SMUs will set up national networks and a communication hub to connect local greenpreneurs and start-up assistance organisations nationwide and disseminate knowledge products.	Sub-activity 4.1.1. Promote national networks for climate technology innovation Sub-activity 4.1.2. Develop a communication hub with knowledge sharing activities	Online/offline communication channel for networking/knowledge sharing (with at least 30% of women and other vulnerable group representation)
Activity 4.2. Build capacities to enable and strengthen the relevant ecosystem	SMUs will build capacities of national accelerators by training experts and trainers for the N-CEAPs while making recommendations on national strategies and regulatory policies to strengthen climate technopreneurship ecosystem.	Sub-activity 4.2.1. Build capacities of national accelerators to sustain N-CEAPs (1.3.1) Sub-activity 4.2.2. Establish the national strategy on climate technopreneurship promotion Sub-activity 4.2.3. Offer regulatory and policy recommendations	Documentation with a list of national trainers/experts trained for N-CEAP (including gender responsive TA activities) Documentation on national strategies and policy recommendations submitted to NDAs and KDB

<p>Activity 4.3. Promote sustainability via the National SMUs</p>	<p>SMUs will undertake M&E, support ex-post impact assessments, and regularly report to KDB to ensure the successful management of the N-CEAPs and regional initiatives.</p>	<p>Sub-activity 4.3.1. Develop a detailed M&E implementation plan Sub-activity 4.3.2. Conduct regular reporting to KDB Sub-activity 4.3.3. Support ex-post impact assessments Sub-activity 4.3.4. Coordinate with the Regional SMU and the Global Acceleration Advisory Secretariat</p>	<p>Detailed M&E plans submitted to the Global Acceleration Advisory Secretariat and KDB Regular country-by-country M&E reporting including co-benefits to KDB Reporting on need-based assistance for impact assessment to the Regional SMU and the Global Acceleration Advisory Secretariat</p>
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E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

Reporting to the GCF. As an accredited entity, KDB shall carry out monitoring, reporting, and evaluation duties to the GCF in the forms of the initial annual performance report (APR), interim independent evaluation report, programme completion report (final APR), final independent evaluation report, financial information report on a semi-annual basis and audited financial statements in accordance with the terms and conditions of the AMA and FAA. Information reported to the GCF will be prompt, reliable, precise, and transparent, since all the funded activities will be monitored and KPI associated data and evidence will be collected through a strategic two-track governance system of Executing Entities (GGGI for Components 1 and 4, NHIS for Component 2, and NH ARP for Component 3) under KDB oversight and supervision, along with independent third party audits to ensure quality management over the course of a committed period as shown in the “Two-track Monitoring, Reporting, and Evaluation Governance System” under which GGGI HQ and its

Two-track Monitoring, Reporting, and Evaluation Governance System



local offices across NOL countries and NHIS are to function as important partner entities accountable for reporting necessary information to KDB. The programme shall utilise its Executing Entities' strong local and global presence and capacity to undertake monitoring, reporting, and evaluation arrangements in compliance with GCF standards. KDB's site visits, if possible with the GCF Secretariat (i.e., Portfolio Management Division), will be carried out on both an annual and a random basis, to verify reported information and confirm alleged alignment with key indicators and three-point scale rating.

Financial Reporting to Investors. Reporting to KDB, the CTF is to monitor performance of invested portfolio companies and offer financial information to limited partners on a quarterly basis during the fund's lifespan. At the JV corporate level, portfolio companies are to submit reporting on business performance, climate impacts, and E&S/gender safeguards compliance as committed. Based on expertise of investment trends and insights, the GP and partnering investment advisors shall verify the submitted reporting contents through both routine and random manners to achieve proper monitoring, evaluating, and reporting milestones as planned under the programme.

Transparent Information Disclosure of Invested Sub-Projects for GCF Stakeholders via a Systemic Reporting. For more specific details on the CTF-related reporting, the GP will aim to send to each LP (a) Annual reports within ninety (90) business days of 31 December, the annual audited accounts prepared based on applicable financial standards (including certain information on Related Party Transactions); and (b) Quarterly reports within sixty (60) business days of each quarterly date a report comprising (i) details of investments purchased and of investments disposed of; and (ii) a statement of the investments and other property and assets of the CTF together with a brief commentary on the progress of investments. With the importance of proper reporting acknowledged as an essential responsibility on sub-projects to be financed and managed in a sense of accountable manner to all the GCF stakeholders including LPs and the wider beneficiaries that do include NDAs and line ministries, the programme is committed to provide multi-functional reports if deemed necessary in compliance with the GCF standards.

F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

The risks outlined below are the primary risks and associated mitigations identified at a programme level for the programme's implementation. At an investment level, each of the JV (or other partnership) candidates for the CTF will undergo a stringent risk assessment and management review, as well as technology, legal, financial, and other due diligence procedures prior to investment as parts of components 2 and 3 of the programme. The JV (or partnership) candidates will review the results of assessed risk and enact appropriate mitigation measures prior to being submitted to the Investment Committee for review.

Selected Risk Factor 1

Category	Probability	Impact
<u>Technical and operational</u>	<u>High</u>	<u>Medium</u>

Description

The programme may face planning, implementation, and execution delays due to the on-going COVID-19 pandemic, associated waves of high numbers of infections, and related travel restrictions and delays in communication and coordination.

Mitigation Measure(s)

The three mitigation measures below will bring the impact from medium to medium-low.

1. To reduce the delay and lost time in its communication with local stakeholders, KDB has early on established a strategic partnership with the GGGI, to not only mobilise each of its local offices and native staff in each of the five countries with the respective language skills and cultural background, but also utilise its expansive network within each of the countries' regional and national governments and ministries.
2. KDB has also converted many of its meetings with the programme's various stakeholders (e.g., local country stakeholders including NDAs, consortium members, GP, consultants, etc.) to virtual platforms (e.g., Zoom, WebEx, Google Meet, etc.) to leverage the resources available to encourage timely communication and efficiency within and across country borders and time zones. Preparations to accommodate virtual acceleration services and consulting services as parts of component 1 and 2 are also being made to not delay any of the JV candidates in receiving the needed services in becoming investment-ready businesses.
3. As the pandemic continues through 2022, the programme plans to incorporate more local consultants who are already on the ground in the respective countries to conduct additional stakeholder consultations and the JV (or other partnership) candidate due diligence services for the local candidates.

Selected Risk Factor 2

Category	Probability	Impact
<u>Technical and operational</u>	<u>High</u>	<u>Medium</u>

Description

The programme may face difficulties in identifying appropriate technology companies to establish investments (in forms of JVs or other partnerships), given the nascent nature of low-carbon and climate-resilient solutions and the difficulty of technology commercialisation.

Mitigation Measure(s)

The three mitigation measures below will bring the impact from medium to medium-low.

1. Executing entities (esp. NHIS and NH ARP) will team up with global players who will support all the pooling, sourcing, and matchmaking activities whenever intervention is necessary, leveraging a strong global network and relevant partnership foundations.
2. Coupled with relevant investment and company operating experience applicable to the fund, the GP will leverage its strong networks of investors, technology partners, and industry experts for identifying climate sensitive companies and securing actionable pipelines. At the same time, the GGGI will strengthen the existing network by bringing in local ecosystem stakeholders across the ASEAN region.
3. A set of criteria encompassing technical feasibility and a minimum threshold of mitigation and adaptation impacts will be set up to validate appropriate candidates.

Selected Risk Factor 3

Category	Probability	Impact
<u>Technical and operational</u>	<u>Low</u>	<u>Low</u>

Description

As the programme plans to provide tailor-made acceleration and consulting services to JV (or other partnership) candidates or JVs themselves based on individual diagnostic analysis, the executing of the acceleration services across components 1 and 2 may not meet the urgency and timeline of limited partner investor needs.

Mitigation Measure(s)

The two mitigation measures below ensure the impact remains low.

1. During initial discussions, the GP will share with potential investors the overarching goals of the programme and CTF, as well as the timeframe to ensure that there is a clear understanding that for this programme, and ultimately the sought-after paradigm shift for the ASEAN region, to be successfully achieved, patient capital is required.
2. KDB and the GP of the programme aim to bring on a diverse portfolio of companies across different growth stages to participate in the programme and CTF. The targeted allocation of investments across seed, series A, B, B+ investment types, described in further detail in Annex 2 (Supply-driven FS), is designed to establish a more diversified portfolio for investors across industries and timeframe of returns. With such endeavours, by creating the best possible climate solutions going to market over the first few years of the fund execution, the programme shall narrow the gap with timeline of limited partner investor needs as much as possible.

Selected Risk Factor 4

Category	Probability	Impact
<u>Technical and operational</u>	<u>Medium</u>	<u>Low</u>
Description		
As a 11-year life investment instrument with diverse cross-sectoral investors and stakeholders, the CTF may face challenges with the fund's long-term governance in light of volatile economic conditions and complexity over the duration, diverse interests, and geographies of its investments.		
Mitigation Measure(s)		
<p>The three mitigation measures below ensure the impact remains low.</p> <ol style="list-style-type: none"> 1. The GP will have governance mechanisms and strategies aligned with national long-term economic development plans of respective target countries, leveraging its extensive experience managing private investment vehicles for public and private institutional investors. 2. The CTF will be structured according to industry best practices for long-term fund management including legal provisions, monitoring and reporting requirements of the environmental and social management system (ESMS), and governance requirements for private investment vehicles. 3. The CTF shall leverage the GGGI's solid local presence and network across the ASEAN region. The GP will keep up with the updated local dynamics, and will be informed of the top events and stories of the season in close communication with the Regional Sustainability Management Unit (SMU) which governs five National SMUs in partner countries. 		
Selected Risk Factor 5		
Category	Probability	Impact
<u>Other</u>	<u>Medium</u>	<u>Low</u>
Description		
The programme presents challenges associated with the investment portfolio over limited access to information and potential misconduct by portfolio companies, as well as difficulty of attracting follow-on investments.		
Mitigation Measure(s)		
<p>The three mitigation measures below ensure the impact remains low.</p> <ol style="list-style-type: none"> 1. The GP will establish communication channels with the investment portfolio to implement regular reporting practices in mitigating risks related to insufficient and/or misleading information provisions. 2. The GP will assist the investment portfolio with diversified strategies to guide them towards adequate capital trajectory with milestones for their sustained growth. 3. In close communication with the GP, the SMUs (GGGI) and the Team NH (centred on NHIS) will offer agile assistance to tackle such risks, leveraging their own expertise for the sake of the programme success – not just for their own components: a local presence and stable network with key local partners for the GGGI; and diplomatic actions as a government agency. 		
Selected Risk Factor 6		

Category	Probability	Impact
<u>Forex</u>	<u>Low</u>	<u>Low</u>
Description		
As the programme will invest into five different countries, there may be impacts of dealing with various local currencies and fluctuations in exchange rates with the investments.		
Mitigation Measure(s)		
Given the likely structure of the CTF in Singapore and investment flow into and out of the respective programme countries with different local currencies, the impact of foreign exchange will primarily be upon repatriation in the form of dividends or upon exit. After the GCF Board approval, the programme in the meantime will perform analysis for the financial risks for investments in project-specific and CTF-level financial models, which can include local currency to USD likely long-term swap rates, for instance. While using these rates could provide adequate comfort that project financials are able to cope with any potential future currency volatility, other measures to minimise the forex risk could be proposed after a customised due diligence at GP's own discretion. This ensures the impact remains low.		
Selected Risk Factor 6		
Category	Probability	Impact
<u>ML/FT</u>	<u>Low</u>	<u>Low</u>
Description		
Risks associated with money laundering, terrorist financing, or other prohibited practices, throughout the process of mobilising and transferring funds via multiple layers of partner entities with weaker anti-money laundering controls and a lack of traceability		
Mitigation Measure(s)		
<p>The three mitigation measures below ensure the impact remains low.</p> <ol style="list-style-type: none"> 1. Given KDB, equipped with a strong internal compliance system under a strict/regular guidance of the Korean government as the member of the Financial Action Task Force (FATF), will ensure that the programme adheres to the GCF's Anti-Money Laundering (AML) and Countering the Financing of Terrorism (CFT) Policy in place, as well as other compliance mechanisms to mitigate the risk of money laundering, terrorist financing, or prohibited practices, all executing and partnering local entities are subject to the same policies as well. 2. The CTF is to be operational under the best practice governance mechanism by undertaking investments only after thorough screening and due diligence that include AML/CFT and Know Your Customer (KYC) procedures to prohibit the consideration of an investment with potential and present clients along with their previous transaction records against international and/or local watch lists. Above all, careful attention will be paid when it comes to investment countries in the Grey List. 3. Lastly, legal agreements will require investors to affirmatively confirm that the sources of capital of their investments into the CTF does not come from any prohibited sources. 		

G. GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

The Programme has developed its own Environmental and Social Management System (ESMS), encompassing both CTF and non-CTF components. CTF component pursues maximisation of sustainability outcomes beyond “do not harm” principles. Non-CTF components (Component 1, 2, and 4) are extension of the fund’s environmental and social (E&S) risk management and due diligence. As such, non-CTF components of the ESMS (in Components 1 and 2) aim to support readiness of the applicant JVs as they will reduce rejection rates in the CTF approval stage in Component 3. Non-CTF components also aims to generating co-benefits of capacitating the candidate JVs in E&S management performance, regardless of the fund application results. Importantly, ESMS of the Programme is in line with the Revised Environmental and Social Policy of the GCF (Adopted in B.BM-2021/18).

Mainstreaming Environmental and Social Safeguards (ESS) into the Programme Implementation, CTF is committed to Supporting Projects with E&S Risk Category B/I-2 and below. While micro scale sub-project investments of the CTF mostly anticipate minimal or no adverse social & environmental (E&S) risks – Category C/I-3, the programme set up an environmental and social management system (ESMS) to ensure systematically promoting sustainable co-benefits of the funded activities and safeguarding the ecosystem services, environment, and the communities of all the five NOL countries from environmental and social risks associated with the funded activities beyond the medium (moderate) levels.

The programme proactively follows the mitigation hierarchy to avoid, minimise, and mitigate any risks and impacts. Where avoidance, minimisation, or mitigation measures are not available or sufficient, and where there is sufficient evidence to justify and support viability, remediation and restoration will be required before adequate and equitable compensation of any residual risks and impacts. The ESMS (particularly, for the CTF component) ensures compliance with the respective countries’ safeguard system (EIA/E&S laws, regulations, and procedural requirements), GCF ESS/Sexual Exploitation, Abuse, Harassment (SEAH), IFC PS (KDB adherence to it as per the Equator Principles) and Exclusion List, the EHS Guidelines of the World Bank Group, and core labour standards of the International Labour Organisation (ILO), while integrating them into the business cycle to manage any associated E&S risk. The programme will not finance any project classified as high risks (Category A/I-1) and/or likely to pose adverse impacts to the indigenous peoples (IP) in line with the IFC PS 7 (see ESMS Appendix E of the IP screening checklist and Appendix M of the Indigenous Peoples Plan Framework).

CTF’s E&S Performance Management is Integrated to the Fund Risk Management. The CTF E&S and Gender Compliance Team will carry out routine ESS compliance duties throughout the entire fund operation process: from the fund application (E&S screening and categorisation), fund appraisal and approval to contracting (E&S review summary and E&S covenant preparation, as required), to *ex-poste* due diligence (compliance monitoring and evaluation of JV-specific regular E&S progress report for Category B activities, recommendation on remedial/corrective actions to grievances/unexpected occurrence of regular/justified risks/outstanding cases). For atypical proposal cases where E&S risks are uncertain and the nature of the risks are highly complex or unknown (i.e., in case the proposal involves a relatively new/emerging climate technologies, and there are not sufficient data base to assess the risks and impacts in advance), the CTF E&S and Gender Compliance Team (ESGCT) will refer the case to the Expert Advisory Committee (EAC/a sub-committee on ESS matters) for consultative procedures to determine the risk category and required E&S management measures (ESIA, ESMP, or any other topical management plans).

In case a certain E&S issue poses potentially high risks to investors and host countries, necessarily including vulnerable groups such as the indigenous communities, the deprived, and women and girls, the E&S Risk Management Committee (ESRMC) will be convened *ad hoc*, inviting the representatives of the stakeholder groups. For the highest level of risk – unjustified, i.e., hard to remedy within the ESMS and the Covenant, so that the CTF is required to consider the cessation or cancellation of investment agreement, the CTF senior management shall be activated to address the concerning red flags. In the latter case, an external audit will be strictly carried out with KDB's direct engagement.

The programme is organised as a fit combination of: (i) preparatory stages for the CTF application (Components 1 and 2); (ii) CTF investment as Component 3 (from application, approval, implementation of the approved climate projects, and monitoring and evaluation); (iii) a simultaneous and/or parallel activities on the ground for local ecosystem capacity building (Component 4).

Accelerating ESS Capacity Enhancement of Shortlisted JVs for Investment Readiness. Given that most of the local applicant companies and some of global innovators might not be properly equipped with a strong level of ESMS, the R&DB readiness and acceleration (components 1 and 2) shall assist local and/or JV level entities in strengthening their preliminary ESMS and climate impact status by providing diagnostic-based advisory support. In addition, upon request, the applicant JVs have access to readiness-stage ESS and climate impact consulting services: i.e., scoping, preliminary E&S screening, and categorisation. E&S advisory services as part of the non-CTF components are extension of the fund's E&S risk management and due diligence, as they will reduce rejection rates in the CTF approval stage in component 3, while generating co-benefits of capacitating the candidate JVs in E&S management performance, regardless of the fund application results.

Information Disclosure & Grievance Redress Mechanism (GRM). For Category B projects, JVs may be required to establish a separate stakeholder engagement and commitment plan (SECP) including the information disclosure plan in accordance with the GCF IDP-aligned ESMF: the frequency and level of disclosure may vary in proportion to the level and nature of the E&S risks and impacts. This will be fine-tuned by the CTF E&S and Gender Compliance Team's (ESGCT) review, consultation, and capacity building support. Also, all of the JVs are required to develop and operate the GRM in accordance with the GCF standards, as KDB, GGGI, SMU, and the GP can also be alternative receptors of grievances in the intermediate executing platform. Grievances lodged at the JV or country SMU level shall be reported through regular procedures to the CTF, which will be primarily reviewed by the CTF E&S Compliance Team. A high-risk grievance will be reported to the E&S Risk Management Committee for their attention, and will be subject to the fund-level adjudication as a critical part of the CTF risk management mechanism. Depending on the nature of grievances and findings of the resultant audit (or internal investigation), the fund's decision may be disclosed to the public through a website and other accessible means to country stakeholders for the sake of transparency and accountability.

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

Gender Assessment (GA) and Gender Action Plan (GAP) Established to Overcome the Challenges Facing Women and Girls in STEM and Entrepreneurial Space. The programme's GA and GAP have been devised based on a dynamic process of consultations with key local stakeholders with literature review and feedback communication. GA extracted findings asset that women's entrepreneurial ecosystem seems limited to small and micro-sized enterprises, characterized by low profitability and informality, across the target countries; few women entrepreneurs in the formal sector is attributable to (i) social and cultural constraints, (ii) access to business and markets, and (iii) lack of financing. While limited progress has been recently observed in girls' higher education in all the five countries, women's participation in science, technology, engineering, and math (STEM) has been identified to be significantly less than that of

men's. S&T enterprises in the region with cultural stigmatisation seems culturally less likely to welcome women as a counterpart. Women also seem underrepresented in the ICT sector and relevant areas requiring a capacity for innovation. In light of this, women in the five recipient countries need to be given prioritised opportunities to become equal partners for climate technology innovation and entrepreneurship, to empower themselves, and to benefit from the programme as the active key agency: be it a direct recipient and a primary beneficiary of the programme through involvement of the funded activities.

Gender Benefits. Gender benefits of the proposed programme has two prongs: On one hand, the very act of financing and supporting the climate tech start-ups and JVs will benefit women by reducing their climate vulnerability and enhancing their resilience. Another prong is the programme design (through gender mainstreaming) itself. Most importantly, gender plays a key role as one of the CTF investment criteria (see Table 3); only JVs (or partnerships) screened by the CTF Gender Compliance Team shall grasp the investment opportunities at scale.

As per the CTF investment criteria, the programme deliberately targets female technology leaders and gender-friendly (women-founded, headed or more than 50% employees being women) firms as prioritised beneficiaries of the CTF funding. Selection of the local candidate firms for the CTF will target at least 30% of the selected firms being gender-friendly (outcome statement of component 1 in GAP) and CTF shall target 50% of the fund portfolio companies being either gender-friendly or committing to establish and fulfil their own gender mainstreaming action plans as an investment agreement condition. (outcome statement of component 3 in GAP). Component 4 (TA) of the proposed programme shall focus on nurturing and supporting the creation of enriched gender-inclusive tech-driven entrepreneurship ecosystem.

Integrating Gender Considerations into the Entire Programme since the Programme Inception, Maximising the Synergy Effects with E&S Safeguards Specialists. Since a scratch outline of the concept, the programme has been designed, advanced, and sophisticated with a strategic gender focus, driven by a team of KDB, GGGI, and external gender experts. It has resulted in programme components equipped with measures and tools for nurturing talented women to be skilled human resources and encouraging their proactive engagement surrounded by the region's innovation leap; e.g., Under component 1, partnership with local academic institutions was first inspired with an aim to employ female students majoring in STEM subjects, recognising realistic constraints of forming women-led SMEs (JVs) in component 2 as a result of feasibility studies.

Above all things, the programme plans the establishment and operation of an independent E&S and Gender Compliance Team (ESGCT) in pursuit of the best gender risk management mechanism in close communication with ESS experts, on which the climate technology acceleration initiative will be excellently operational with female talents accounting for 50% of the programme beneficiaries and creation of lots of women-led/owned tech companies in the five countries' nascent innovation markets.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

Adequate Financial Management at the Programme's Core. As a legally authorised accredited entity under the Accreditation Master Agreement (AMA) effective since re-accreditation, KDB will supervise and oversee the whole capital flow of the programme, pursuant to the Funded Activity Agreement (FAA) to be made upon the Board approval on the funding proposal. The programme's financial resources will be channelled, allocated, transferred, managed, monitored, audited, and sustained by a set of legal and contractual arrangements, pursuant to the FAA provisions; KDB pre-sets up the programme-specific structure of multiple legal and contractual arrangements as depicted in the Capital Flow with Legal and Contractual Arrangements of Section B, to be able to direct the alignment of the FAA umbrella setting and control all the contracting parties. Meanwhile, KDB shall receive, channel, hold, administer, monitor, return,

and record the GCF proceeds in an independent GCF account in accordance with the AMA and FAA, so as to avoid a mix of investments sourced from KDB or third parties.

In addition to KDB's overarching financial oversight and supervision at a programme level, the programme builds partnership arrangements with global/local investors through intermediation of the GP team, and with local ecosystem stakeholders through intermediation of the GGGI. In that some of them or their sources of capital may come from countries in the Grey List and prohibited sources under AML/CFT guidance, KDB will strengthen stricter due diligence and legal arrangements, surely including AML/CFT covenants, with the executing entities. In particular, the programme has endeavoured a tie with local partner entities under formally regulated systems of finance, in order to ensure adequate management of the proceeds at a project level. Designated local partner entities will function as safety nets to address conventional financiers' heightened concerns over traditional lack of transparent capital flows due to immature financial management systems and informal economic environments in the investment receiving countries. Legal or contractual agreements to be entered into between the GGGI and local acceleration partner entities will stipulate roles, obligations, and responsibilities as robust covenants to ensure transparent and accountable management of financial resources in compliance with the FAA, in terms of, including but not limited to, information disclosure, reporting, anti-money laundering, and counter terrorist financing.

Executing entities will follow KDB's guidance for financial management. In fact, KDB once had operated and managed the GCF Project Preparation Facility (PPF) proceeds in partnership with GGGI and its engaging consortium partners over 11 months, which was fully audited by an independent external auditor and transparently confirmed with a clearance from the GCF Secretariat. In short, as for this team-up, such operation and management capacity of the GCF proceeds have been already proven. KDB, GGGI, PwC (and its consortium members), and the GP team all are equipped with an internal oversight mechanism that includes financial control and internal/external audit, evaluation, investigation, and other management support system to maintain various financial transactions in different forms in line with the global standard, which is transparently disclosed under several internal and external supervisory layers.

Procurement Undertaken in Compliance with KDB Procurement Policy, Proven to be Aligned with the GCF Standard. Upon launching the PPF in July 2021, KDB issued a request of proposals (RfP) to receive competitive bid offers. The two-month long open tender process was carried out in compliance with KDB procurement policy aligned with the *Act on Contracts to Which the State is a Party* as a state-owned bank under scrutiny by oversight authorities as well as civil parties, which abides by the GCF procurement guidance: re-confirmed by the GCF re-accreditation assessment in 2021-2022. The contract was awarded to a PwC-led consortium, composed of PwC's global legal services network, investment advisory firms, and sustainability experts, whose bid met the requirements in the RfP. In addition, NH ARP was assessed and selected as per KDB internal regulation on the fund manager selection.

The programme is accordingly to procure services of the pre-selected consortium members along with the GGGI and its global/local partner entities. As to country-specific selection of local partner entities, during the PPF phase, the GGGI advertised terms of reference (ToR) as per its procurement policy, approved by the GCF standard as Delivery Partner, while the NDAs' recommendations and advice were reserved via consultation. In rolling out activities on advancing climate technology business and the respective ecosystems, relevant, multi-disciplinary stakeholders at both local and global levels are to be adequately procured upon the discretion of the pre-selected consortium members as per KDB guidance, to facilitate the programme execution. For instance, in case technical expertise on a specific climate technology (e.g., weather forecasting, carbon capture, utilisation and storage) is required during the due diligence process, advisory services from specialised technical agencies may be procured on an ad hoc basis.

Procurement Supervision and Oversight. If additional procurement is required in addition to partnering entities procured during the PPF implementation, all executing entities will follow KDB's guidance for

procurement – Article 6 (Procurement Method) of the Guidance for GCF-Funded Projects approved by the GCF, while pursuing their own procurement policy and rules only in case theirs are stricter in terms of threshold and method as for GGFI and using the existing service providers of NH ARP. All the procurement activities will be reported to KDB – so accordingly to GCF – while being screened as per regular supervision and oversight duties as Accredited Entity of the programme.

G.4. Disclosure of funding proposal

Note: The Information Disclosure Policy (IDP) provides that the GCF will apply a presumption in favour of disclosure for all information and documents relating to the GCF and its funding activities. Under the IDP, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Information provided in confidence is one of the exceptions, but this exception should not be applied broadly to an entire document if the document contains specific, segregable portions that can be disclosed without prejudice or harm.

Indicate below whether or not the funding proposal includes confidential information.

- ☐ **No confidential information:** The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.
- ☒ **With confidential information:** The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:
- full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
 - redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

H. ANNEXES

H.1. Mandatory annexes

- ☒ Annex 1 NDA no-objection letter(s) ([template provided](#))
- ☒ Annex 2 Feasibility study - and a market study, if applicable
- ☒ Annex 3 Economic and/or financial analyses in spreadsheet format
- ☒ Annex 4 Detailed budget plan ([template provided](#))
- ☒ Annex 5 Implementation timetable including key project/programme milestones ([template provided](#))
- ☒ Annex 6 E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3):
[\(ESS disclosure form provided\)](#)
 - ☐ Environmental and Social Impact Assessment (ESIA) or
 - ☐ Environmental and Social Management Plan (ESMP) or
 - ☒ Environmental and Social Management System (ESMS)
 - ☒ Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People's Plan, Land Acquisition Plan, etc.)
- ☒ Annex 7 Summary of consultations and stakeholder engagement plan
- ☒ Annex 8 Gender assessment and project/programme-level action plan ([template provided](#))
- ☒ Annex 9 Legal due diligence (regulation, taxation and insurance)
- ☒ Annex 10 Procurement plan ([template provided](#))
- ☒ Annex 11 Monitoring and evaluation plan ([template provided](#))
- ☒ Annex 12 AE fee request ([template provided](#))
- ☐ Annex 13 Co-financing letter of intent, if applicable ([template provided](#))
- ☒ Annex 14 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

- ☐ Annex 15 Evidence of internal approval ([template provided](#))
- ☐ Annex 16 Map(s) indicating the location of proposed interventions
- ☒ Annex 17 Multi-country project/programme information ([template provided](#))
- ☐ Annex 18 Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
- ☐ Annex 19 Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
- ☐ Annex 20 First level AML/CFT (KYC) assessment
- ☒ Annex 21 Operations manual + Project Selection Tool
- ☒ Annex 22 Assessment of GHG emission reductions and adaptation benefits (ex-ante impact modelling)
- ☒ Annex 23 Climate basis and additionality analysis
- ☒ Annex 24 Country-level climate rationale
- ☒ Annex 25 EE Capacity Assessment

* Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.