

Climate Technologies and Technology Needs Assessments (TNA) activities in Asia-Pacific

Webinar

16/06/2020

10AM-11:30AM CET

Subash Dhar– UNEP DTU Partnership

Vladimir Hecl – UNFCCC

Tigran Sekoyan – Ministry of Environment, Republic of Armenia

Sivanappan Kumar – Asian Institute of Technology

Jens Radschinski – UNFCCC Regional Centre, Asia

Emerson Resende – Green Climate Fund

Moderated by Léa Jehl Le Manceau – UNEP DTU Partnership



Introduction to the webinar

Léa Jehl Le Manceau, TNA Project Assistant - UNEP DTU Partnership



Introduction to the Technology Needs Assessment (TNA) project in Asia-Pacific

Subash Dhar, TNA Regional Coordinator Asia-Pacific - UNEP DTU Partnership



TNAs and the UNFCCC process

Vladimir Hecl, Programme Officer - UNFCCC



National perspectives on the TNA process

Tigran Sekoyan, TNA Mitigation Consultant- Ministry of Environment of Armenia

Participation of Rubik Shahazizyan, Head of eco-educational project unit EPIU - Ministry of Environment of Armenia



Asian Institute of Technology's regional views on the TNA project

Sivanappan Kumar, Professor in Energy Studies - Asian Institute of Technology



UNFCCC Regional Centre in Thailand & TNA activities

Jens Radschinski, Head - UNFCCC Regional Centre in Asia



Presentation from the Green Climate Fund

Emerson Resende, Climate Policy Specialist - Green Climate Fund

Q&A session



GDPR



Data Protection
Officer (DPO)



Compliance



25 May 2018



Data Breaches



Personal Data



GDPR Principles:

- Lawfulness
- Fairness
- Transparency
- Data minimization
- Storage limitation
- Accuracy
- Integrity and Confidentiality



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Subash Dhar

Subash is a Senior Economist at UNEP DTU Partnership and he is as well the TNA Regional Coordinator for the Asia-Pacific region. As a Regional Coordinator, Subash has a strong experience in working with most countries within Asia Pacific region. For example, Subash has been involved in promoting electric mobility in Asian cities as a means for reducing air pollution, improving access and reducing CO2 emissions. Subash is a Lead Author in the Intergovernmental Panel on Climate Change (IPCC). His research interests include sustainable urban transport, low carbon development in developing countries, technology transfer and climate change and he has published a number of peer-reviewed papers on these topics.



Vladimir Hecl

Vladimir is Programme Officer at the UNFCCC, Bonn, Germany. He received Ph.D. from Technical University in Zvolen, Slovakia in 2012 from assessment of NOx production from short rotation biomass combusting. After over 10 years working at Energy Centre Bratislava, he served as project officer in Intelligent Europe Energy Agency of the DG TREN of the European Commission. In 2006 Vladimir joined the technology implementation team of the UNFCCC, working in technology negotiations, and in technology needs assessments of non-Annex I Parties to the UNFCCC, including both mitigation and adaptation technologies.



Tigran Sekoyan

Tigran works at the Ministry of Environment of Armenia and has been a TNA coordinator in relation to mitigation activities, in Armenia. Tigran has professional experience as a manager, engineer and consultant in the Energy Efficiency, Renewable Energy, GHG inventory and Climate Change Mitigation measures impact assessment projects. Working in state, private and international enterprises on highly responsible positions, he has excellent knowledge of local legislation in relevant sectors, skilled practice in sustainable energy, energy auditing and monitoring, technology need assessment, and resource efficiency projects execution.



Sivanappan Kumar

Sivanappan is Professor in Energy Studies at the Department of Energy, Environment and Climate Change, School of Environment, Resources and Development, Asian Institute of Technology (AIT). His research has been on renewable energy resource assessment, solar thermal and photovoltaic technologies, energy efficiency in buildings and industries, Technology Needs Assessment for greenhouse gas mitigation, energy access, low carbon and smart cities, and low carbon energy systems and green growth.



Jens Radschinski

Since 2017, Jens is the Head of UNFCCC's Regional Collaboration Centre (RCC) for Asia Pacific, which is located in Bangkok. Prior to this, Jens has been working with the UNFCCC Secretariat in Germany for over 5 years. At RCC Bangkok, Jens supports project participants and Designated National Authorities (DNAs) on the implementation of Clean Development Mechanism (CDM) projects, and also leads all other activities the Centre is undertaking in the region, namely in the fields of green finance, carbon markets, NDC support and Global Climate Action. Jens has built expertise in wastewater management, renewable energy (especially biogas and biomass in agro-industry), and waste management.



Emerson Resende

Emerson Resende is a Climate Policy Specialist at the Green Climate Fund in South Korea. He's responsible for advising the Fund on issues of technology development and transfer and guiding the implementation of directions received from the UNFCCC Conference of the Parties, in particular on issues of complementarity and coherence with other climate funds. Before joining the GCF, Emerson worked for the Food and Agricultural Organization of the United Nations and GIZ on the ground, the IDB Invest in Washington DC and led the Private Sector Initiative of the UNFCCC secretariat in Germany.



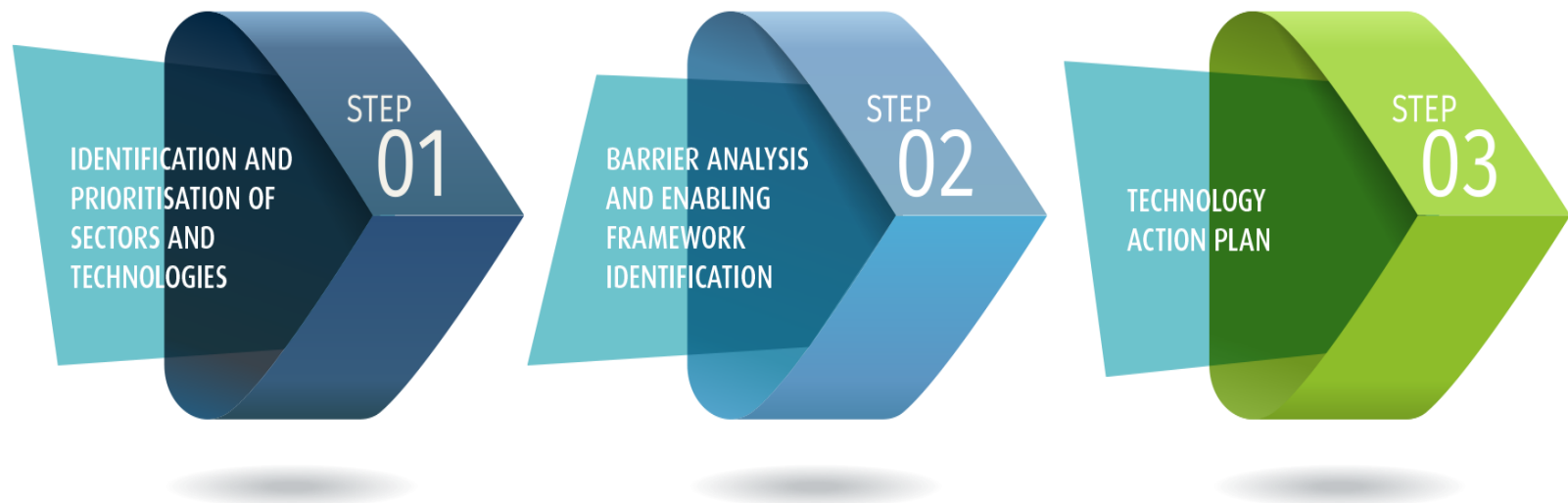
www.tech-action.org

Subash Dhar (sudh@dtu.dk)

What are the Technology Needs Assessments?

- climate technology pathways for implementing the Paris Agreement

TNAs are a set of activities that identify and analyse mitigation and adaptation technology priorities of developing countries



- ***Funded by the Global Environment Facility, implemented by UN Environment through UNEP DTU Partnership***



TNA COUNTRIES IN ASIA PACIFIC

2009-2021

Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, Cambodia, Fiji, Georgia, Indonesia, Jordan, Kazakhstan, Laos, Lebanon, Mongolia, Myanmar, Nauru, Pakistan, Philippines, Sri Lanka, Thailand, Vanuatu, Vietnam

2020-2023

Kiribati, Maldives, Niue, Papau New Guinea, Solomon Islands, Timor-Leste, Tonga, Tuvalu



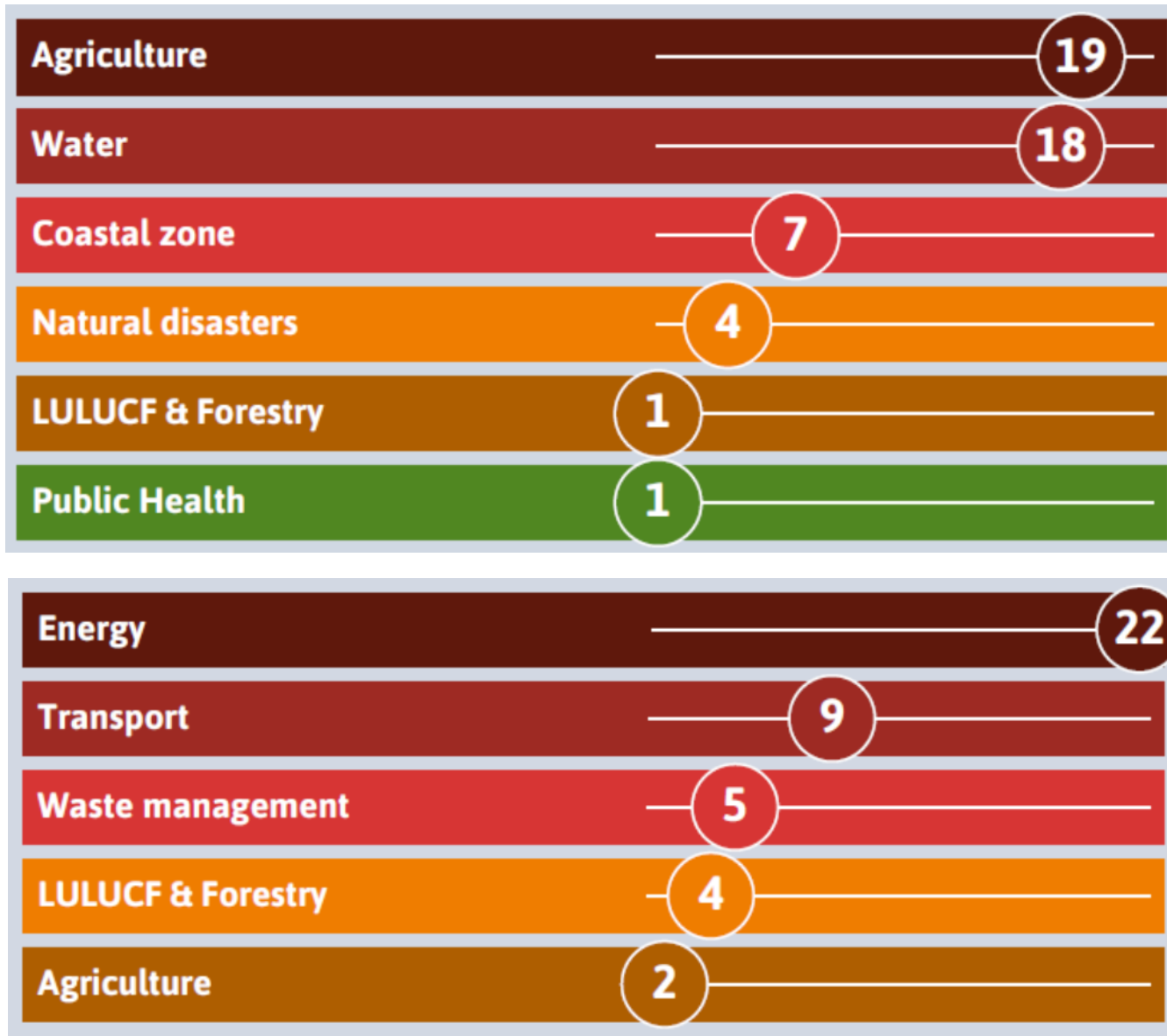
Regional activities



- ✓ Regional capacity building workshops
- ✓ Technical support missions
- ✓ National trainings
- ✓ Help desk
- ✓ e-learning
- ✓ guidebooks & tools



Priority sectors, Asia



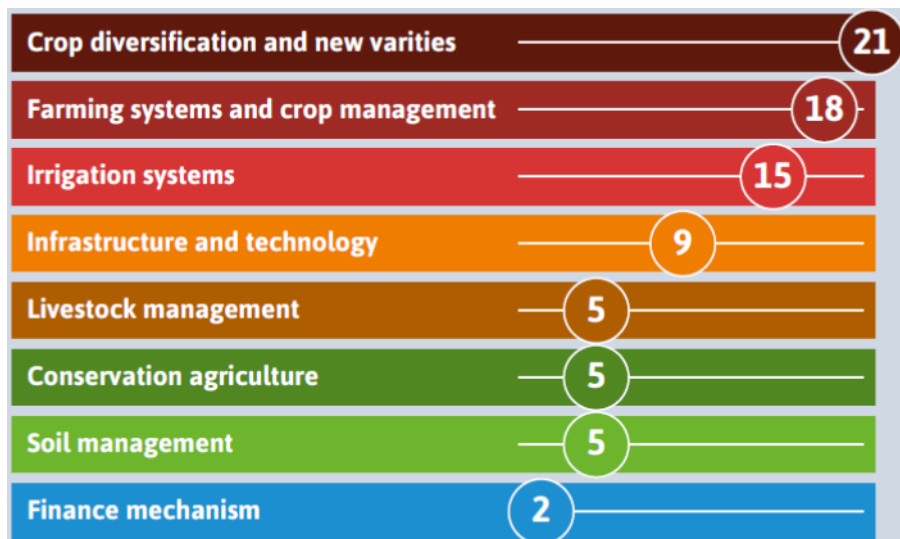
Adaptation

Regional TNA brief available here:

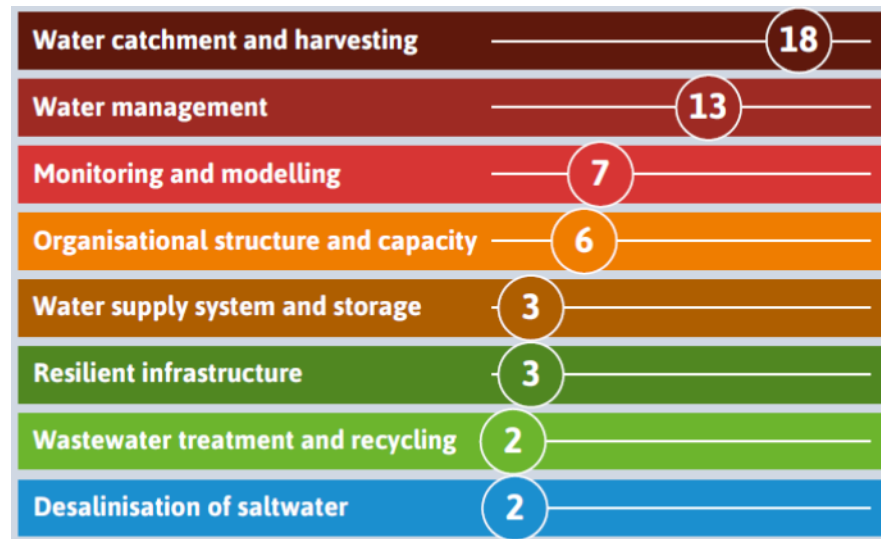
<https://tech-action.unepdtu.org/resources/>

Mitigation

Agriculture

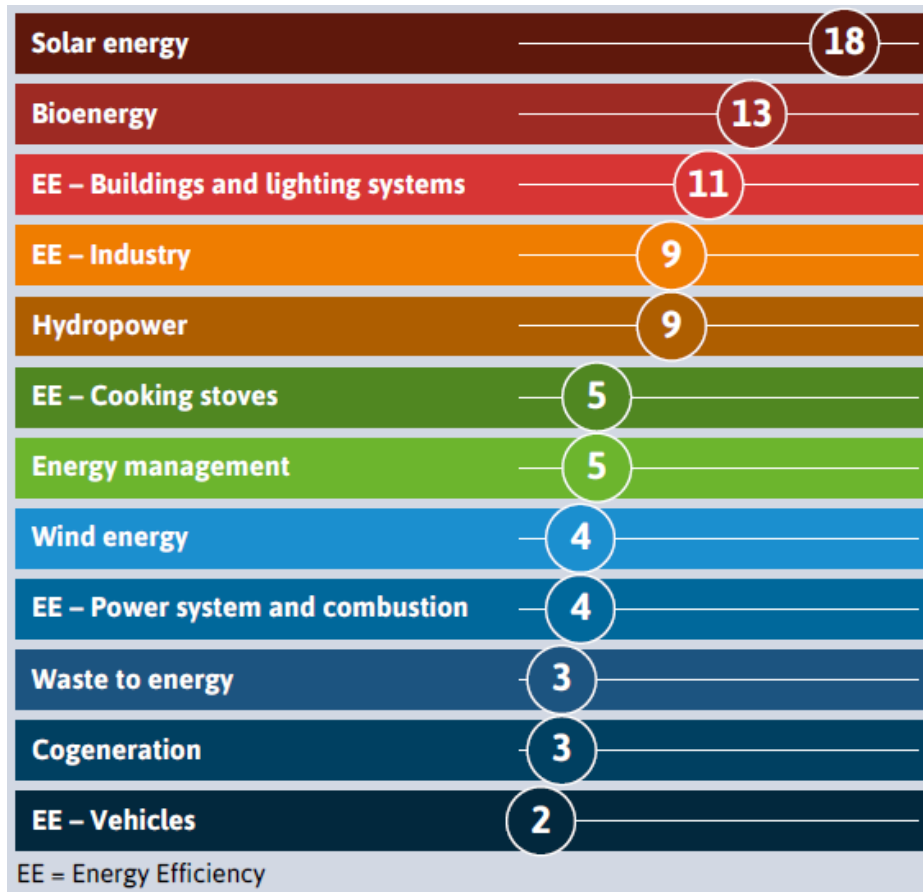


Water

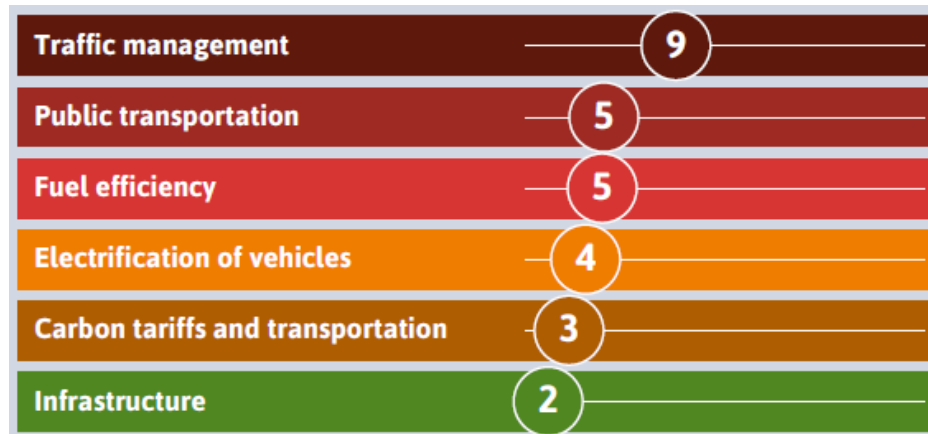


Priority Technologies for Mitigation - Asia

Energy sector

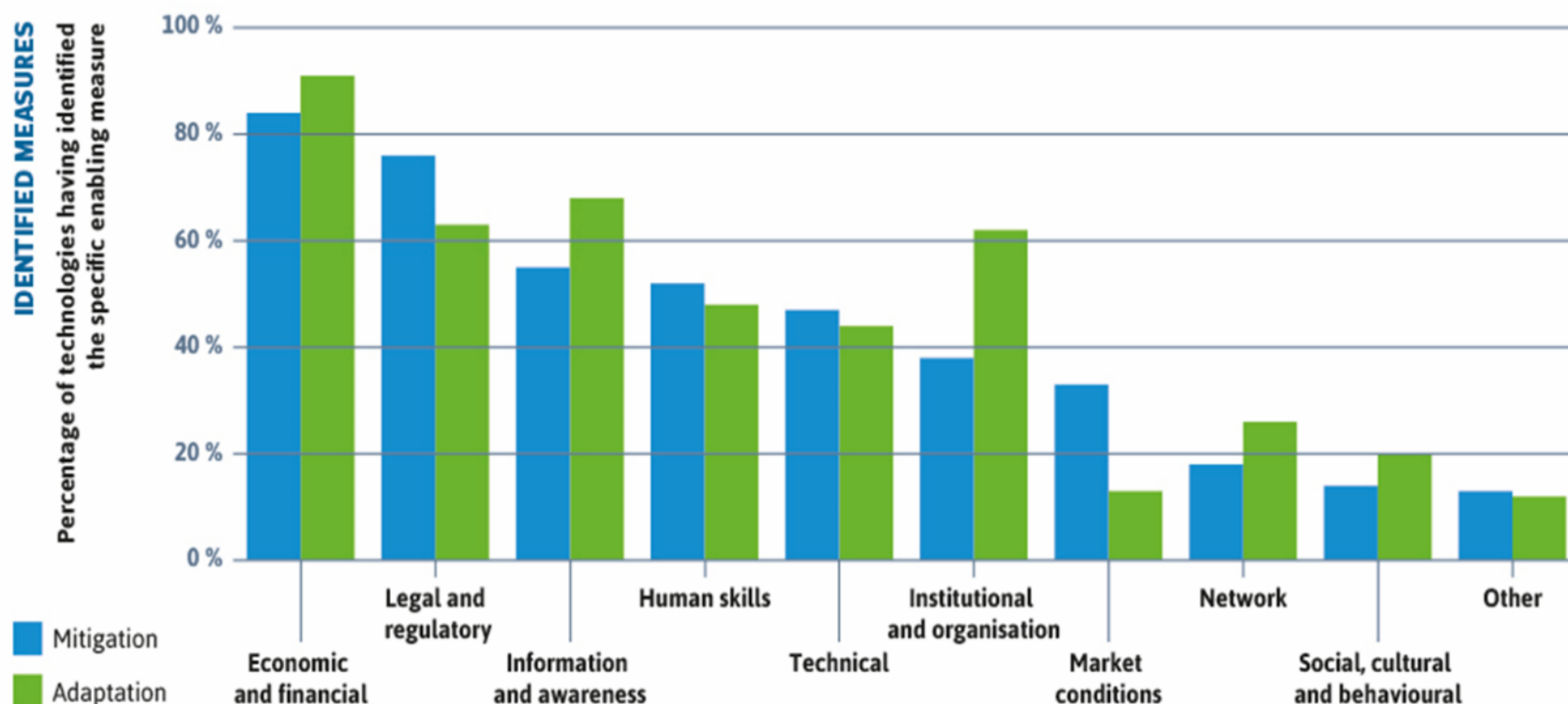


Transport sector



The ecosystems

- requirements for technology transfer, implementation and uptake to be successful



Hydrodynamic Modelling for Jakarta

- Flooding in coastal zones a severe problem aggravated by climate change.
- CTCN support for flood hazard mapping and hydrological modelling
- Developed a hydrodynamic model and improved local capacity
- were integrated in its Nationally Determined Contribution

Karachi Green BRT

- Bus Rapid Transport a priority in TNA and **also for province of Sind** .
- High capital costs (583 million US \$) and relatively low revenues
- Grants from provincial government to improve viability
- ADB loans and Economic IRR and not Financial IRR for appraisal
- GCF participation in biomethane plant to reduce CO₂ emissions from buses
- GCF providing grants and a concessional loan



The screenshot shows the TNA (Technology Needs Assessment) website. The header includes the TNA logo (TECHNOLOGY NEEDS ASSESSMENT) and navigation links: Countries & technologies, Resources, TNA Database, and About, along with a search icon. The main banner features a background image of green corn stalks with the text: "We facilitate enhanced action on technology to help developing countries achieve the goals of the Paris Agreement." Below this text is a blue "Read more" button. At the bottom of the banner, a small text line states: "The TNA project is implemented by the United Nations Environment Programme and the UNEP DTU Partnership on behalf of the Global Environment Facility." To the right of this text are the logos for UNEP DTU PARTNERSHIP, UN environment, and gef.

More information on TNAs available at:

www.tech-action.org and <http://unfccc.int/ttclear/>

Climate Technologies and Technology Needs Assessment activities in Asia and Pacific

UNEP DTU & UNFCCC Webinar
June 16, 2020



Vladimir Hecl
UNFCCC Technology team

Technology in Paris Agreement

- Parties share a long term vision on **importance of fully realizing technology development and transfer** in order to improve resilience to climate change, and to reduce GHG emissions.
- **Establishment of technology framework** to provide guidance to the work of technology mechanism in promoting and facilitating enhanced action on technology development and transfer in order to support the implementation of the PA.
- Parties to the UNFCCC shall **strengthen cooperative action** on technology development and transfer.
- The **Technology Mechanism** established under the Convention **shall serve PA**.



To operationalize Paris Agreement, the COP in its Decision 1/CP.21, (para. 67) requested the SBSTA to initiate elaboration of the **Technology Framework** which should:

- Facilitate undertaking and updating TNAs, and implement their results via bankable projects,
- Provide enhanced finance and technical support,
- Assess technologies that are ready for transfer,
- Enhance enabling environments for, and address barriers to, development and transfer of environmentally and socially sound technologies.



Key themes of the Technology Framework:

- Innovation
- **Implementation (TNAs)**
- Enabling environments and capacity building
- Collaboration and stakeholder engagement
- Support



Implementation:

- Actions and activities under this key theme should also facilitate the implementation of mitigation and adaptation action identified using planning tools and processes such as:
 - nationally determined contributions,
 - long-term low greenhouse gas emission development strategies,
 - **technology needs assessments**,
 - national adaptation plans,
 - technology road maps and
 - other relevant policies,

and facilitate overcoming challenges by implementing such action.

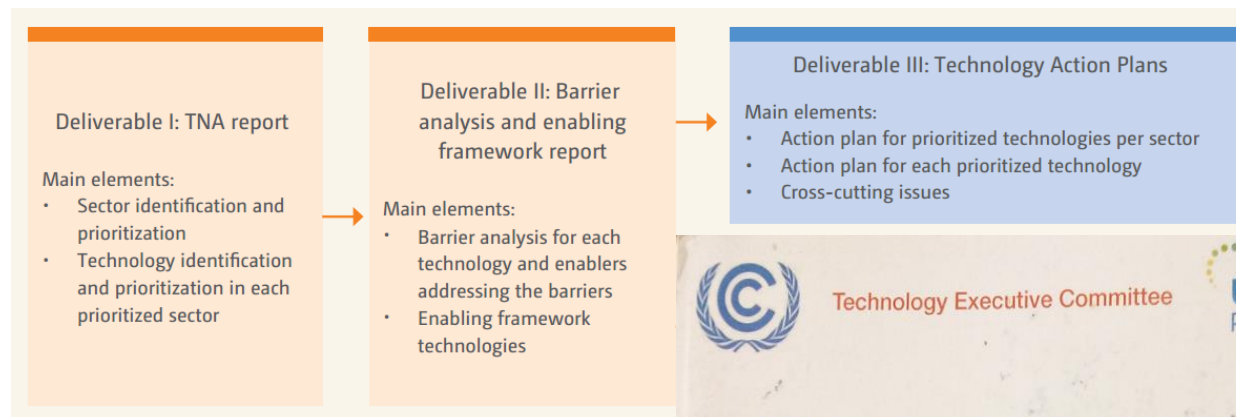


Implementation:

TNA discussed workstreams:

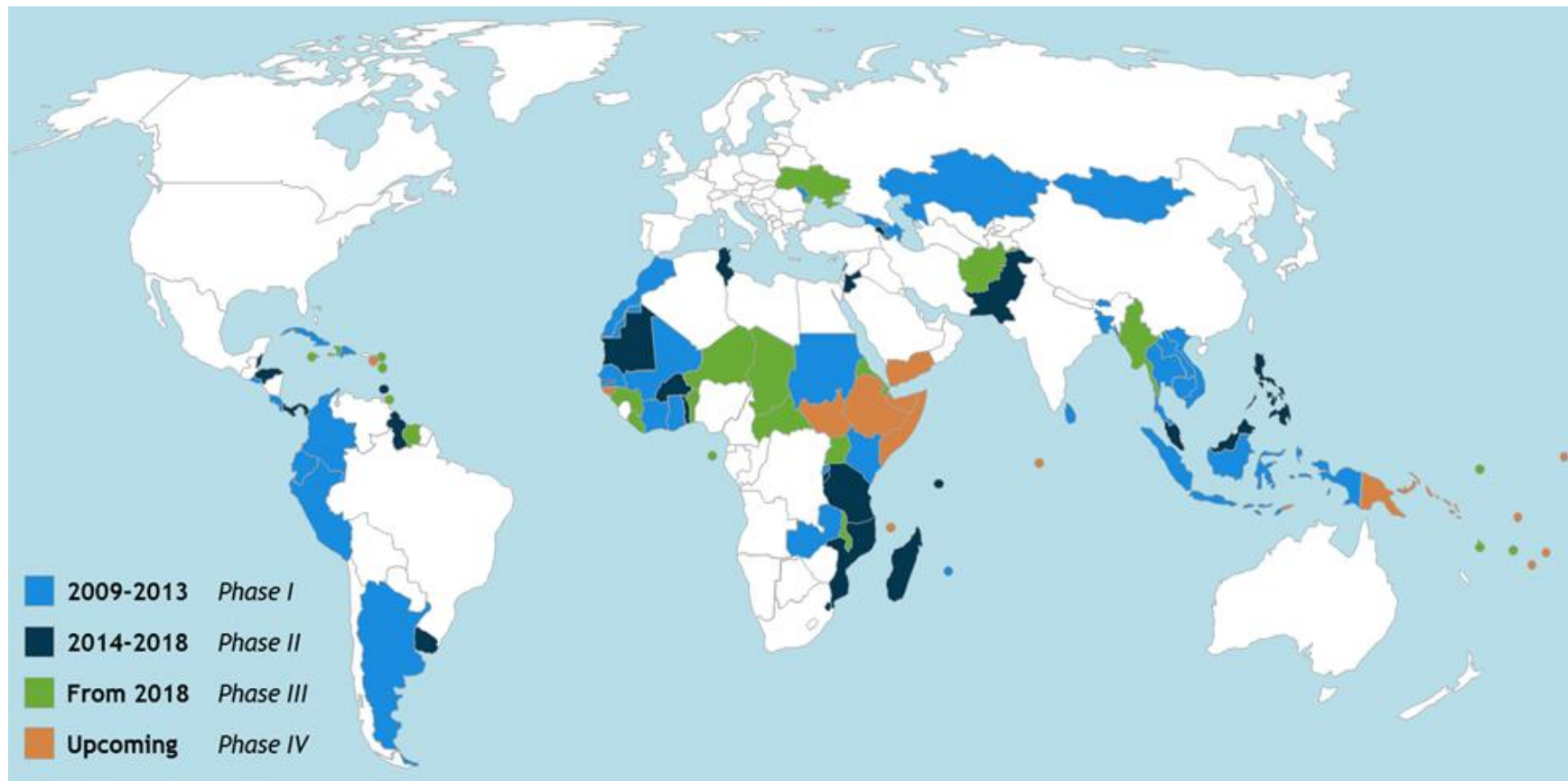
- **Facilitating the undertaking and updating of TNAs**, as well as enhancing the implementation of their results, particularly technology action plans and project ideas, and capacity building related to TNAs.
- **Promoting the alignment of TNAs with NDCs and NAPs** in order to increase coherence between the implementation of those national plans with national strategies to achieve climate-resilient and low-emission development.
- **Reviewing the TNA guidelines** and updating them as necessary with a view to TNAs leading to plans and implementation that are aligned with the transformational changes envisioned in the Paris Agreement.





GEF TNA GLOBAL SUPPORT PROJECT





4th TNA synthesis report

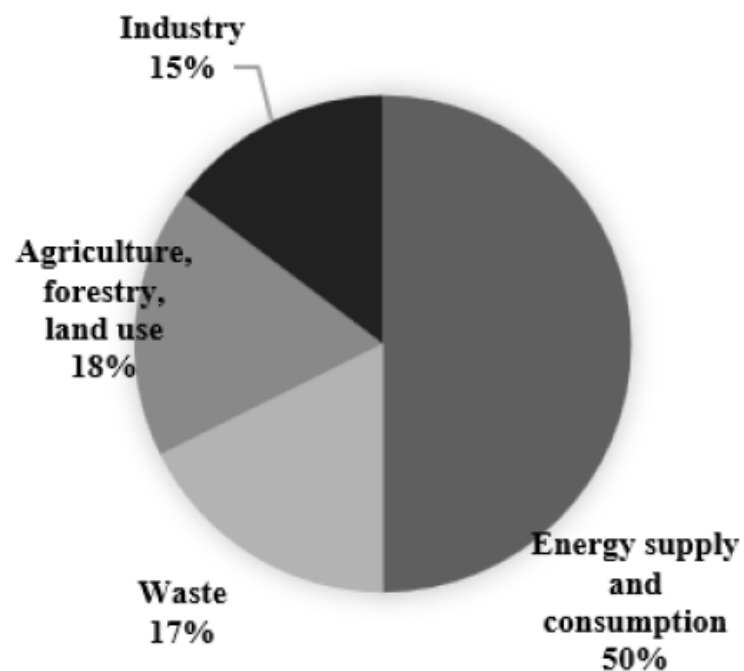
- The 4th TNA synthesis report covers the finalized TNA reports of 53 non-Annex I Parties that were submitted by 20 August 2019
- TNA reports were submitted by 21 Parties from Africa, 18 Parties from the Asia-Pacific region and 14 Parties from Latin America and the Caribbean.
- Energy production in mitigation and Agriculture and Water were reported by African countries as the sectors with most of climate technology needs.



4th TNA synthesis report

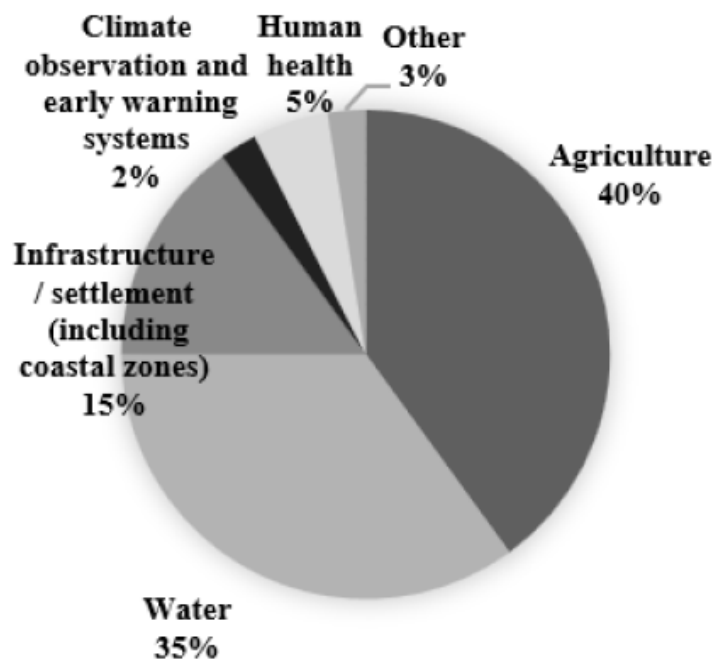
Mitigation sectors

ASIA-PACIFIC



Adaptation sectors

ASIA-PACIFIC



Content of a new TEC Policy Brief

- Describes gaps, challenges and good practices of the TNA implementation process,
- Provides overview of good practices of TNA implementation,
- Delivers examples of ways to enhance implementation of TNAs,
- Offers recommendations on actions for enhancing the implementation of TNA results on various levels: domestic, regional, international, financial, private sector, others.



Gaps and challenges

- Lack of domestic capacities to facilitate implementation,
- Limited access to funding sources in many developing countries,
- Lack of involvement of funding institutions in the early stages of the preparation of project proposals,
- Implementation-oriented approaches are not sufficiently considered,
- Late engagement of funders with TNA teams,
- Mismatch between TNA identified priority needs and priorities of donors.



TEC Policy Brief on TNA experiences, lessons learned and good practices

Good practices of TNA implementation

Bhutan (Phase I)	Intelligent transport systems	Use TAP for application to CTCN; training and field visits and additional training on developing a NAMA.
Thailand (Phase I)	Precision farming: Decision support system freeware	TNA incorporated into Thailand's Climate Change National Plan 2015–2050; pilot project for developing decision support scheme freeware for farmers.
Mongolia (Phase I)	Renewable energy and energy efficiency technologies	XacBank used TNA outcomes to develop a loan programme, the first private sector entity in a developing country to receive funding from the GCF (USD 20 million) to extend its existing business loan programme of USD 60 million; expected impact: 149,290 tonnes of carbon dioxide emission reduction per year.



Good practices of TNA implementation

Lebanon (Phase I)	Harvesting rainwater to make up for lack of precipitation	Three pilot projects by UNDP and the Ministry of Environment for harvesting rainwater from greenhouse rooves.
Jordan (Phase II)	Grassland management	Pilot project funded by the GEF; concept note for the GCF, supported by the CTCN and UNEP DTU Partnership and TNA outcomes.

Ways to enhance implementation of TNAs

- The engagement of stakeholders and ministries during the TNA and post-TNA phase in order to **include TNA-prioritised technologies in new or ongoing governmental programmes**,
- Co-development of TNAs and TAPs with NAMAs, NDCs, GEF, GCF and AF pipelines helps to **mainstream TNA outcomes in overarching national strategies and programmes** for climate and sust. dev.,
- **Development of pilot projects to demonstrate technology options**, with financial support from multilateral funding programmes and development partners, and technical support and advice from CTCN,
- **Engage possible funders for the TAP activities in an early stage of the TNA-TAP process**, which can inform country stakeholders about what funders will fund and avoid mismatches between countries' and funders' priorities,
- **Consideration of TNA prioritised technology options in proposals** submitted to the GCF and other relevant institutions,
- **Role of equipped and trained champions is key for projects success**, to continue work beyond TNA project timelines.

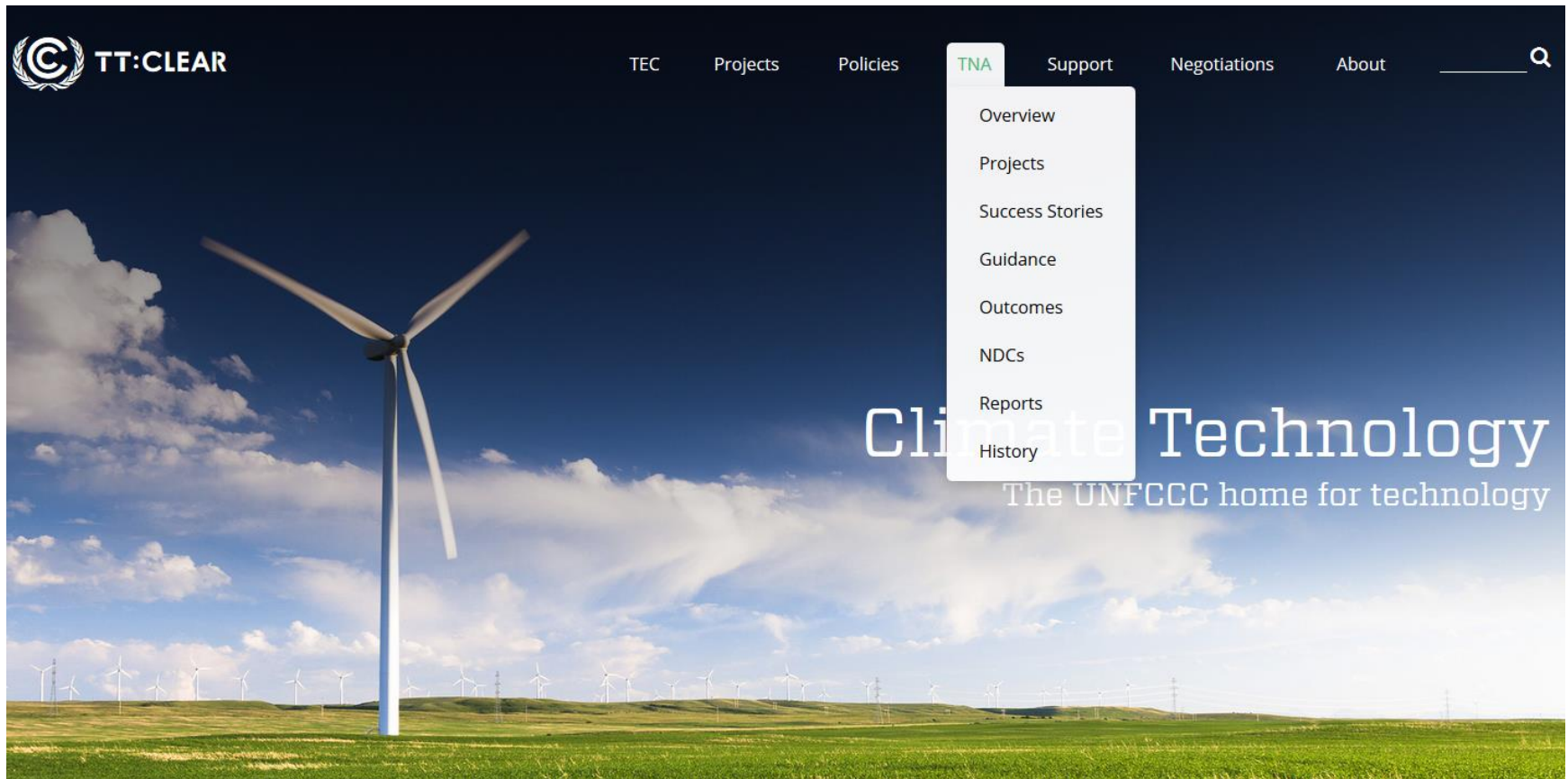


Recommendations on actions for enhancing the implementation of TNA results

Domestic (capacity building, enabling environment)

- **Further promotion of TNA results** domestically with a view to enhance their implementation,
- Experts from relevant bodies, such as Ministries of Finance, and Energy/Economy, NDEs, NDAs and others could be introduced to domestic TNA results as an opportunity to leverage their implementation potential,
- **Governments have a major role** to play in creating the enabling environments for technology transfer through strengthening of legal and regulatory frameworks,
- An effective **enabling environment** for technology development and transfer is often characterized by sound coordination and communication among government departments and agencies, with the goal of streamlining and easing the way for technology investment,
- **Tracking of implementation of TNA results** is not only included as a final step of the TAP development, but also as an issue to be discussed upon the start of the TNA process.





Thank you



Technology Needs Assessment (TNA) Armenia Perspectives

**Webinar Title: Climate Technologies and Technology Needs
Assessments activities in Asia Pacific**

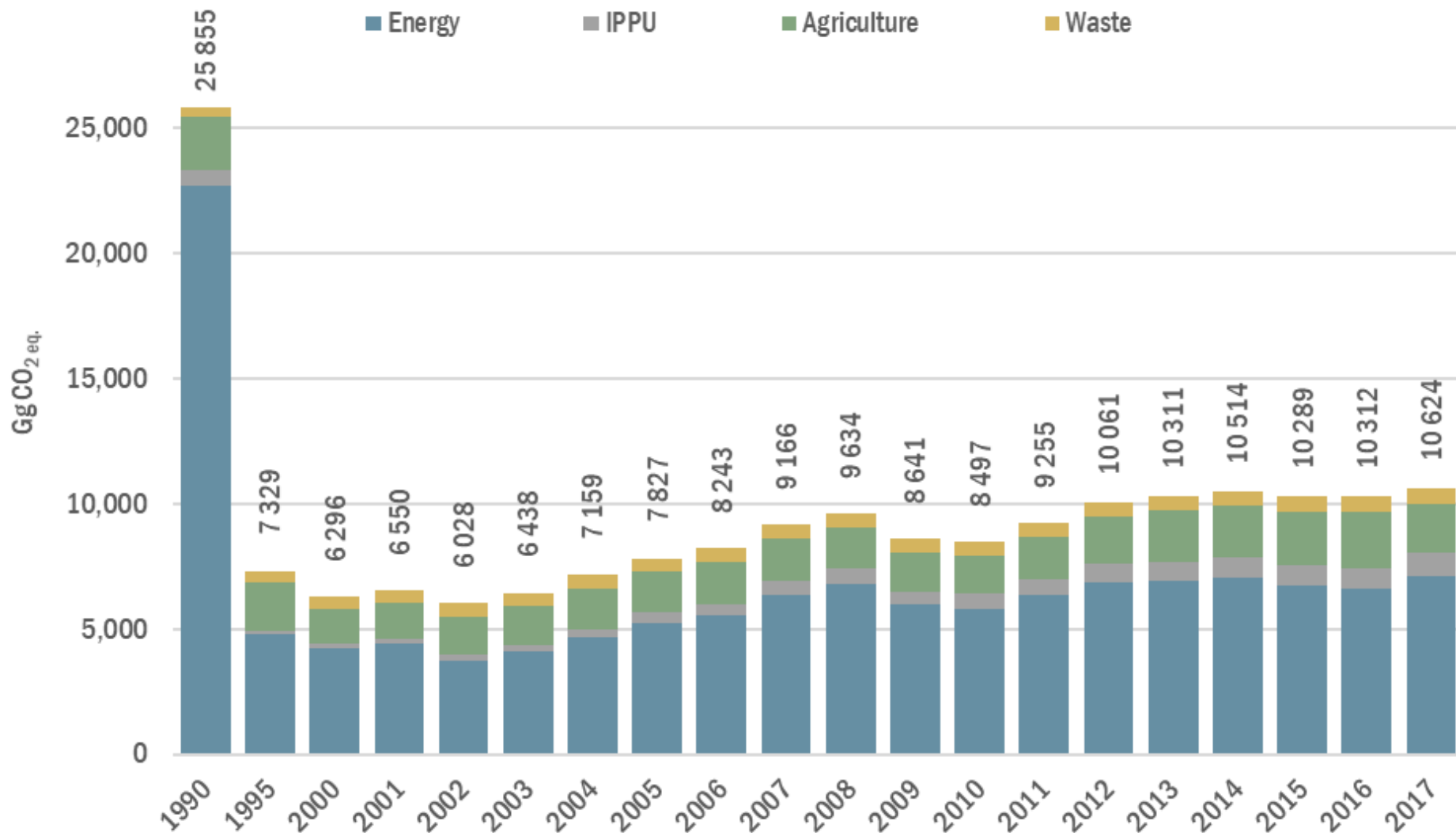
16 June 2020

Rubik Shahazizyan, Head of eco-educational project unit, of EPIU State
Institution of the RA Ministry of Environment,
Tigran Sekoyan, During the project coordinator of mitigation activities

- The Republic of Armenia ratified the United Nations Framework Convention on Climate Change in May 1993.
- In December 2002, RA ratified the Kyoto Protocol.
- In February 2017, RA ratified the Paris Agreement.
- The RA submitted its INDC to the UNFCCC Secretariat in September 2015. Armenia undertook to pursue economy-wide mitigation measures, striving to achieve per capita emissions of 2.07 tCO₂e in 2050, subject to adequate international financial, technological and technical support.
- In September 2019, at the UN Climate Action Summit, the RA declared its intent to enhance its initial NDC in 2020.

- The Fourth National Communication (NC4) on Climate Change of the RA was developed in 2020 according to UNFCCC and the Guidelines for national communications of Non-Annex I Parties to the Convention. NC4 covering the period of 2013-2017 has extended the studies on and assessments of climate change-related issues.
- The National Inventory Report (NIR) of the RA is updated as of 2017. Third Biannual Update Reports (BUR3) is currently under development.
- The NDC (2021-2030) is based on the principle of “Green Economy” and is compatible with the SDGs reflected in social and economic development goals of the Republic of Armenia.

Trends of GHG emissions in Armenia



1990-2017 GHG emissions by sectors (without Forestry and other land use)

Scaling Up Renewable Energy Program for Armenia settles two objectives: 21% of RES in total power generation by 2020, and 26% by 2025 with specific targets by technology.

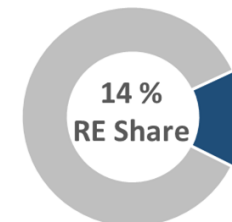
2,930 MW

Available capacity



420 MW

Installed RE Capacity



Total
without
large
HPP

Installed Renewable Electricity Capacity
2019 in MW

Technical Potential for Installed
Renewable Electricity Capacity in MW

	Biomass	Solar PV	Wind	Small Hydro	Total without large HPP
Installed Capacity (MW)	0	43	3	374	420
Technical Potential (MW)	29	1,169	795	91	≈2,084

Recent legislative reforms, amendments to the RA Law on Energy and to the RA Energy Saving and Renewable Energy Law along with tariff policy, Solar PVs construction Investment Program and Hydro Energy Development Concept aimed at promoting solar energy generation.

- The project was supported by the Global Environment Fund (GEF), implemented by United Nations Environment Programme (UNEP) and executed by the UNEP DTU Partnership (Technical University of Denmark, UDP).
- More than 50 technologies were proposed and assessed for both adaptation and mitigation during the TNA process in Armenia and 20 technologies have been prioritized, including 6 adaptation and 14 mitigation technologies.
- “High” quality ratings was awarded to Armenia by regional experts after the Terminal Evaluation of the UNEP/GEF Project “TNA Phase II in 2019.



Agriculture	Water
Windbreaks as climate change adaptation tool	Creation of circulatory water system for fisheries
Local melioration and low-volume drip irrigation for newly planted orchards	Installation of compact treatment plants
Diversification of agriculture	Application of natural and hybrid treatment systems
	Spreading and expansion of drip irrigation system

Energy	Industry
Cogeneration, Small Scale Combined Heat and Power production	Production of synthetic rubbers from butadiene instead using natural gas in Chemical Production
Improving energy efficiency in multi apartment buildings. Registry creation, development.	
Mandatory realization of the Industrial Energy Audit as a mitigation component	Production and usage of photo luminescent materials with long-term lightening
Reactive capacity (power) compensation in the RA electric energy system	
Correspondence of natural gas tariff structure to the methodology approved by decision of PSRC	New type of Entirely Plastic solar water heater

Mitigation

Prioritized Sectors and Technologies

Land Use	Waste Management
Degraded Grassland radical improvement	Utilization of methane form Yerevan city landfill for electricity and heat production
Sustainable Forest management	Existing Lusakert biogas plant operation and reissuance organizational technology
New technology of cultivation of Perennial plants	Complex processing of Artik mining waste

- o Action plans have been published.
- o Within the framework of the implementation of various programs, the presentation of action plans was included in the agenda of the discussions organized in forty-six communities of the six regions of the RA.
- o The action plans have been provided to the municipalities, schools, NGOs, entrepreneurs and SNCOs that manage specially protected areas.
- o The book "Guidelines for the Preparation of the Technological Action Plan" was developed, published and provided to the interested parties.

The following principle has been adopted:

- o The technologies described in the action plans should be provided to all donor organizations for funding.
- o Ideas of the technologies should be included in other Projects proposals.

- o "Establishment of windbreaks and water protection belts" (State funding, Secretariat of the Convention against Desertification),
- o "Installation of wastewater compact treatment plants and application of natural and hybrid treatment systems" (private sector),
- o "De-risking and Scaling-up Investment in Energy Efficient Building Retrofits" (UN Development Program),
- o "Mandatory Industrial Energy audit as a mitigation technology",
- o "Reactive power compensation in the RA electric energy system",
- o "Correspondence of natural gas tariff structure to the methodology approved by decision of PSRC",
- o "Improving energy efficiency in multi-apartment buildings of RA. Registry creation, development". (state support and private sector).

- The experience and practices of the TNA were the basis for establishing the ArmCTCN.
- After the completion of TNA II, with the support of UNIDO a program was implemented in Armenia, within the framework of which the ArmCTCN Consortium and the Road Map were formed.
- RA NDA on CTCN activity and ArmCTCN consortium members are currently considering state registration for the facility.
- The ArmCTCN is at present established through a memorandum between the respective scientific, academic, and other, institutions.
- ArmCTCN cooperates with the Chamber of Commerce and Industry of the Republic of Armenia.

- leveraged by the Paris Agreement, the NDC have a high priority in the national Climate Change strategies as part of Armenia's international commitments and it is felt that TNA/TAP can provide accurate input for the NDC.
- The main considerations taken into account by the government when updating the NDC were to maintain the growth of national economy, poverty reduction, achievement of sustainable development goals, while increasing national energy security and ensuring affordable and clean energy supply.
- The new unconditional mitigation target to be achieved in 2030 equals 40 [50] per cent reduction below 1990 emissions levels.

TNA TECHNOLOGY NEEDS ASSESSMENT

www.tech-action.org

www.env.am

Thank you!

The Asian Regional Center Perspectives on TNA



Sivanappan Kumar
Asian Institute of Technology
(Regional TNA Center for Asia and CIS)
16 June 2020

TNA in Asia: An overview

Phase 1 (2009 - 2013)

Countries: 10

*Azerbaijan, Bangladesh,
Bhutan, Cambodia,
Georgia, Indonesia,
Mongolia, Sri Lanka,
Thailand, Vietnam*

Phase 2 (2014 - 2018)

Countries: 5

*Armenia, Kazakhstan,
Lao PDR, Pakistan and
Philippines*

Phase 3 (2018 - 2021)

Countries: 2

*Afghanistan,
Myanmar*

- Mitigation sector/technologies:
 - *Energy*
 - *Transport*
 - *Waste*
- Adaptation sector/technologies:
 - *Water,*
 - *Agriculture and forestry,*
 - *Early warning systems*



Regional Center: What did we do?

- Capacity Building
 - Capacity building workshops (on TNA, Barrier analysis and enabling framework, and TAP and project ideas)
 - Provide research support
- Technical Support
 - Missions to countries (scoping and specific)
 - Technology Fact Sheets
 - Help desk facility
- Report reviews
 - TNA, Barrier analysis and enabling framework, and TAP reports



Regional Center: What did we do?

- Review of guide books
 - Inputs to UDP
- Global workshops organised at Bangkok
 - Experience sharing workshop, 10-12 September 2012; 36 countries
 - TNA Phase 3 Kick off workshop, October 17-18, 2018; 23 countries
- Member of CTCN
 - Capacity building and incubator workshops
 - Bangladesh, Nepal, Timor-Leste



Observations

- On capacity building / TNA process
 - Modified with additional guidebooks, more time for capacity building
 - Experience sharing workshops
 - *From Regional Center:* Provide inputs to UDP, more hands – on exercise in the workshops, assist the countries with their specific requests (for example, in country training)
- On (TNA) reports
 - Atleast 2 reviews of each report
 - Quality of the report – Coordinator
 - *From Regional Center:* Detailed comments on process, analysis, discussion and conclusions



Observations

- On the number of persons trained
 - Typically it is 3 per country
 - Involvement of financial sector / private sector
 - *From Regional Center:* Additional trainings will be beneficial
- Regarding work/time schedule
 - Generally followed the schedule.
 - Countries used existing working groups /committees
 - *From Regional Center:* Overall, process was smooth
- On post TNA developments
 - Improving the enabling environment;
 - Initiation of new activities
 - *From Regional Center:* Not clear, how and where are the benefits.



Thank you

AIT Team

Professor Sivanappan Kumar

Professor Rajendra Shrestha

Dr P. Abdul Salam

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Climate Technologies and Technology Needs Assessments activities in Asia-Pacific

UNEP DTU & UNFCCC Webinar
June 16, 2020



Mr. Jens Radschinski

Lead of the Regional Collaboration Centre for Asia and the Pacific (Bangkok)

Regional Collaboration Centers (global network)

UN Climate Change secretariat has a network of 6 regional collaboration centers, which facilitate the work of the secretariat in engagement, convening and implementation of mandates

Most RCCs house NDC-Partnership and GCF regional experts

NDC
PARTNERSHIP



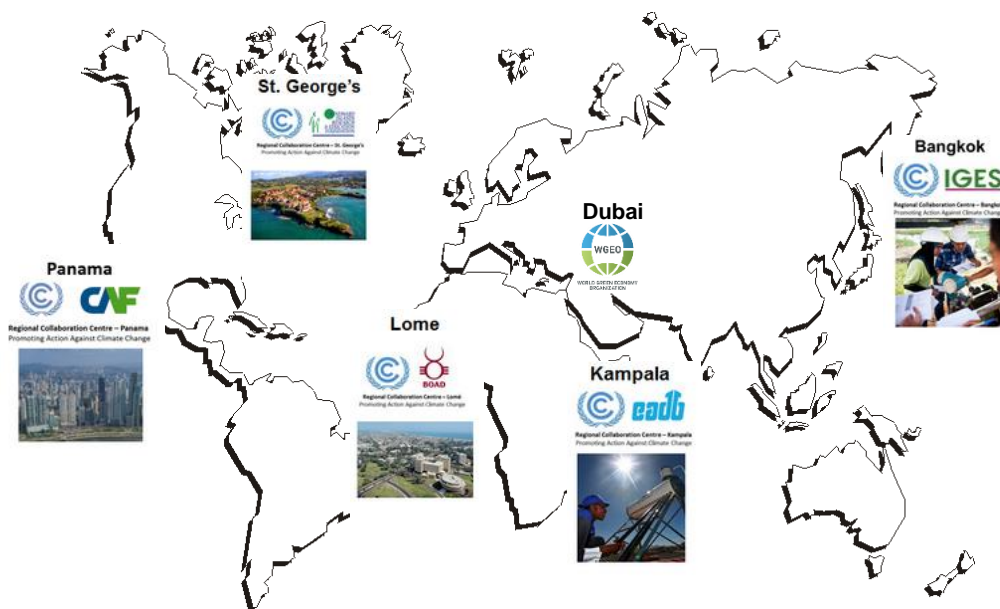
In-depth country engagement in 40+ countries

36 Partnership Plans developed

Building and consolidating institutional/legal/policy frameworks for NDCs

Mobilizing partners for collective impact and ensuring speed of delivery

Engaging Ministries of Finance to dedicate funds and align budgets to turn plans into action



UNFCCC/IGES Regional Collaboration Centre for Asia and the Pacific (RCC Bangkok)



Location: Bangkok, Thailand

Establishment Date: 1 September, 2015

Host Organization: Institute for Global Environmental Strategies

Geographical Scope: North East Asia, South East Asia, South Asia, the Pacific, and Eurasia



- Set up to spread the benefits of the Clean Development Mechanism (CDM), to **help under-represented regions** increase their attractiveness and potential for CDM, by **building their capacity** and reducing the risk for investors.
- **Support** the identification of CDM projects, provide assistance for the design of such projects, address issues identified by validators, and offer opportunities to reduce transaction costs.
- **Broader role since Paris** – facilitating support for climate action towards the implementation of countries' NDCs under that agreement, with focus on markets and mechanisms.



RCC Bangkok – Areas of work

Facilitate the implementation of the Paris Agreement in the areas of **Adaptation, Transparency, Finance, Technology and Capacity-building**, as well as, supporting the development and effective implementation of innovative market-based approaches building on the lessons learnt from the CDM to broaden the engagement in and effectiveness of action to mitigate climate change and drive sustainable development.

NDC process: Provide assistance to the NDC process

- Support NDC further elaboration for achieving revised, more specific and more ambitious NDCs (support to NDC expansion to new scopes, increased clarity, including on means of implementation, better quantification and increased streamlining)
- Mobilize technical assistance from current and potential partners (e.g. NDC-Partnership)
- Provide technical support for implementing and achieving NDCs

Technology

- Support dissemination the communication products of the TEC and the Technology team at a regional and national level
- Support the organization of regional event, including communication and identification of relevant case studies and speakers from the respective regions.



Needs Based Finance Project

- In accordance with COP 23 mandate on long term finance, the RCCs are supporting implementation of the Needs-based Finance Project (NBF) in 10 regions and sub-regions, covering 92 countries.
- UNFCCC together with RCCs Bangkok launched the NBF projects
 - *Melanesia (Melanesia Spearhead Group countries)*
 - *ASEAN Member States,*
 - *Island States in the Indian Ocean,*
 - *Least Developed Countries in Asia,*
 - *Polynesia*
 - *and Central and South Asia*to analyze country situation, develop strategy and mobilize finance for their NDCs and NAPs.



UNFCCC Needs-based Finance Project (NBF)

“Explore ways and means to assist developing country Parties in assessing their needs and priorities, in a country-driven manner, including technological and capacity-building needs, and in translating climate finance needs into action. In collaboration with the operating entities of the Financial Mechanism, United Nations agencies and bilateral, regional or multilateral channels

COP 23: Long-term climate finance, 6/CP.23, paragraph 10

Phase I

Initial engagement



Stakeholder mapping for each partner country



Development of engagement strategy



Coordination and collaboration with relevant processes under the Convention and with external partners

Phase II

Technical Work



Support the enhancement and/or development of customized tools



Inter-agency and multi-stakeholder engagement at the country level



Organization of in-country technical workshops for climate finance strategy development

Phase III

Support to resource mobilization



Facilitate the connection between support providers and countries, e.g. through conducting a series of outreach activities



Production of outreach materials, such as brochures, fact sheets or videos, including country-specific materials

Phase IV

Assessment/ Evaluation



Evaluation of project activities and outcomes



Facilitating exchange of experiences amongst partner countries



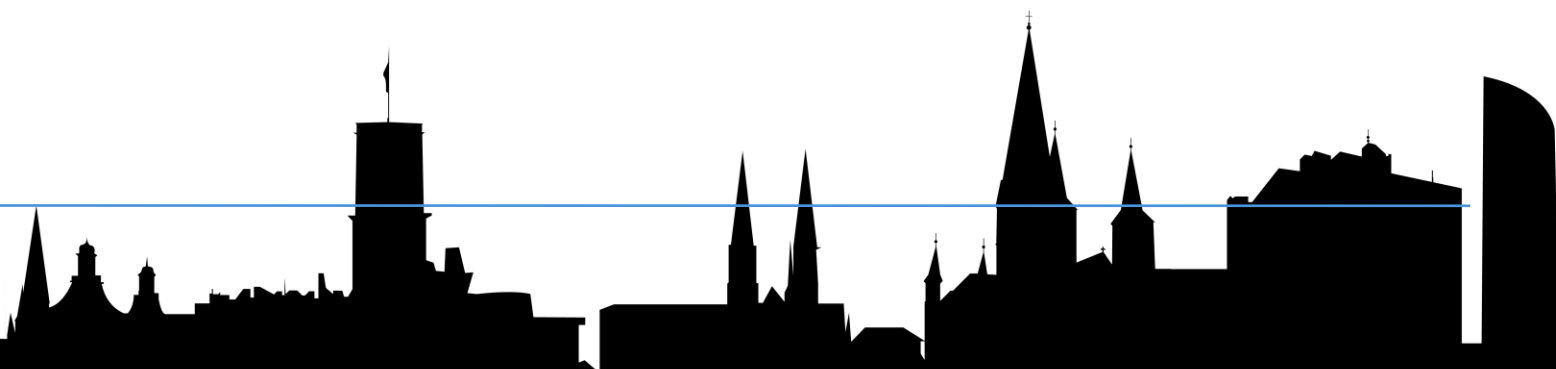
Exploring replicability of approach to other countries

Presentation of project outcomes, success stories and lessons learned at COP25



Technology Needs Assessment for ISIO countries

- In the technical assessment conducted for the six **island states in the Indian Ocean (ISIO)** under the Needs-based Finance (NBF) project, TNAs and TAPs were assessed to derive the priority technology needs for the ISIO countries.
- **Five of six ISIO countries have conducted the technology needs assessment process** (Comoros, Madagascar, Maldives (no TNA), Mauritius, Seychelles and Sri Lanka). Of these, four have additionally prepared a technology action plan, which has details on the estimated costs and timelines for the priority technology related actions determined in the TNAs.
- The TNAs were a very useful tool to support the assessment of country needs in terms of technology partly due to the **consistency in methodology and format of the reports across countries** thereby making it easier to compare the priority technology sectors and activities that were common across countries and also to better understand related costs and timelines.
- The TNAs, because they propose activities and projects under the priority mitigation and adaptation sectors can also be a useful **starting point to developing regional project pipelines**.

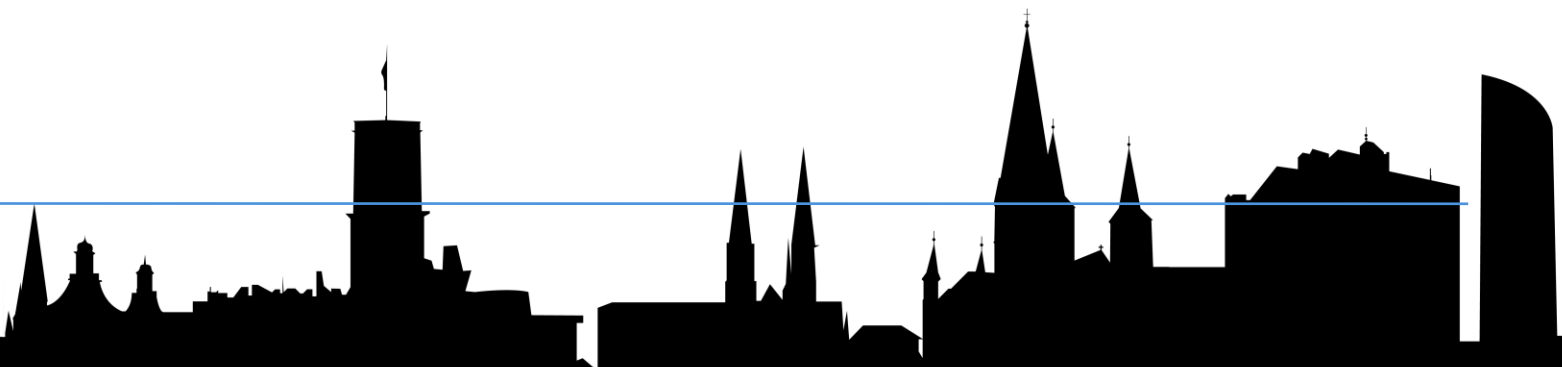


Technology Needs Assessment for ISIO countries

- It can be observed that the sectors for technology needs in common among the ISIO countries are:
 - Energy
 - Water
 - Coastal zones

- Under these sectors the following technology needs are prioritised and are common across a number of countries:
 - Renewable energy technologies
 - Sustainable transport
 - Desalination techniques, rainwater harvesting and groundwater recharging
 - Land elevation, shore protection and reclamation, restoring coastal vegetation, wetland protection, dune restoration, rock revetment

- In addition to these sectors, technology transfer requirements related to the **systematic observation and monitoring** of climate change and impacts through the establishment of **MRV and M&E systems and technology hubs** have been identified by the majority of countries.



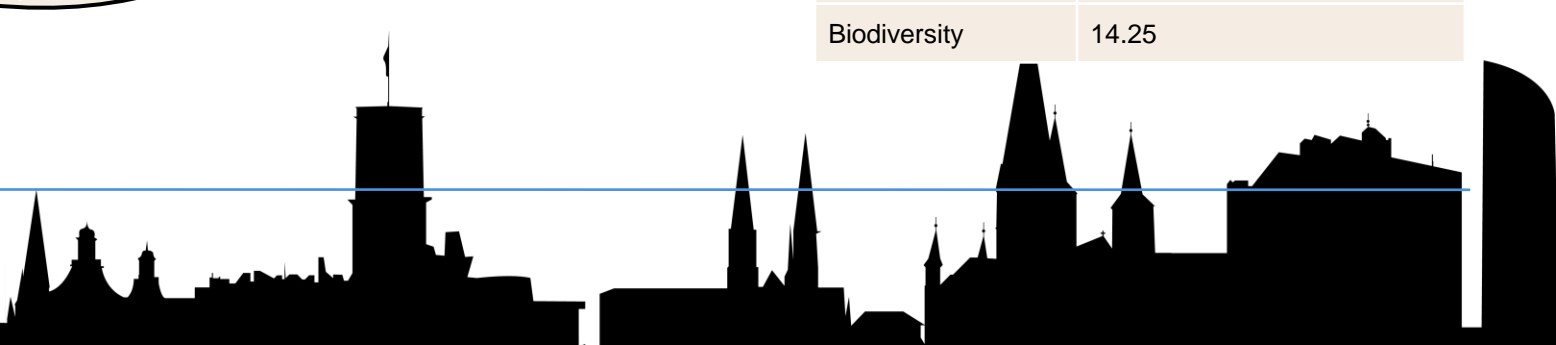
ISIO countries' prioritised sectors for mitigation and adaptation technology, associated actions and estimated costs for each action

Table: ISIO countries' prioritised sectors for mitigation and adaptation technology, associated actions and estimated costs for each action

Adaptation				
Mitigation				
Country	Mitigation Technology	Mitigation Action and timeframe where available	Mitigation technology costing (USD Million)	Totals (USD Million)
Comoros	Energy	Hydroelectricity	15	32
		Improvement of electricity network	14.6	
		Biomass	2.4	
Madagascar	Energy	Large hydropower plant (3 years starting from 2018)	2.09	...
		
	Industry	...		

Table: Compilation of technology costs by sector, from TAPs of the ISIO countries

Mitigation priority technology - sectors	
Sector	Estimated cost of technology (USD million)
Energy	1932.49
Industry	12.5
Transport	88.8
Adaptation priority technology - sectors	
MRV	1.02
Water	397.732
Infrastructure	56.22
Food security (agriculture, irrigation, fisheries)	176.05
Coastal Zones	36.928
Health	0.5
Biodiversity	14.25



ASEAN community Climate Finance Mobilization and Access Strategy

Technical Assessment of Climate Finance in the ASEAN community

- Sources of data and information include UNFCCC reports, Multilateral Development Banks MDB country strategies as well as regional, sub-regional and national country strategies by theme and/or by sector.
- UNFCCC reports include Nationally Determined Contributions (NDCs), **Technology Needs Assessment (TNAs)**, National Adaptation Plans (NAPs), National Adaptation Programmes of Action (NAPAs), Biennial Update Report (BURs), National Communication Submissions (NCs) as well as country programmes of funds and MDBs

Priority technology

- Technology Needs Assessments (TNAs) and Technology Action Plans (TAPs), in addition to BURs and NCs, were assessed to derive the priority technology needs for the ASEAN countries.
- **Six of ten ASEAN countries** have conducted technology needs assessment processes.

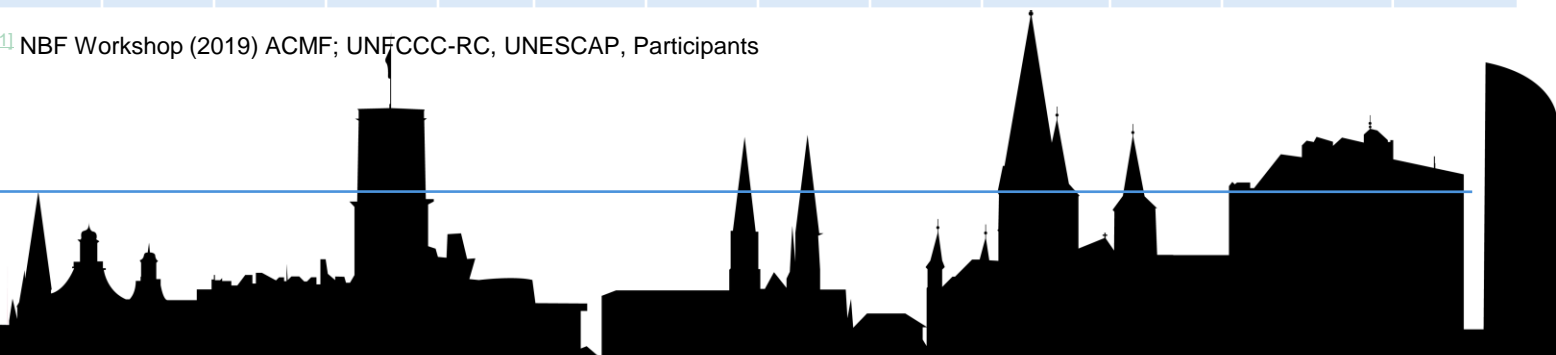


Methodological approach for determination of needs

The priority needs have been gathered from national plans and priorities, and further sustained with information from participants at the NBF workshop¹. Summary of ASEAN communications to the UNFCCC

Country	BUR 1	BUR 2	BUR 3	(I)NDC 1	NAPA	NC1	NC2	NC3	NC4	TNA 1	TNA 2	TNA Barrier analysis & enabling framework	GCF Country Program mes
Brunei Darussalam				2016		2016	2017						
Cambodia				2017	2007	2002	2016			2003	2013		
Indonesia		2018		2016		1999	2011	2017		2010	2012		2018
Lao PDR				2016	2009	2000	2013			2004	2013	2017	2019
Malaysia	2015	2018		2016		2000	2011	2018					
Myanmar				2017	2013	2012							
Philippines				2015		2000	2014			2004	2018		
Singapore	2014	2016	2018	2016		2000	2010	2014	2018				
Thailand	2015	2017		2016		2000	2011	2018		2000	2012		2017
Viet Nam	2014	2017		2016		2003	2010	2019		2005	2012		

^[1] NBF Workshop (2019) ACMF; UNFCCC-RC, UNESCAP, Participants



Asia Pacific Climate Week 2020 – postponed to 2021 – Dated to be announced

Every year the RCWs are held in the following regions: Africa, Latin-America and Caribbean, and Asia-Pacific. As of 2020, a RCWs was also to be convened in the Middle East and Northern African region.

Regional Climate Weeks 2020 - Postponed to 2021 (originally planned Asia-Pacific Climate Week 2020 (APCW2020), Yokohama – Japan)

There are several ways organizations can get involved in and be part of the regional climate weeks. **Side events, Action Hub, Exhibition booths, Knowledge Corner**



United Nations
Climate Change



Empowered lives.
Resilient nations.



Opportunities for RCC Bangkok

future support the work of countries or facilitate the support by the UNFCCC Technology team

- ASEAN Working Group on Climate Change AWGCC Action Plan
 - Workstream Technology Transfer
 - ❑ Enhanced partnership with private sector: Promote dialogue with private sector to explore collaboration on climate change R&D and technology transfer through various platforms.
- CDM / Art. 6 of Paris Agreement (Collaborative Action)
 - On demand basis (based on the needs of the region), identify the potential to develop new methodologies¹ for application by non-state actors and possibly under existing/new market mechanisms
- NAMA development (e.g. standardize baseline development)

¹Baseline and monitoring methodologies for mitigation projects

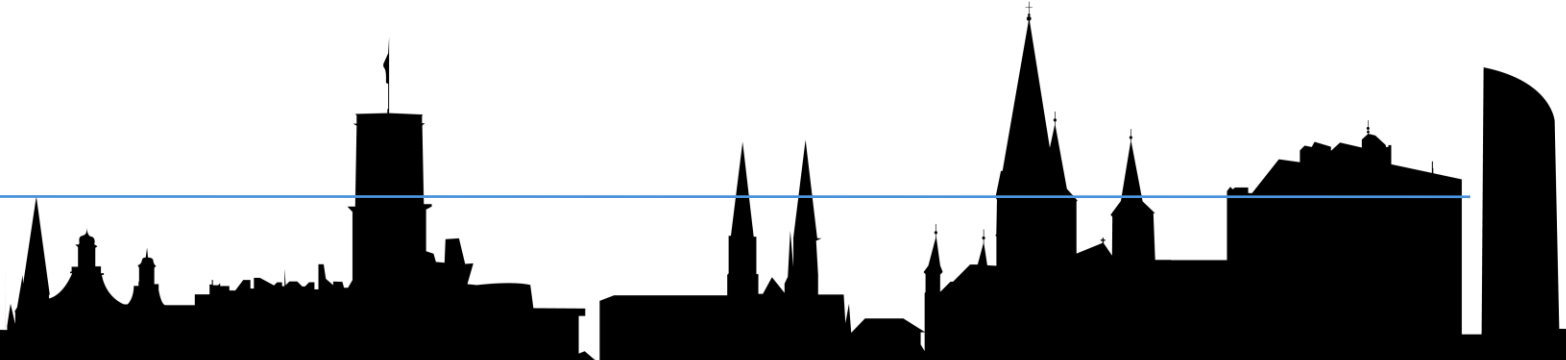


Opportunities for RCC Bangkok

- NDC implementation
 - NDC updates, NDC implementation (through NDC Partnership)
 - Promote use of TNA during the development of country requests (NDC-Partnership country engagements)

- Stakeholder engagement, enhancing collaboration, capacity building
 - e.g. lack of good project funding proposals
 - Consideration of TNA prioritized technology options in proposals submitted to the GCF and other relevant institutions
 - Tracking of implementation of TNA results
 - Private sector engagement

- Climate weeks (i.e. AP climate week); organize sessions, engage stakeholder



United Nations Framework Convention on Climate Change



THANK
YOU



Email address: RCCBangkok@unfccc.int

Skype: RCC.Bangkok

Office address:

IGES Regional Centre

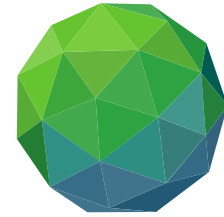
604 SG Tower 6th Floor, 161/1 Soi Mahadlek Luang 3;
Rajdamri Road, Patumwan, Bangkok, 10330, Thailand



Mr. Jens Radschinski

Lead of the Regional Collaboration Centre for Asia and the Pacific (Bangkok)

GCF Support to Climate Technologies and Technology Needs Assessment Activities in Asia Pacific



GREEN
CLIMATE
FUND

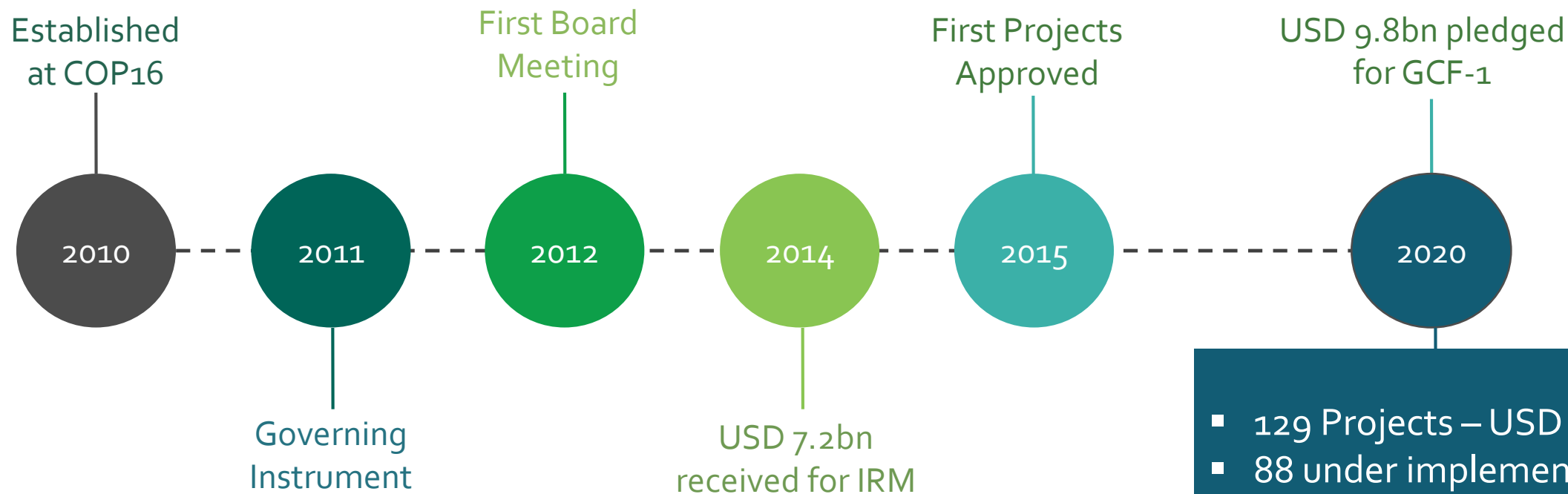
Emerson Resende | Climate Policy Specialist

TNA Webinar, 16 June 2020

A QUICK HISTORY

A QUICK HISTORY

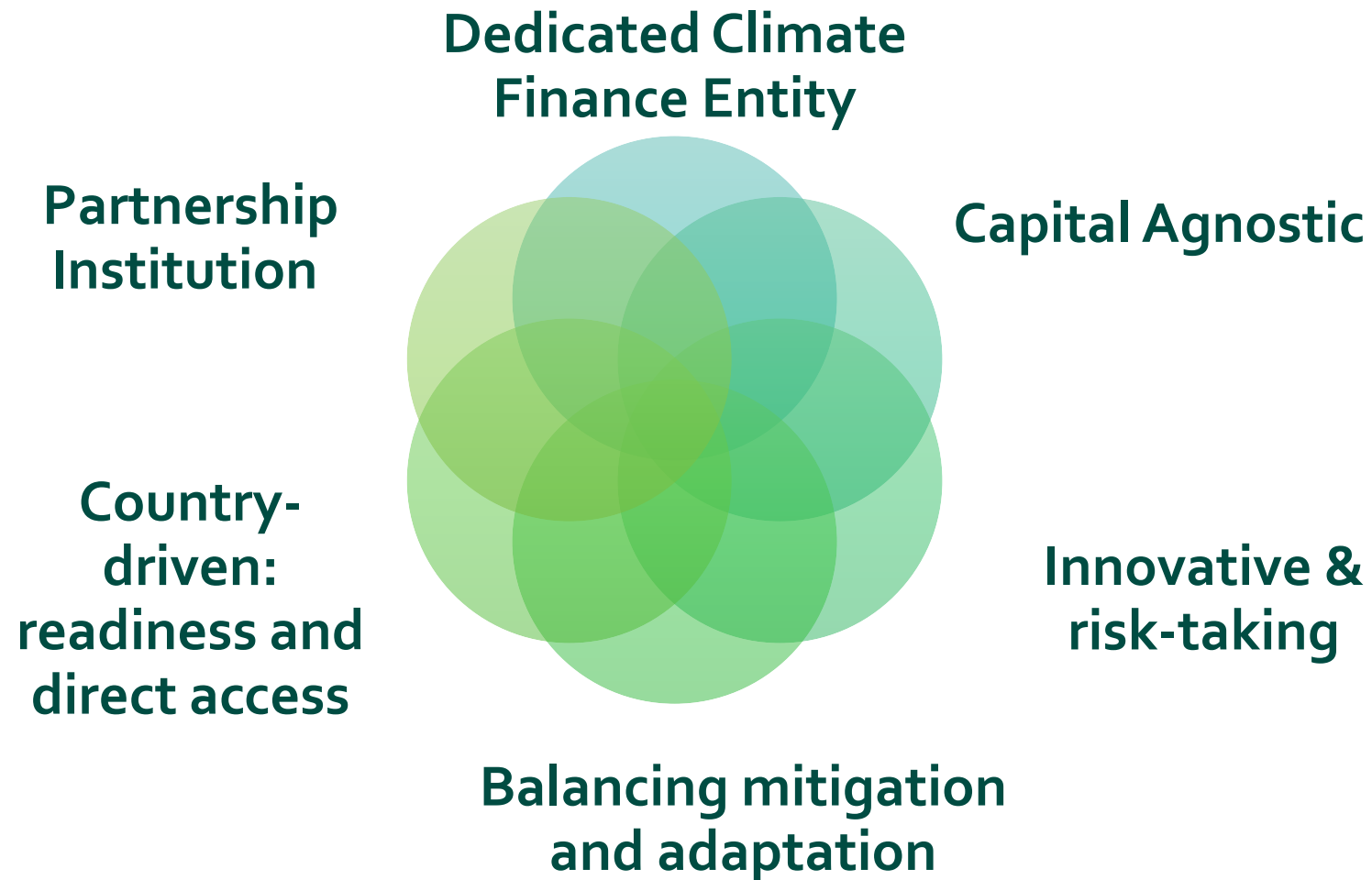
(As of 15 March 2020)



An operating entity of the UNFCCC financial mechanism fostering a **paradigm shift** to low-emission and climate-resilient development pathways in developing countries

- 129 Projects – USD 5.6bn
- 88 under implementation
- 95 Accredited Entities
- 108 countries reached

COLLABORATIVE ADVANTAGES



IMPACT AREAS

GCF makes investments within **8 strategic result areas**, in line with country priorities.

Reduced Emissions From:



Energy
generation
and access



Transport



Buildings, cities,
industries and
appliances



Forests and
land use

Increased Resilience of:



Livelihoods of
people and
communities



Health, food
and water
security



Infrastructure
and the built
environment

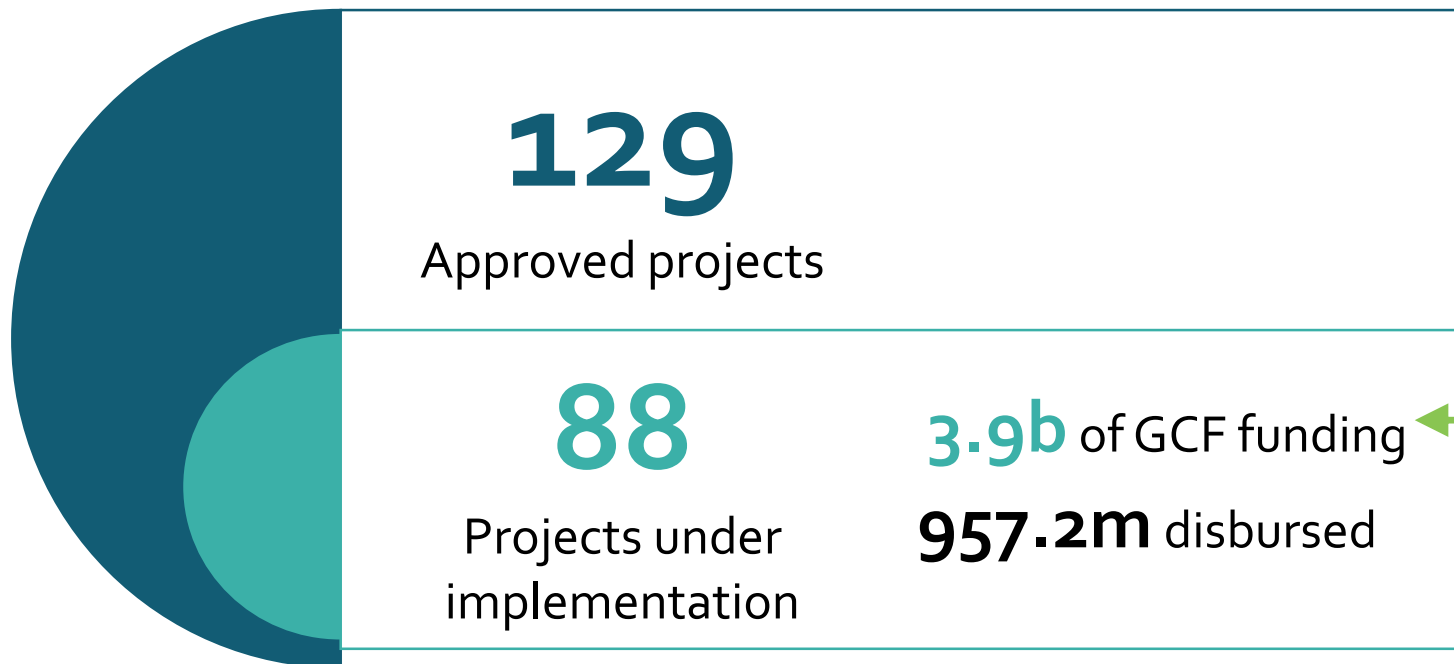


Ecosystems and
ecosystem
services

STATUS OF THE PORTFOLIO

STATUS OF THE PORTFOLIO

(As of March 15, 2020)



3.9b of GCF funding
957.2m disbursed

VALUE OF PROJECTS IN BILLION USD

■ Co-Financing ■ GCF funding approved

Total: 20.0

5.6

14.4

Under implementation

GCF commitment: 5.6b

\$ 3.9 billion

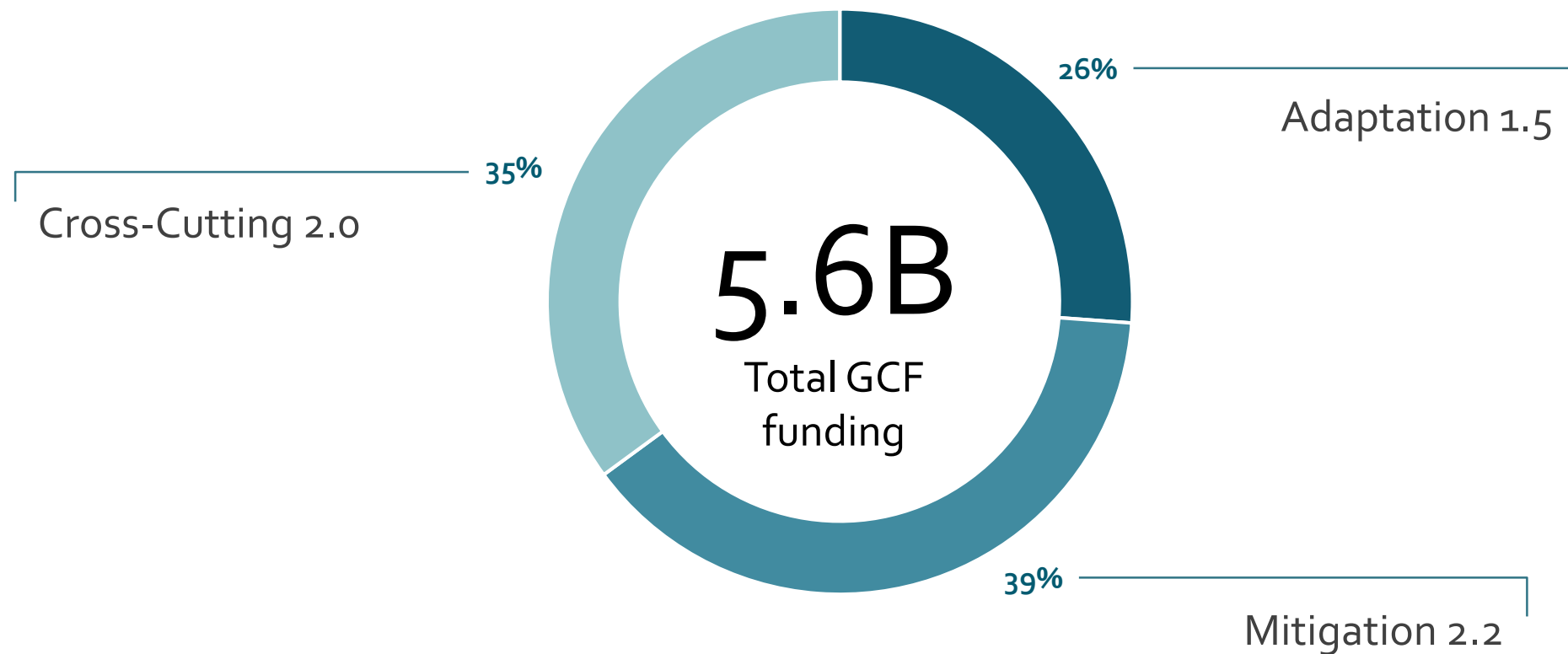
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

STATUS OF THE PORTFOLIO

(As of March 15, 2020)



APPROVED PROJECTS VALUE BY THEME (billion USD)

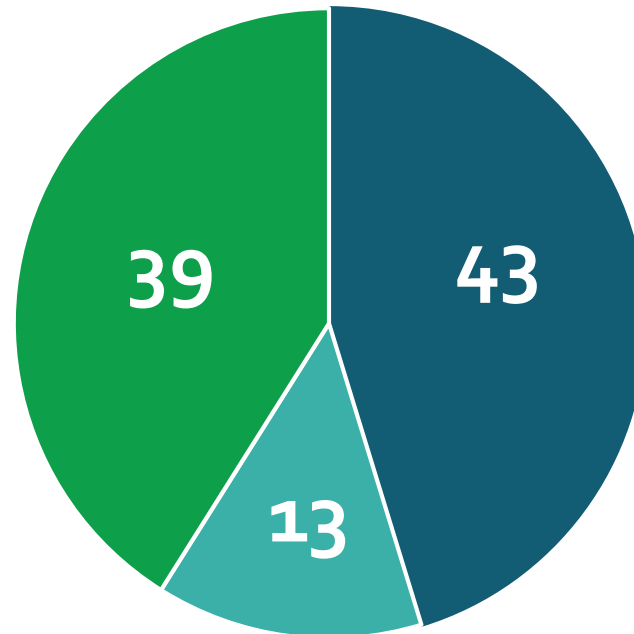


STATUS OF THE PORTFOLIO

(As of March 15, 2020)



Total: **95** Accredited Entities



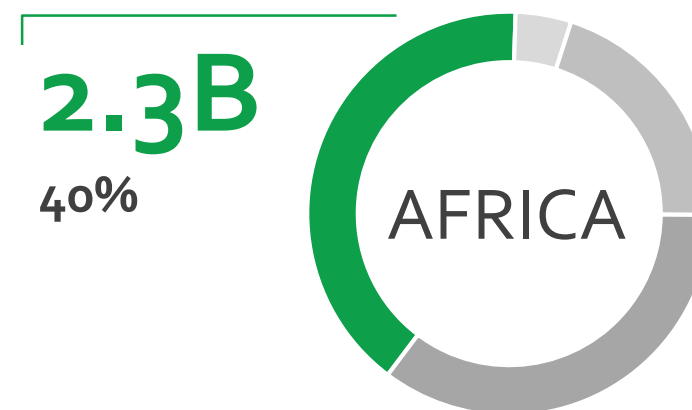
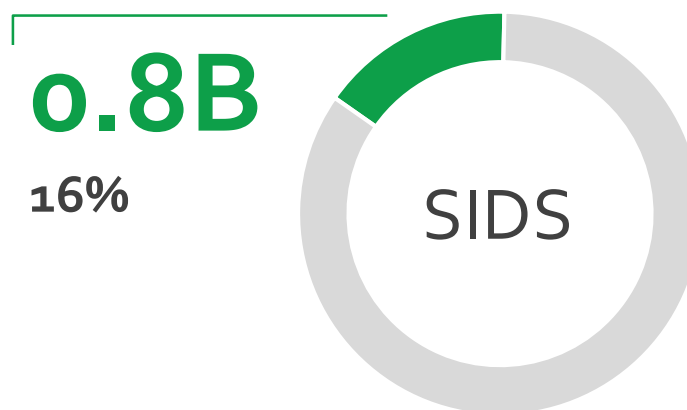
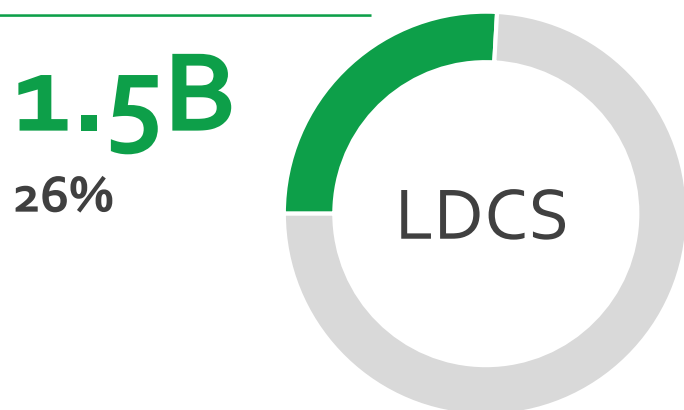
■ Direct Access (National)

■ Direct Access (Regional)

■ International Access

STATUS OF THE PORTFOLIO

(As of March 15, 2020)



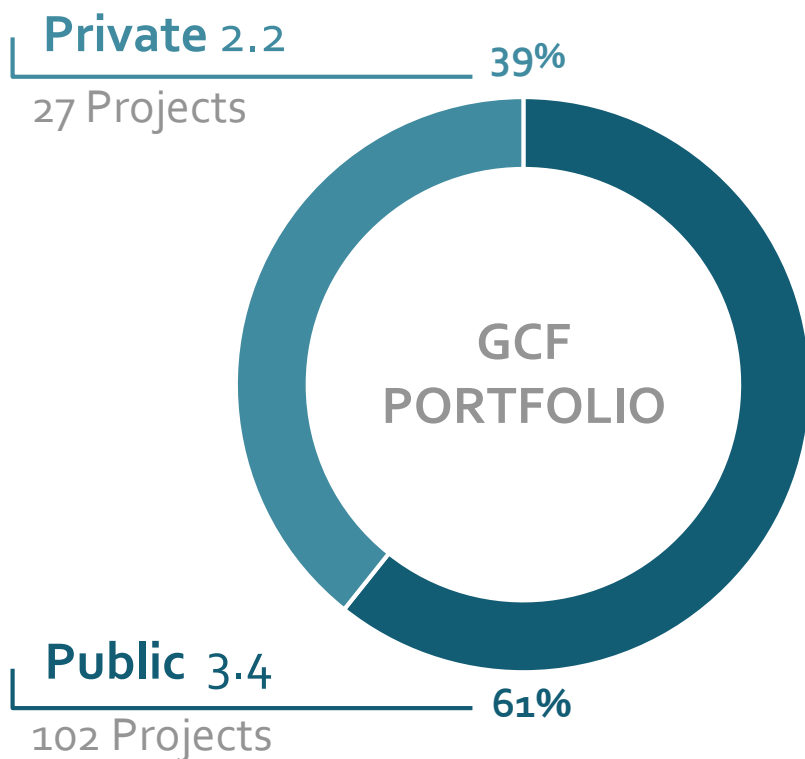
LDCS, SIDS, Africa
(adaptation only)



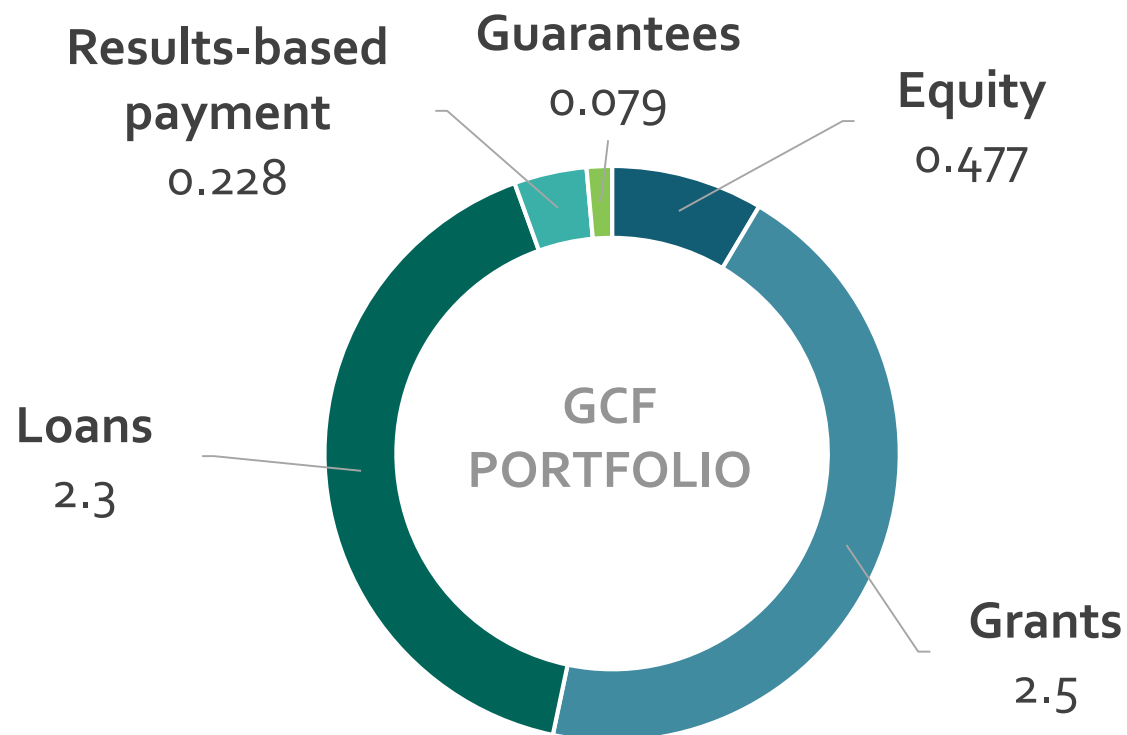
FUNDING AMOUNT

(As of March 15, 2020)

BY SECTOR (billion USD)

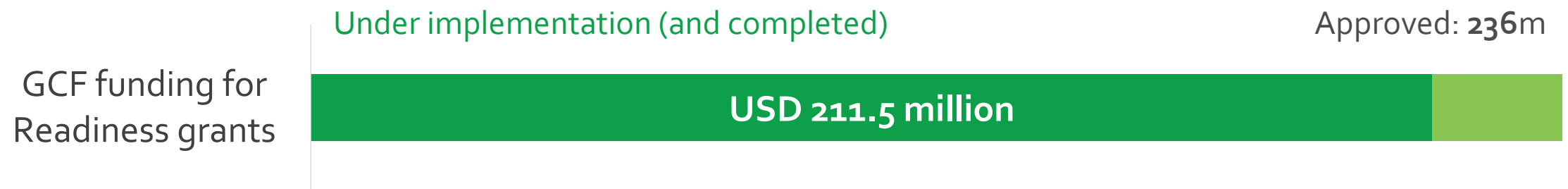


BY FINANCIAL INSTRUMENTS (billion USD)



READINESS AND PREPARATORY SUPPORT PROGRAMME (READINESS)

(As of March 15, 2020)

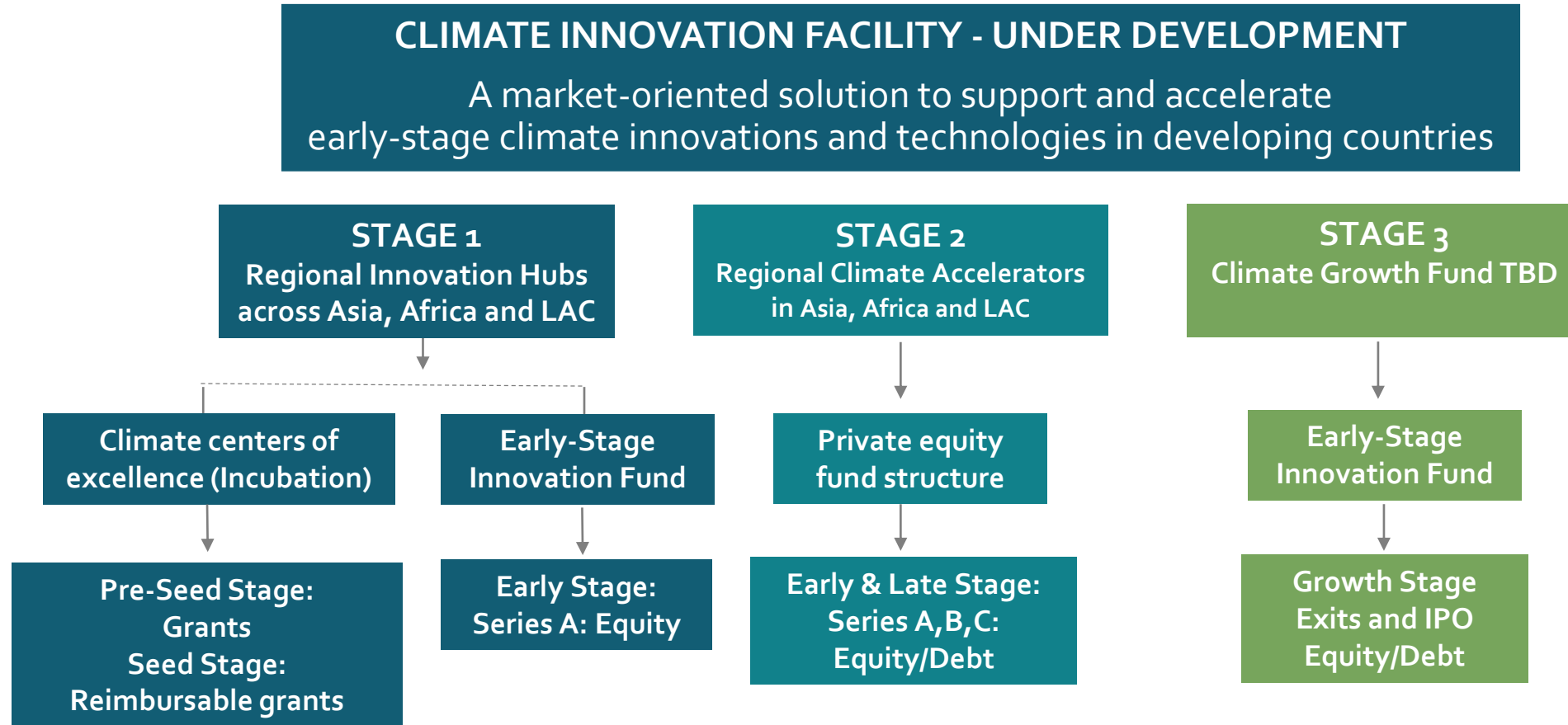
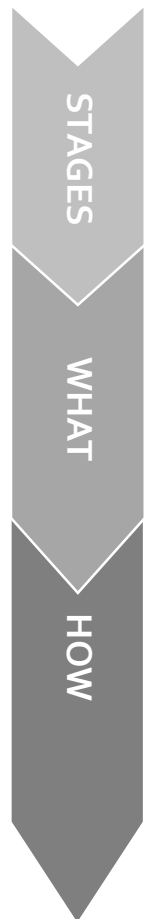


138

countries targeted

SUPPORT TO CLIMATE TECHNOLOGIES

INCUBATORS AND ACCELERATORS



READINESS SUPPORT FOR TECHNOLOGY



Readiness

24

approved

Regions	15 Africa	7 Asia-Pacific	2 LAC
Delivery Partners	14 UNEP-CTCN	9 UNIDO-CTCN	1 UNEP
Type of Support	Energy Efficiency Appliances and Equipment	TNA's support	Others

USD

\$8

MM

LATEST GCF APPROVED SUPPORT FOR TNAs_s ASIA-PACIFIC



SYRIAN ARAB REPUBLIC

Categorization & prioritization of mitigation and adaptation technologies to comply with NDC

Approved
\$398,274

Duration
Jan 2020 - June 2021

CAMBODIA

Support of climate-friendly technology implementation in Cambodia's special economic zones

Approved
\$238,049

Duration
Jan 2020 - June 2021

IRAQ

Categorization & prioritization of mitigation and adaptation technologies to comply with NDC

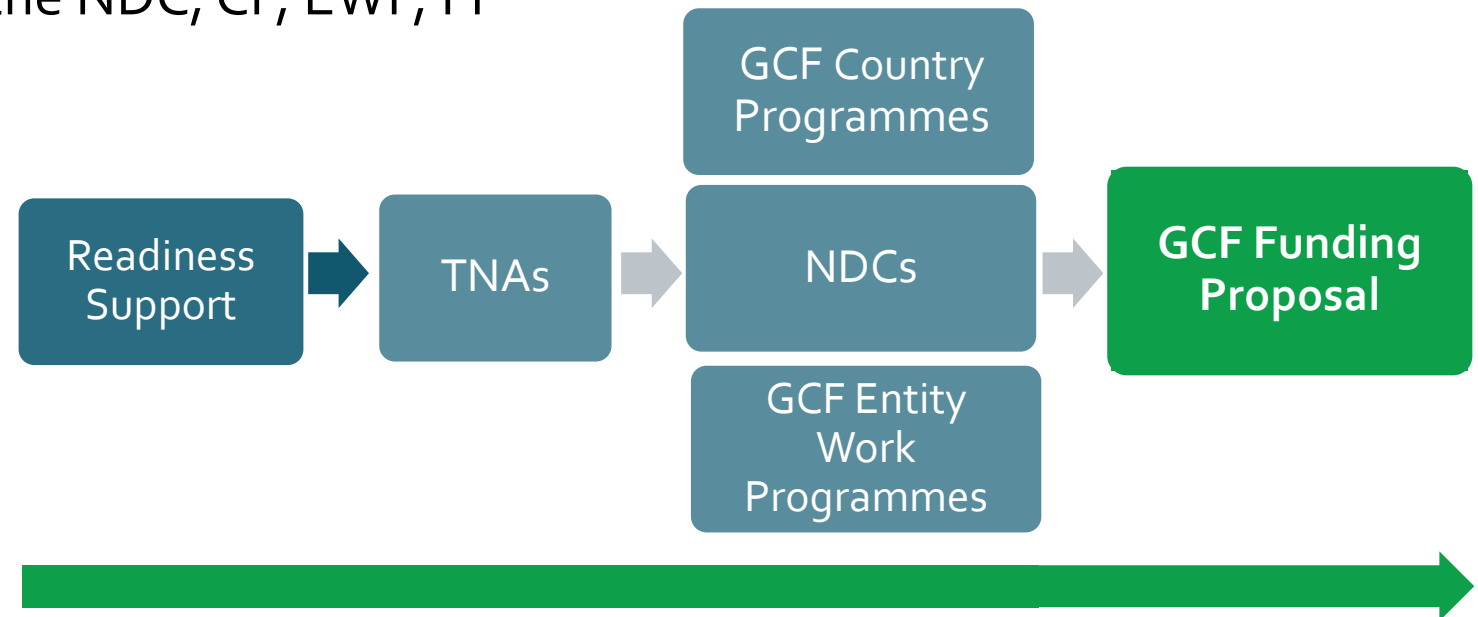
Approved
\$373,520

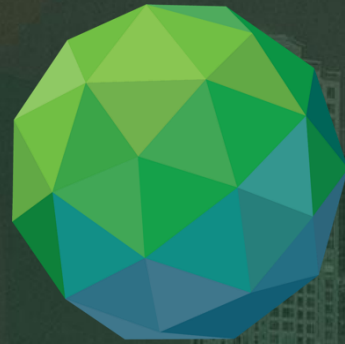
Duration
Nov 2019 – May 2021

CONCLUSIONS



- Coordination TNA Coordinator, NDE, NDA
- Ambition and transformative technologies
- Long-term vision and linkage with the NDC, CP, EWP, FP





GREEN CLIMATE FUND

Mr. Emerson Resende
Climate Policy Specialist
Office of Governance Affairs
eresende@gcfund.org

Climate Technologies and Technology Needs Assessments activities in Asia-Pacific

Q&A session

**Do you have any question?
Feel free to ask!**

Climate Technologies and Technology Needs Assessments activities in Asia-Pacific

More information about the TNA: www.tech-action.org/ and <https://unfccc.int/ttclear/tna>

The webinar has been recorded and will be available on the TNA website in the coming days.

If you have any question on TNAs in Asia Pacific, please contact Subash Dhar sudh@dtu.dk

If you have any other question for TNAs, please contact Global TNA Project Manager Sara Trærup slmt@dtu.dk