Green Technolgoy Field Application for Coping with Climate Change Issues

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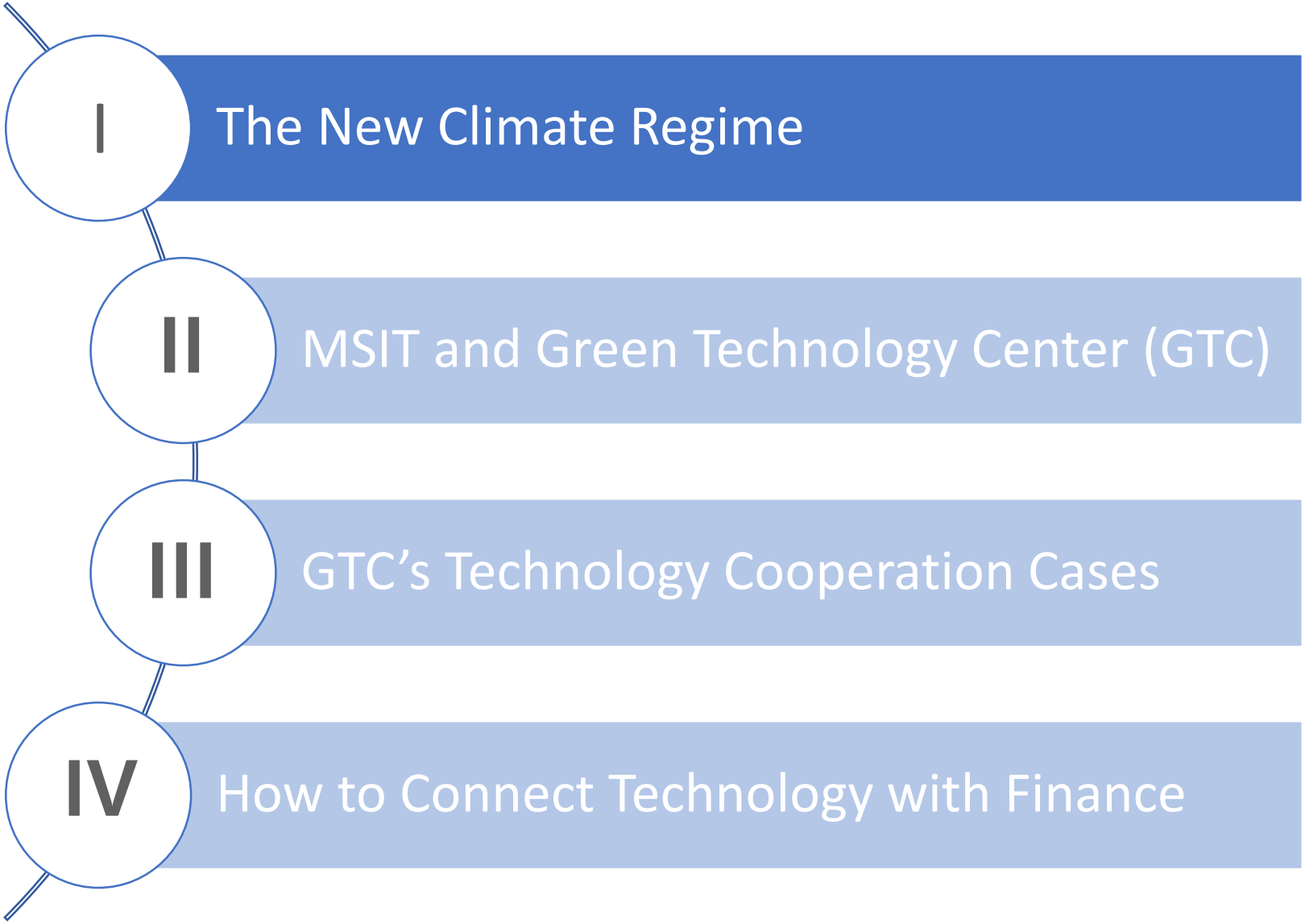
Dr. SHIN, Kyung-Nam, J.D. esq.

Director
Center for Climate Technology Cooperation
Green Technology Center-Korea

미래창조과학부
Ministry of Science, ICT and Future Planning

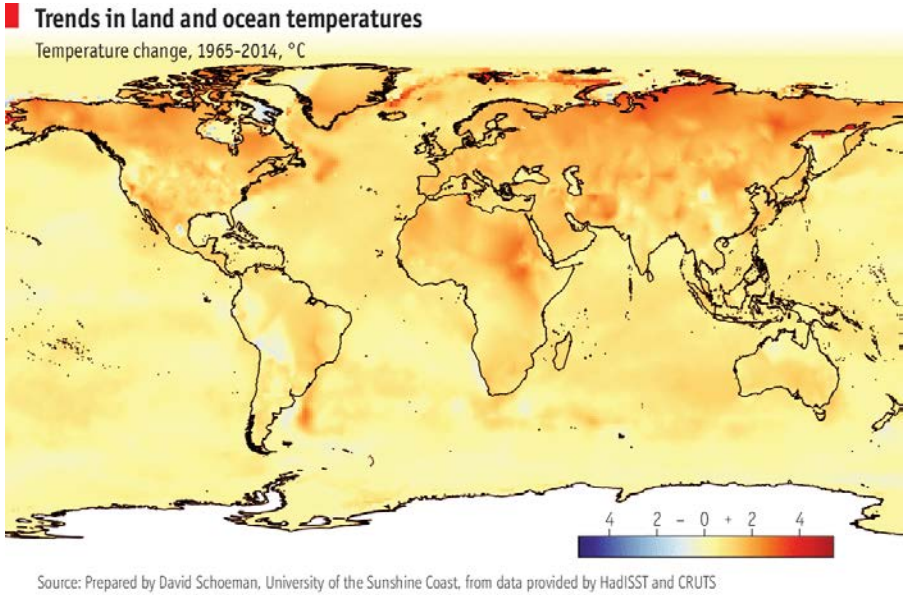
GREEN TECHNOLOGY CENTER
녹색기술센터

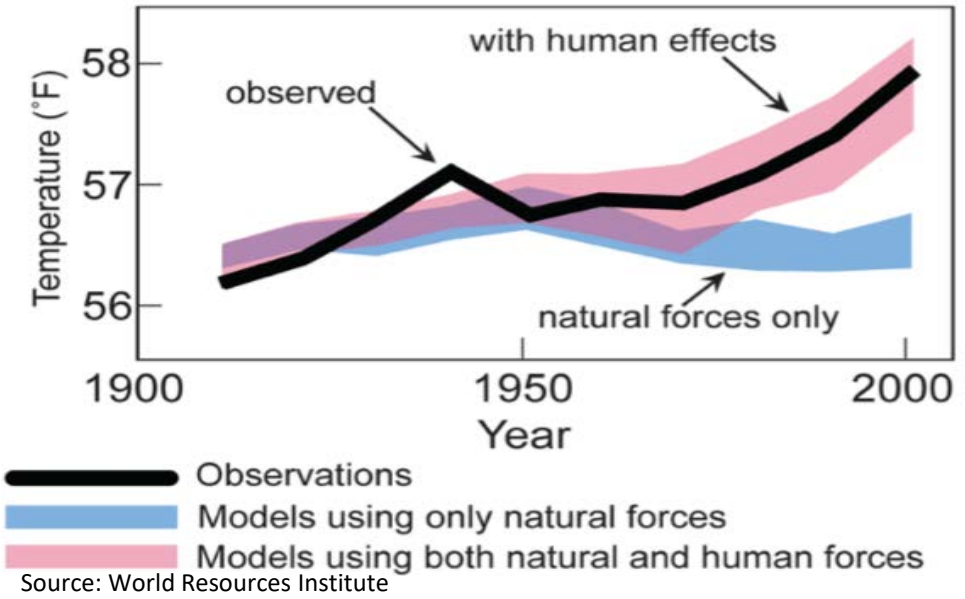
Agenda


I
The New Climate Regime
II
MSIT and Green Technology Center (GTC)
III
GTC’s Technology Cooperation Cases
IV
How to Connect Technology with Finance

Global Threat of Climate Change

It's happening, "extremely likely" human driven, causing extreme weather and will worsen without action





Source: World Resources Institute

- Average surface temperatures up 1˚C on pre-industrial levels in 2015

- Heat waves, extreme precipitation
- Ocean warming and acidification
- Global mean sea level rise

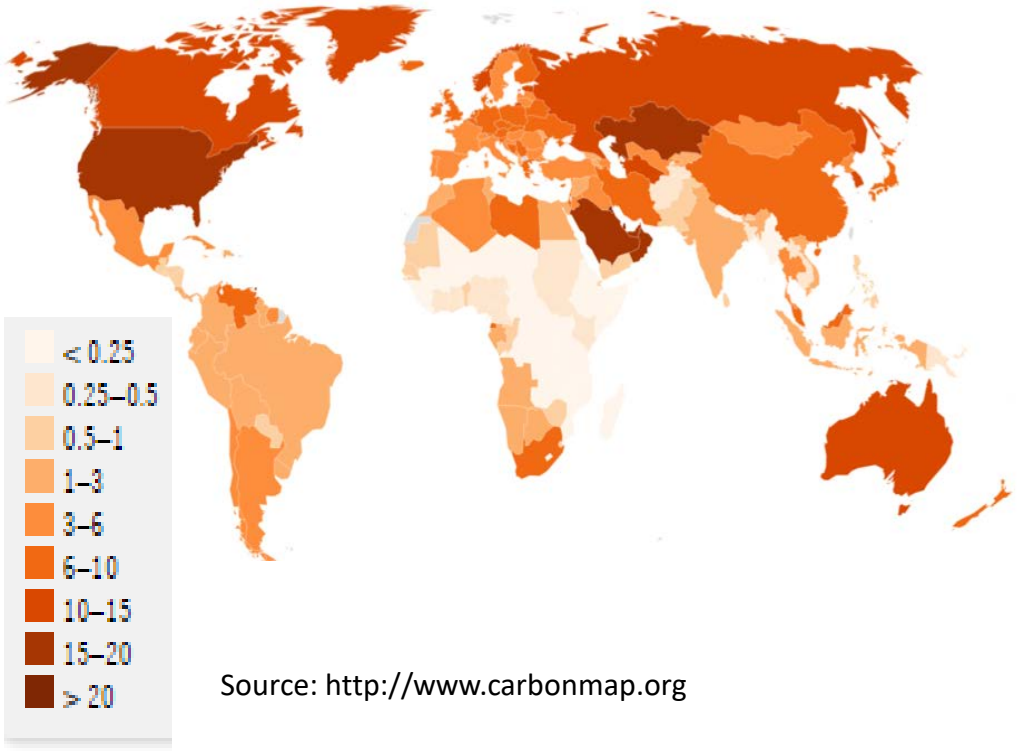
- Worst in developing countries
- Effects will continue for centuries

- Mass migration and security crises

Countries CO_2 Emissions and Climate Vulnerability

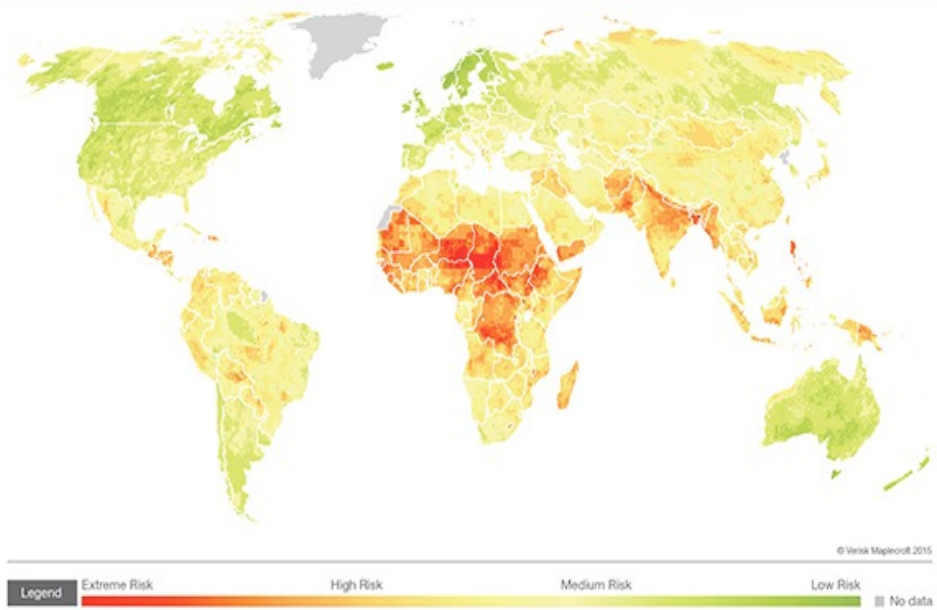
As well as cutting emissions, developed countries have “historic responsibility” to assist climate change vulnerable developing countries

CO_2 per person from energy and cement 2013 (tonnes)



Source: http://www.carbonmap.org

Climate change vulnerability index 2015



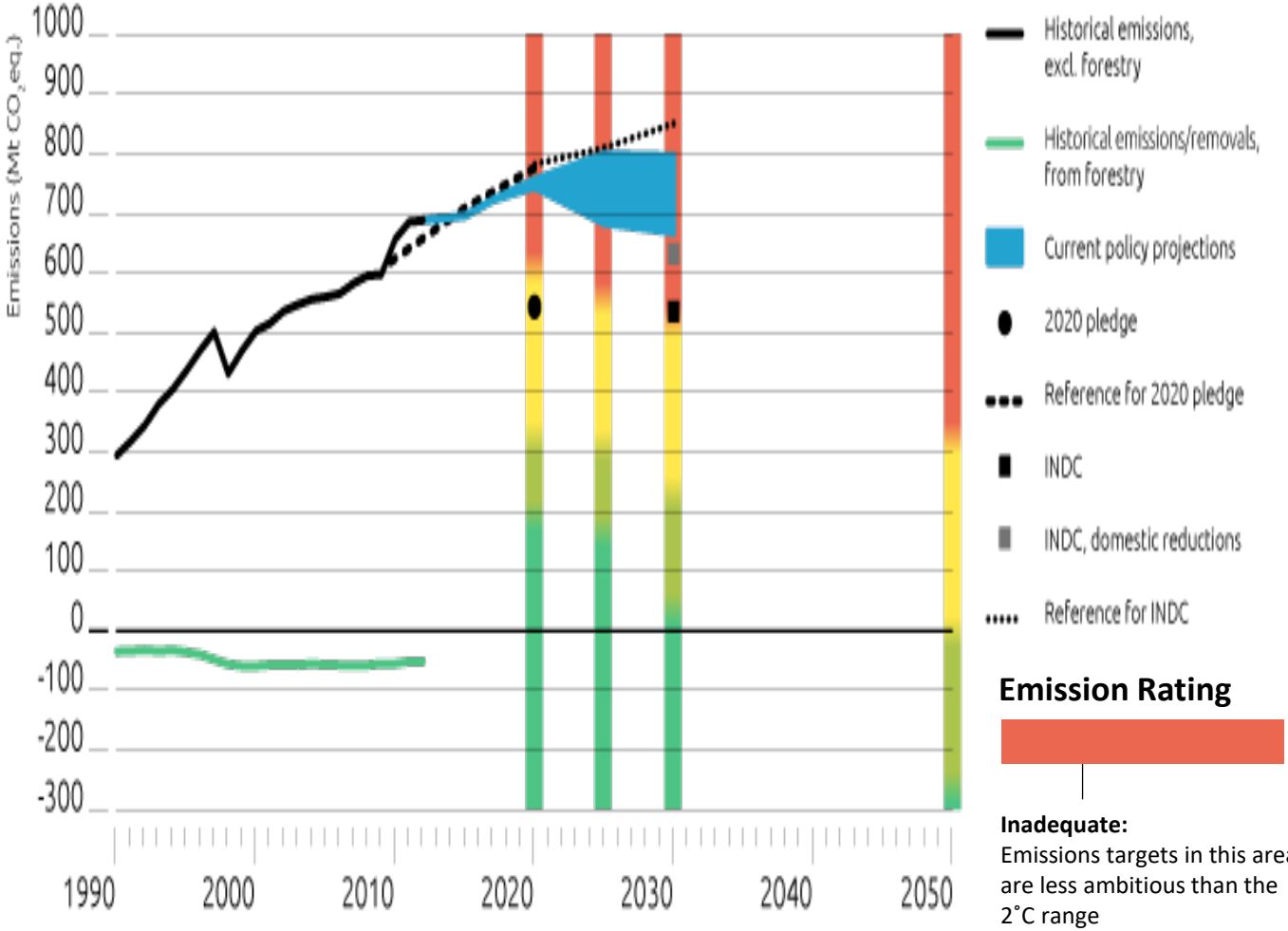
Source: Verisk Maplecroft

Korea's Green House Gas Reduction Efforts

Korea's Nationally Determined Contribution to the UNFCCC (June 30, 2015)

TARGET: GHG emission reduction: 37% from BAU level by 2030

- Domestic reduction: 25.7%
- Reduction via international markets: 11.3%



Korea's GHG Reduction Target	
Year	BAU ($MtCO_2eq$)
2020	782.5
2025	809.7
2030	850.6

Emission Rating

Inadequate: Emissions targets in this area are less ambitious than the 2˚C range

Medium: Not consistent with limiting warming below 2 ˚C

Sufficient: Fully consistent with below 2 ˚C limit

Role Model: More than consistent with below 2 ˚C limit

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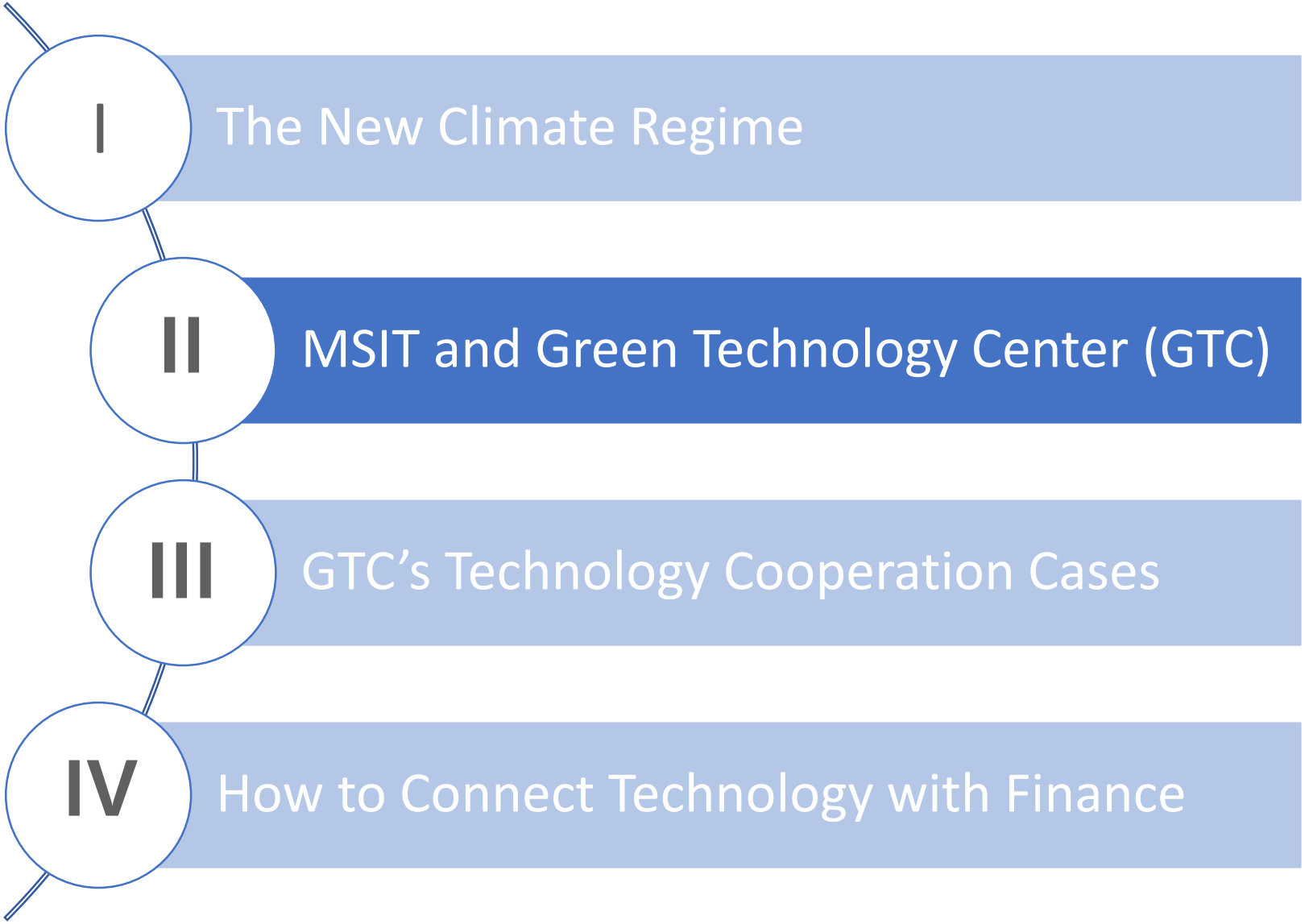
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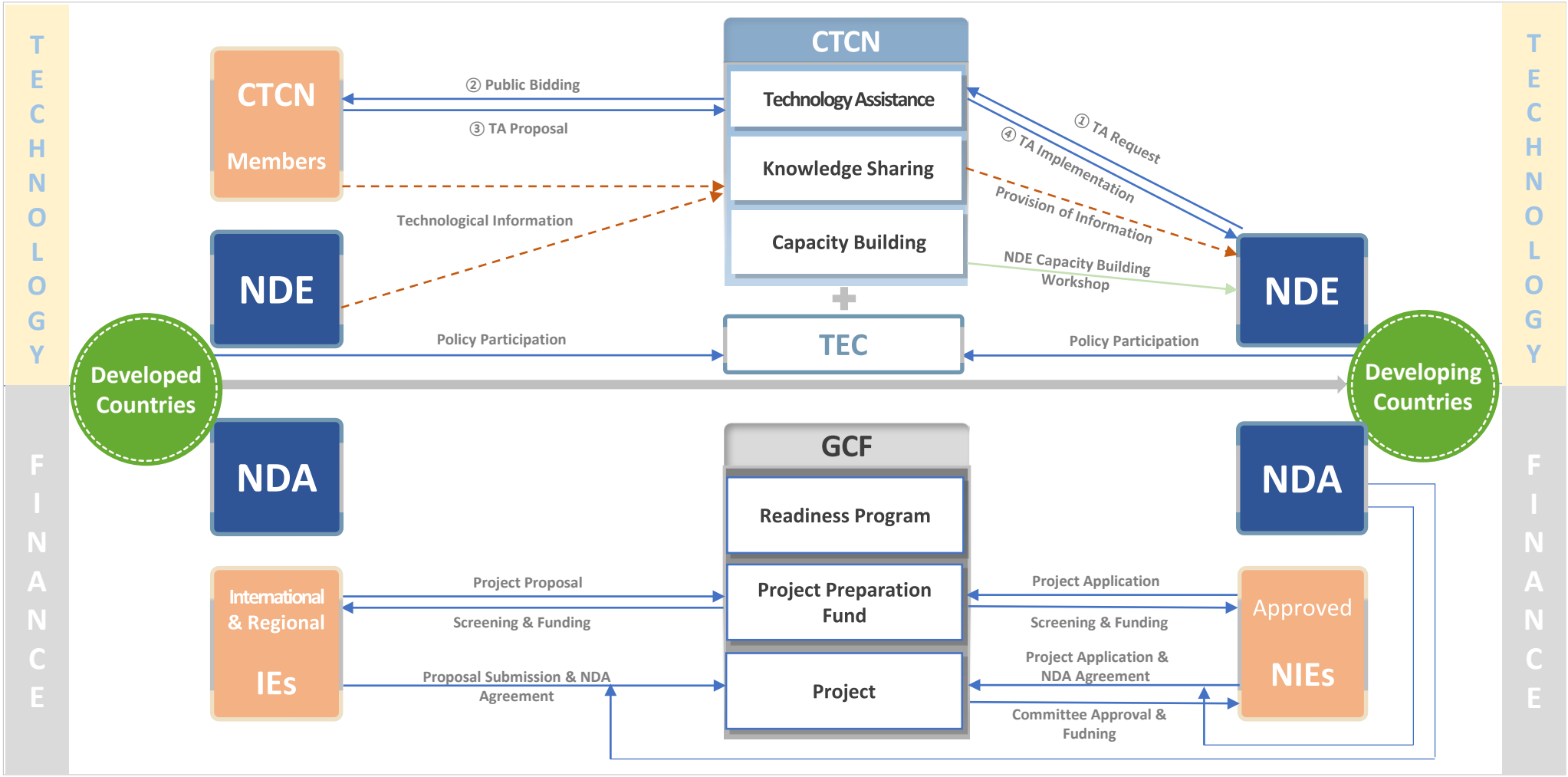
Technology Transfer to Partner Dev. Countries through CTCN/GCF

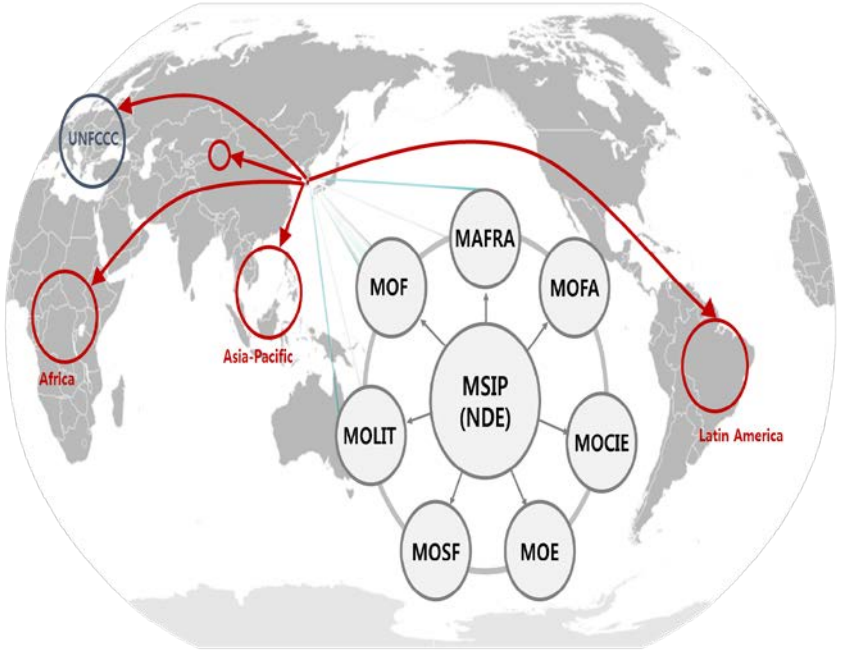


Korean NDE's Global Cooperation Strategy

MSIT aims to become a hub for global climate technology cooperation – linking Korean technology providers with needs of developing partner countries around the world

Vision — **Hub & Sherpa for Global Climate Technology Cooperation**

Target — **Develop Global Cooperation Model**



Five Strategic Directions

① Climate Technology Pilot Projects

② Expand Global Cooperation Resources

③ Strengthen Global Climate Channels

④ Support Climate Tech. Cooperation

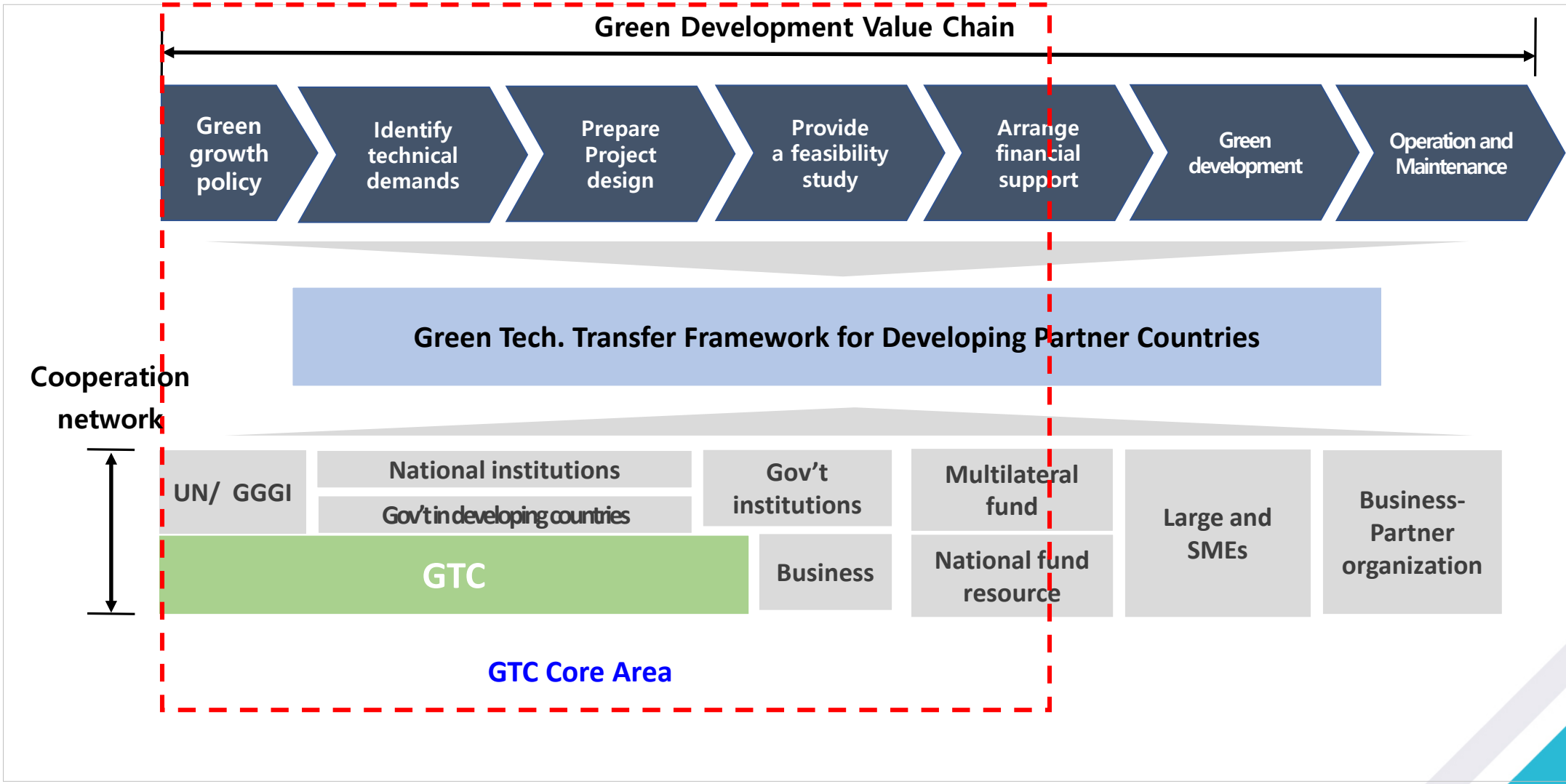
⑤ Support for CTCN Involvement

GTC's Roles

GTC plays an important role of becoming a platform of the global climate technology cooperation

GTC's Technology Cooperation Framework

GTC supports major four areas – identifying tech. needs, designing projects, conducting F/S, and linking with financial resources



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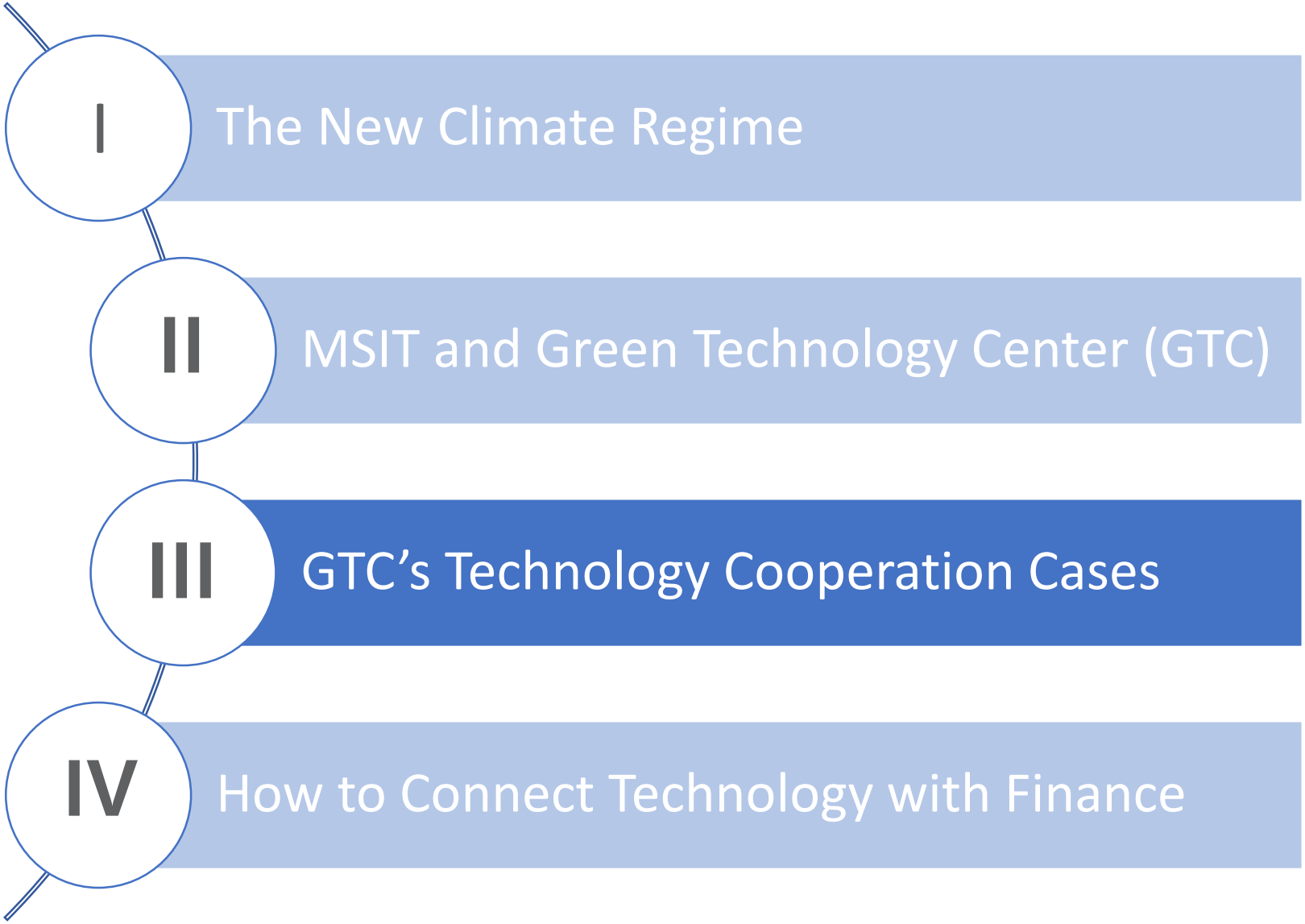
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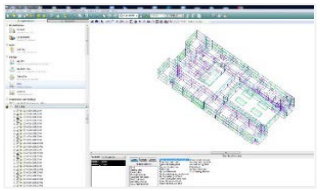
Case 1 : Mongolian Green Educational Building Project

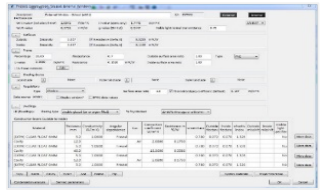
As GTC proves design and required feasibility study on Green Education Buildings, and now GGGI received a fund from the Asian Development Bank for the construction of green buildings

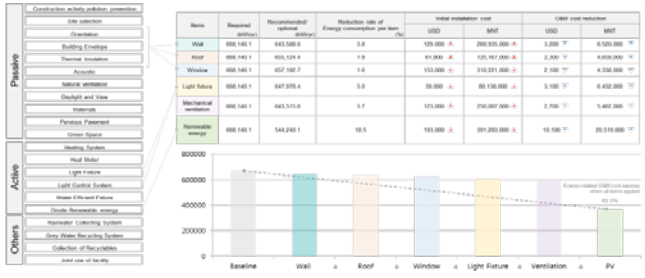
Data Collection & Review

Reviewed Data on Mongolian Schools
Conducted Focus Group Interview

Scenario Development & Evaluation







Provided Tech. Guideline
and PPP Model

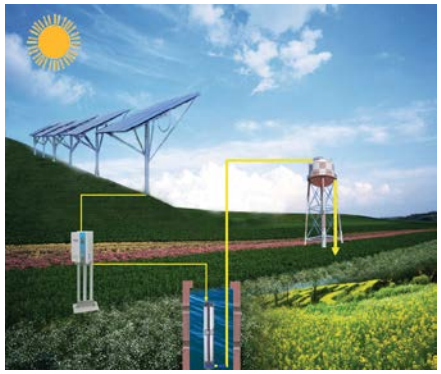
Improvement & Construction

Improvement of Legal Systems
and Construction of a Demonstration Building

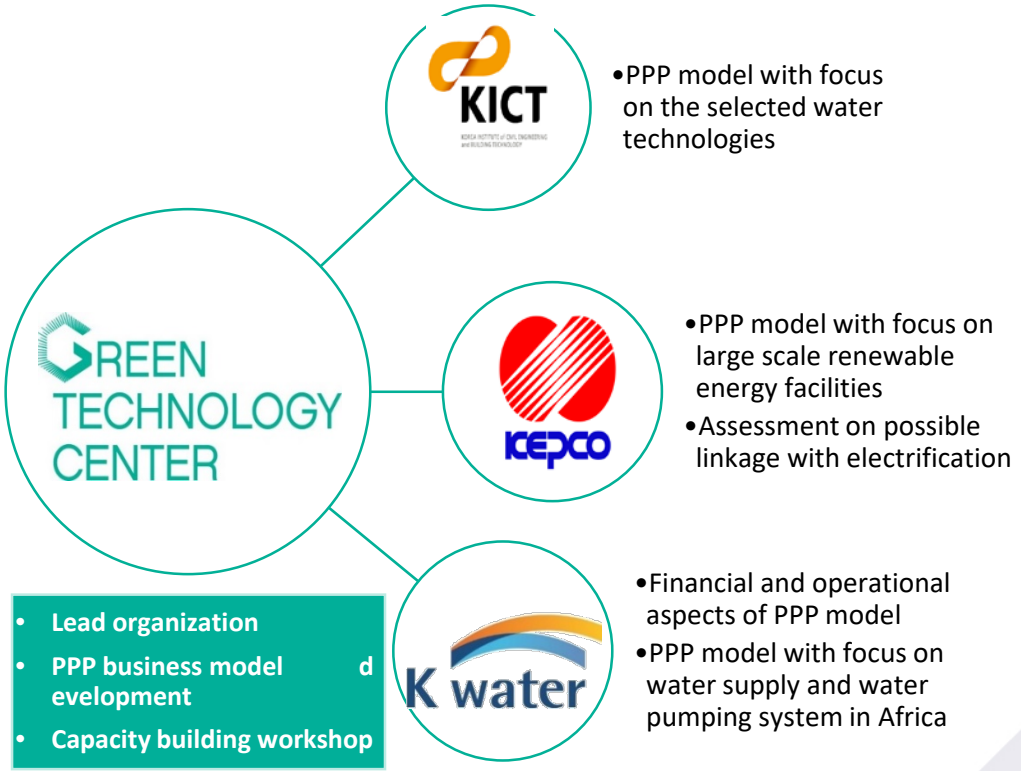
Case 2 : CTCN TA Projects

Response to a technical assistance from Kenyan National Designated Entity (NDE) on implementation of the low-cost green technologies in water sector

Project Overview

Project Title	**Catalyzing low-cost green technologies for sustainable water service delivery – Kenya**		
Time Frame	5 months from the contract date (December 2016 – May 2017)		
Language	English	**Objective**	Adaptation
Target	• **PPP business model** development and **capacity building** to develop sustainable green water resource technology such as pumping systems based on renewable energy 		
Country partners	Water Services Trust Fund of Kenya, Kenya Industrial Research and Development Institute (NDE)		

Project Consortium Structure



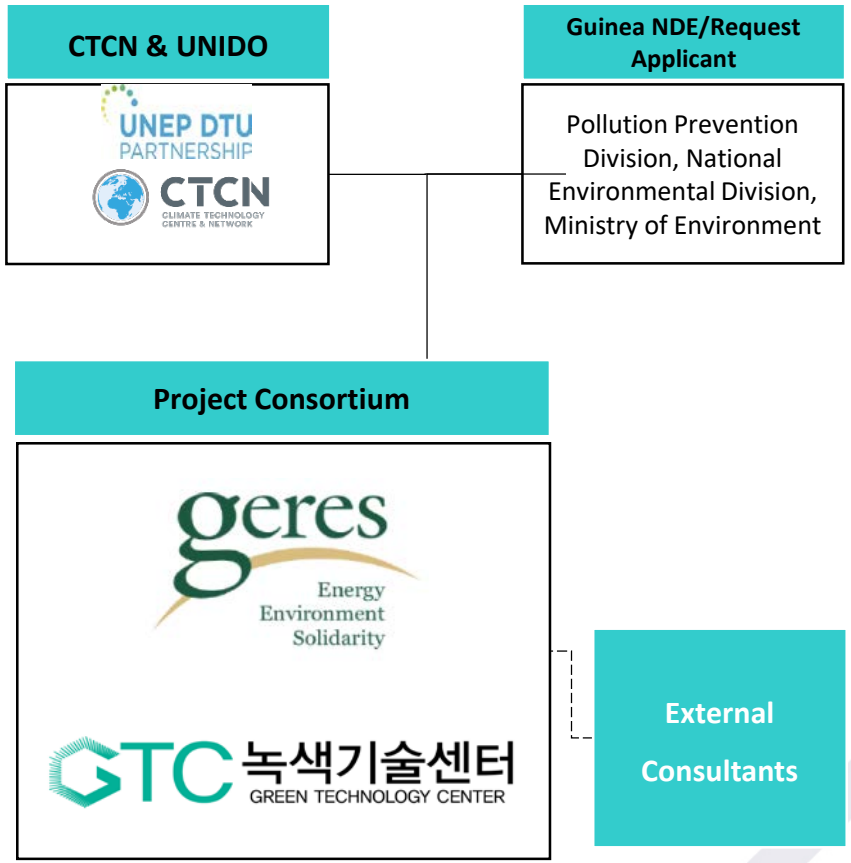
Case 3 : CTCN TA Projects

Response to a technical assistance from Guinean National Designated Entity (NDE) on optimization of funding access to the climate change adaptation projects in Guinea

Project Overview

Project Title	**Optimizing Access to Funding of Technology Projects for Adapting to Climate Change – Guinea**		
Time Frame	6 months (November 2016 – May 2017)		
Language	French	**Objective**	Adaptation
Target	• Increased **knowledge and capacities** to attract investors and donors to fund projects • Increased **number of initiatives funded** to deploy and scale up climate technologies for adaptation		
Country partners	Ministry of Agriculture, Ministry of Energy & Hydraulics, Ministry of Environment, National Environment Council, Research Centers of Guinea		
Photos of Guinea	 		

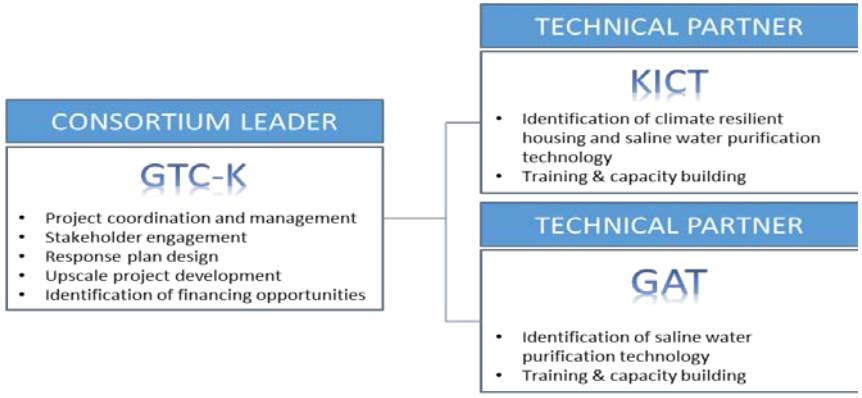
Project Consortium Structure



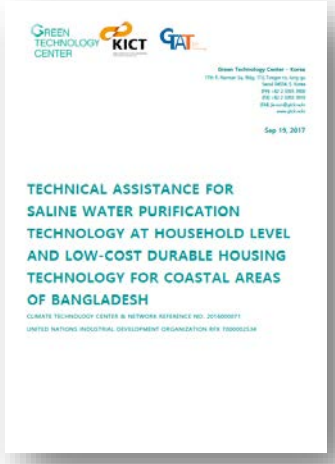
Case 4 : CTCN TA Projects

Bangladesh CTCN TA

- (Lead) GTC; (Consortium) KICT, GAT
- (Title)
  - Technical Assistance for Saline Water Purification Technology at Household level, and Low cost durable housing technology for coastal areas of Bangladesh
  - Period : 2017. 12 ~ 2018. 7
  - Scope :
    - ✓ Tech Assistance Response plan (GTC)
    - ✓ Low cost durable housing tech for construction (KICT)
    - ✓ Saline water purification tech (GTAT)
    - ✓ Cap Building and Tech transfer (GTC)
  - Expected benefit: Exploring climate technology transfer to partner countries



CTCN TA 사업구조



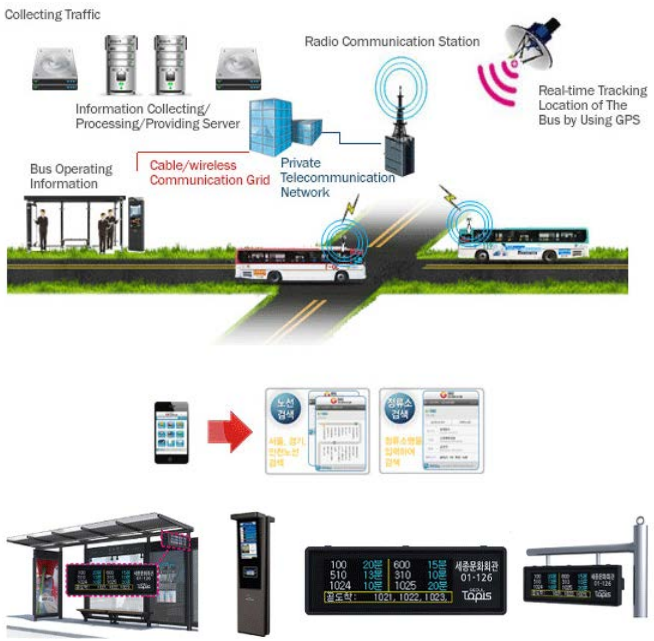
CTCN TA 제안서

보도자료

Case 5 : GCF PPF Proposal

As a model of South-South cooperation in the climate technology sector, planning to link the result of a pilot (ITS) to the GCF project (ITS, BRT).

Pilot Project



Bus Information System (BIS)

GCF Project

Bus Rapid Transit (BRT)

Intelligent Transport System (ITS)

Case 6 : GCF PPF Proposal

Project Overview	
Project Title	Eco-friendly Samosir Island Project
Time Frame	2017.3~6
Objective	Obtain Project Preparation Facility(PPF) from GCF to develop GCF project proposal for sustainable development of Samosir Island and Lake Toba which will contribute to enhance climate resiliance of Toba lake and the life of local residents
Activities	1. Shift traditional power source to renewable Energy such as solar floating photovoltaic and biomass power 2. Improve waste water management and access tclean water 3. Develop Eco-friendly tourism
Partners	Korea Engineering Consultant Corp. Deloitte India Korea Environmental Industry & Technology Institute

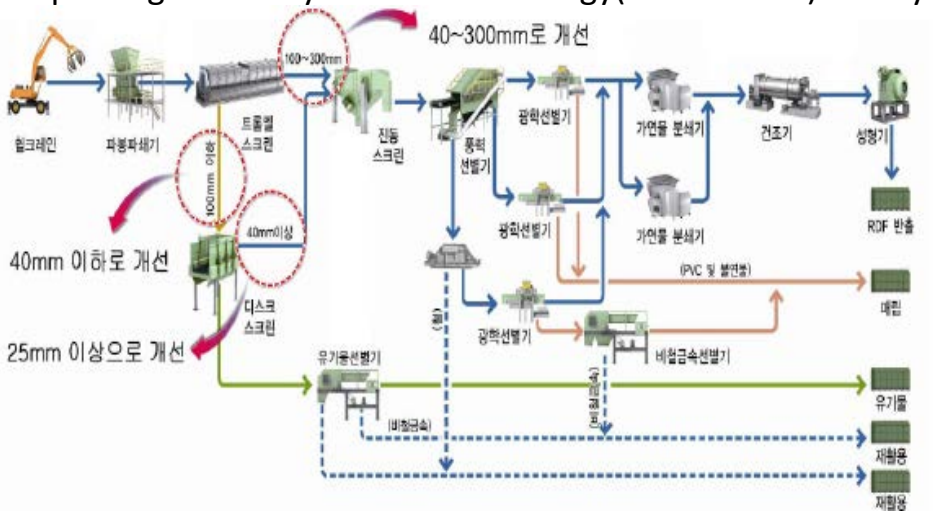
Case 7 : Large Scale Infrastructure: Waste2Energy Project

Developing a cooperative project and a masterplan for sustainable integrated waste management considering various issues in current status of waste disposal through planning and implementing preliminary studies

Improving Waste Collection and Disposal

☐ Improving Waste Collection and Disposal

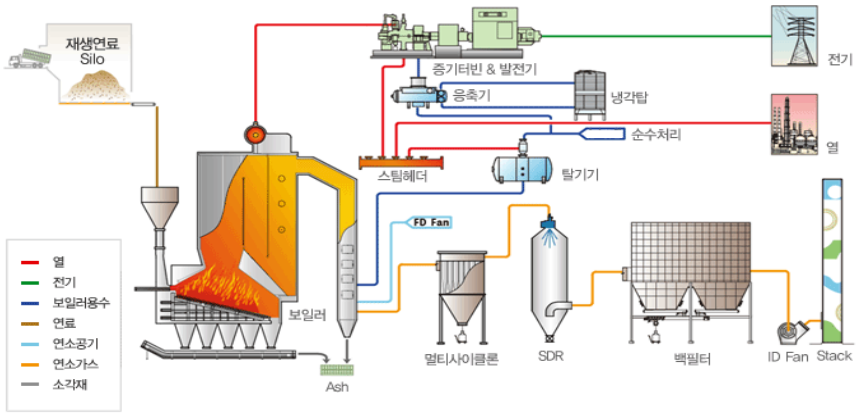
- Introducing curbside program and related facility to increase recycling rate and to reduce amount of landfill
- Increasing recycling rate of valuable resources and facilitating recycling industry
- Improving efficiency of waste-to-energy(incineration) facility



Waste Recycling and Energy Supply Facilities

☐ Waste Recycling and Energy Supply Facilities

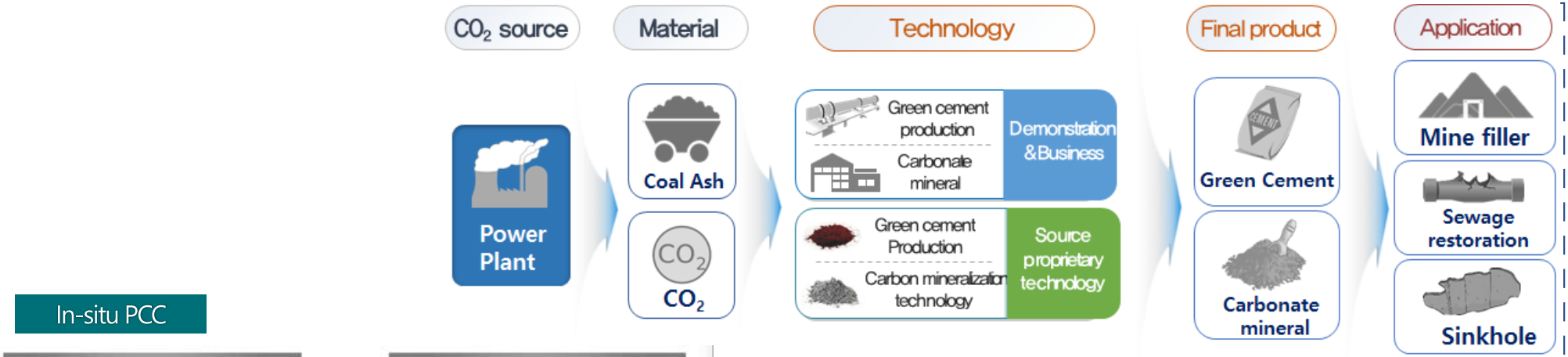
- Introducing power generation and heat supply facility using waste energy
- Improving waste disposal facility to eco-friendly and supplying renewable energy
- Minimizing amounts of waste landfill through eco-friendly waste disposal

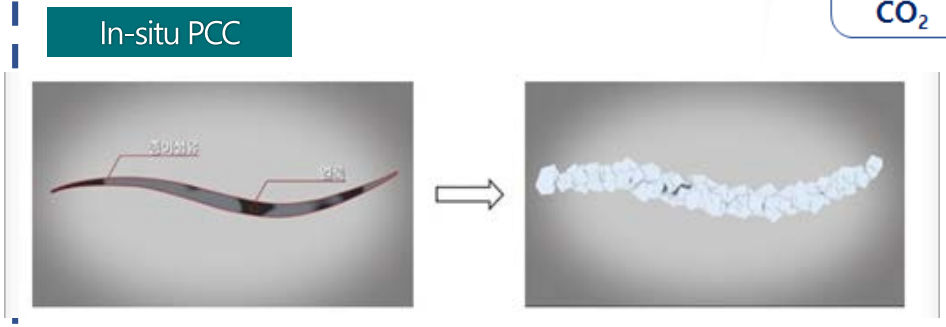


Case 8 : Carbon Capture Utilization: Waste Treatment through Green Cement Technology

The empirical research on the production of green cement based on Carbon Mineralization technology in Vietnam & Joint empirical research and human resource training in Vietnam

- Low-carbon and high-functionality ‘Green cement’
- Carbon money system and In-situ PCC technology

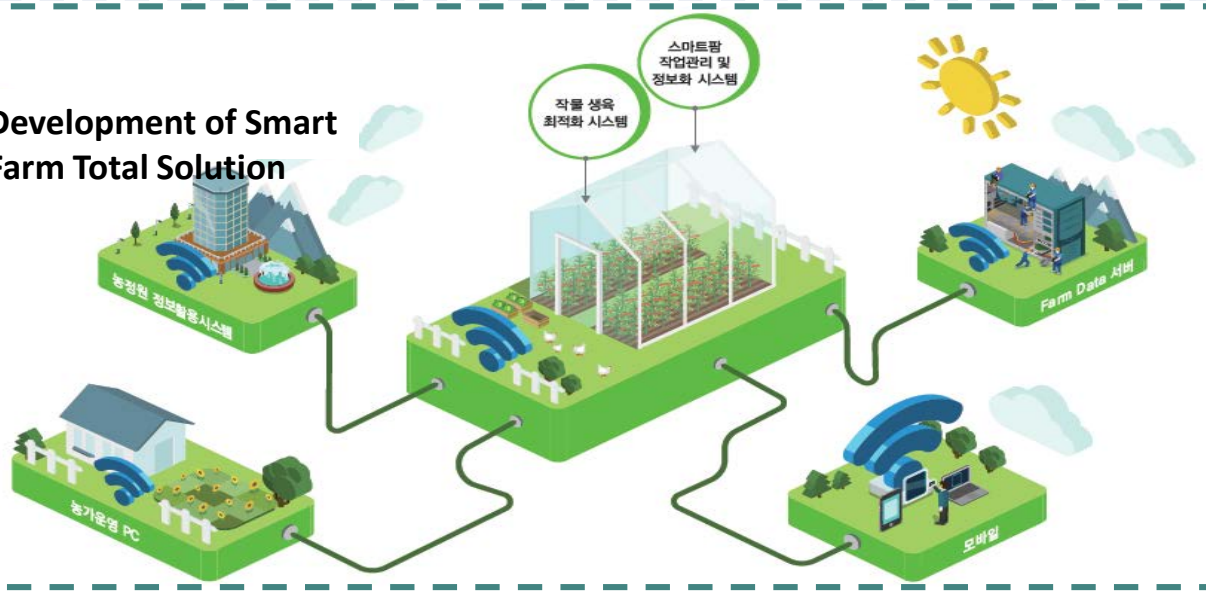




Case 9 : Facilitation of Korea R&D Institutes' Technology Transfer

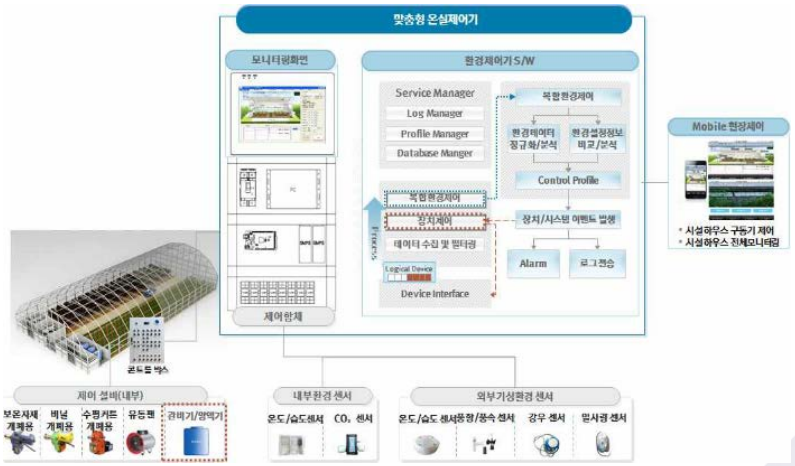
In order to commercialize the KIST's Smart Farm technology, planning to conduct a base research (relevant institution, process, investment, etc.) and develop an optimized model

Development of Smart Farm Total Solution

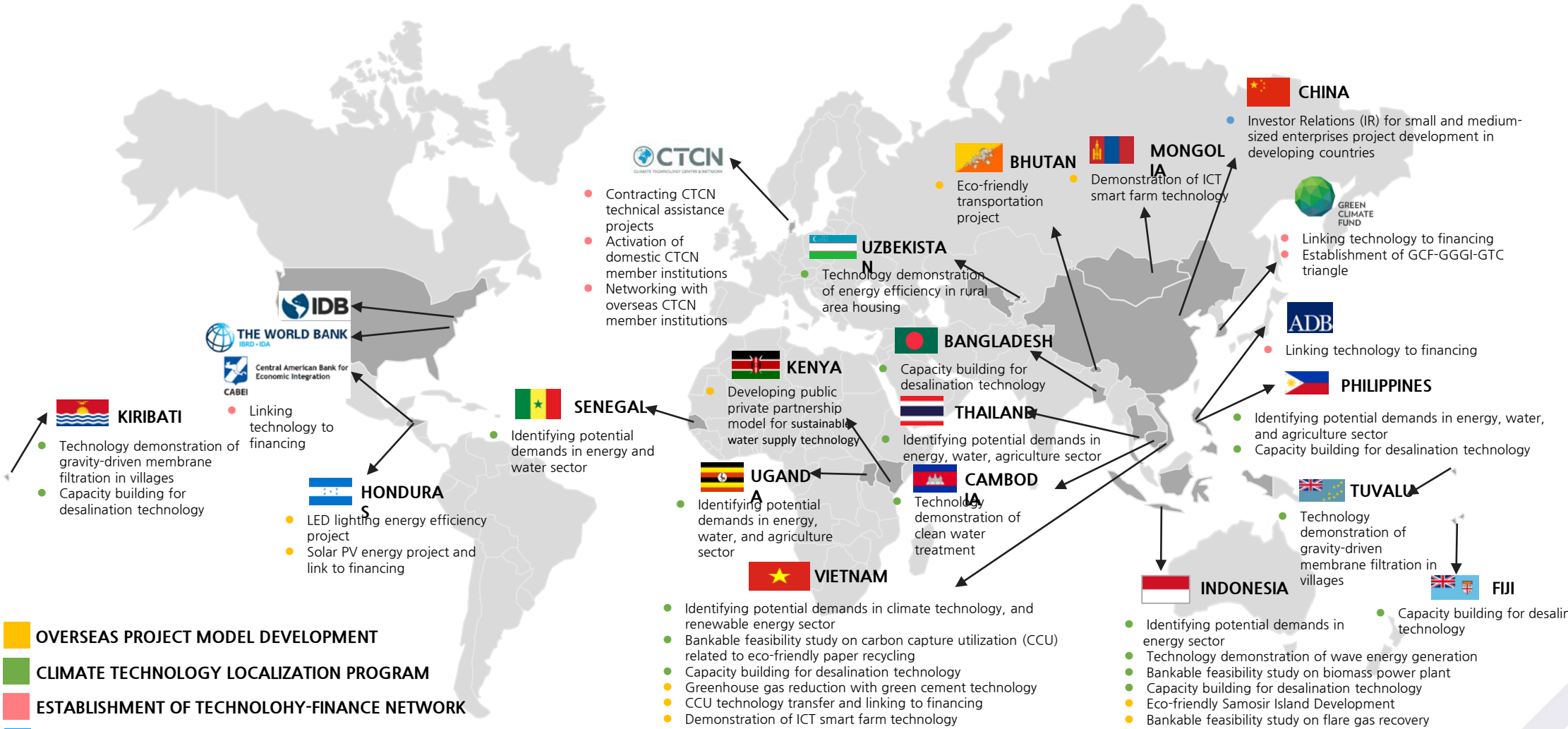


- **Utilization of plant growth and physiological status data**
- **Smart Greenhouse Operation System & Mobile App.**
- **Smart operation management system**
- **Optimum Energy Management System**
- **Information management program**

- **Sensors and Actuators** to control the greenhouse environment
- **Automatically** adjust temperature, humidity, as well as watering
- **Graphic User Interface(GUI)** gives information to the user with ease
- Establishing **Database** for expanding its function



Overview of Global Climate Tech. Cooperation in GTC



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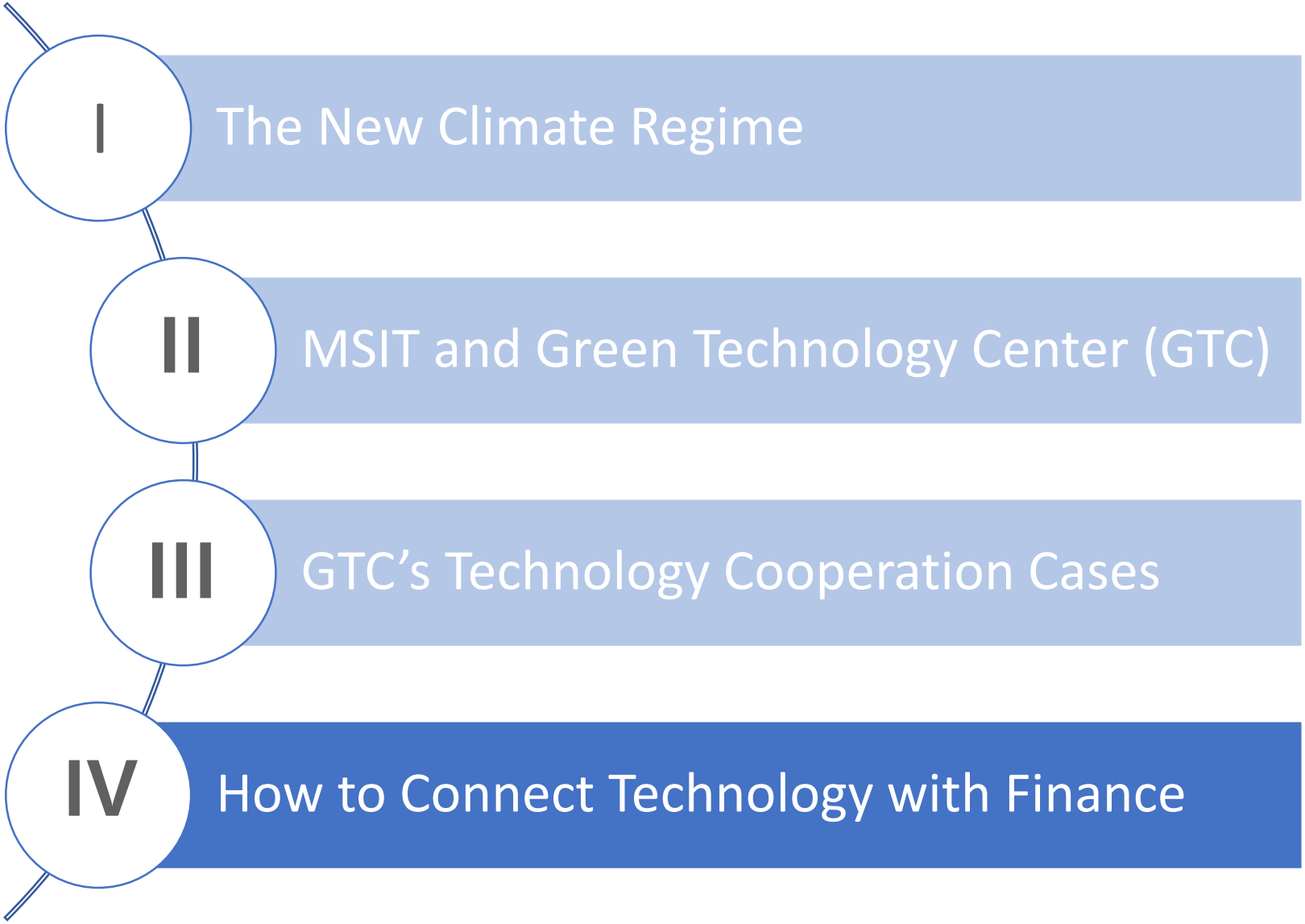
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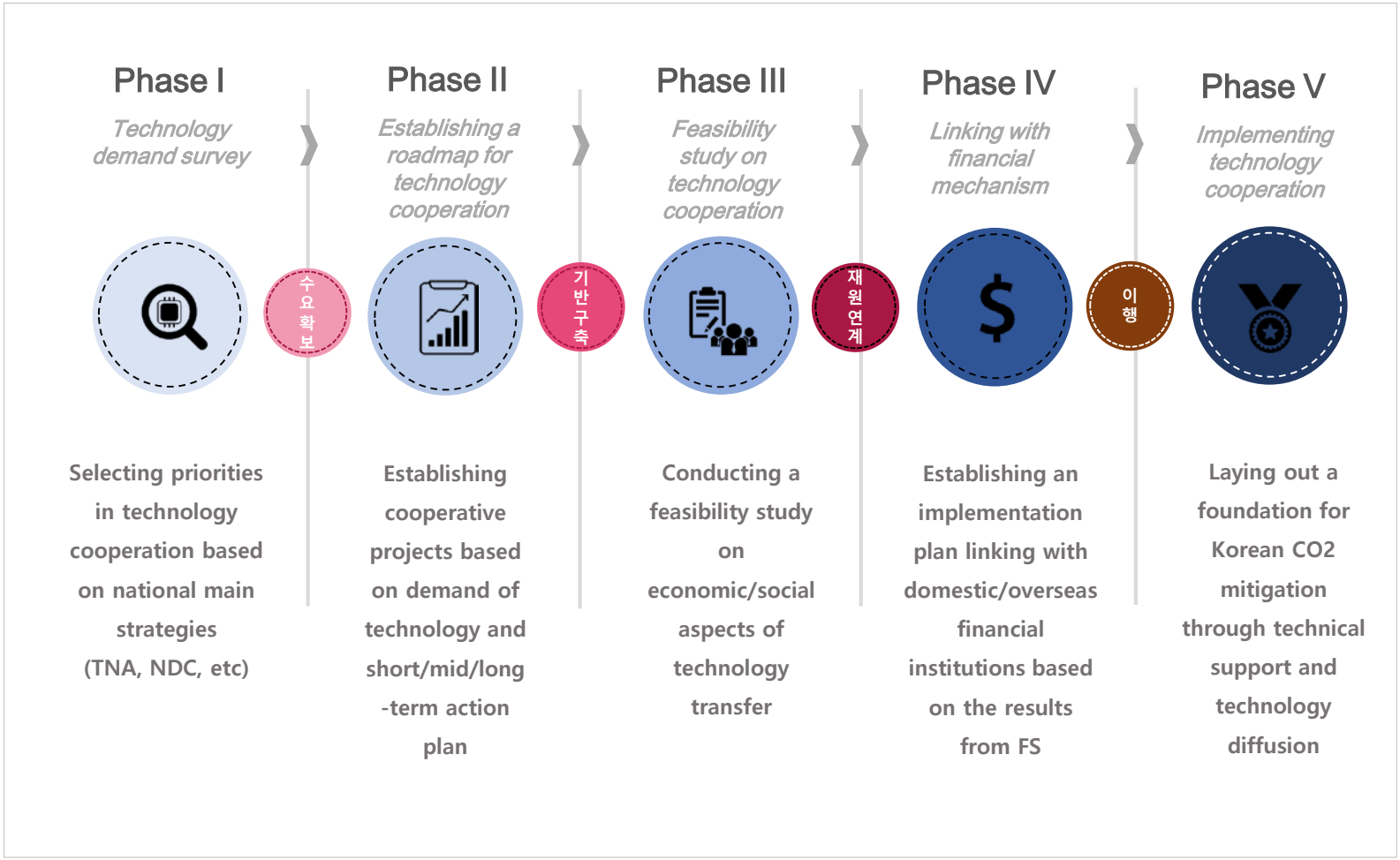
Climate Technology Cooperation Process (General)

Providing systematic support for demand analysis
Establishing a roadmap for technology cooperation
Feasibility study
Linking with finance



Phase 1: Climate Technology Demand Analysis

Selecting priorities of technology cooperation through discussions with relevant institutions, and Matching with national key strategies (TNA, NDC, national cooperative strategies, etc.)

Analyzing TNA under UNFCCC

Analyzing national NDC

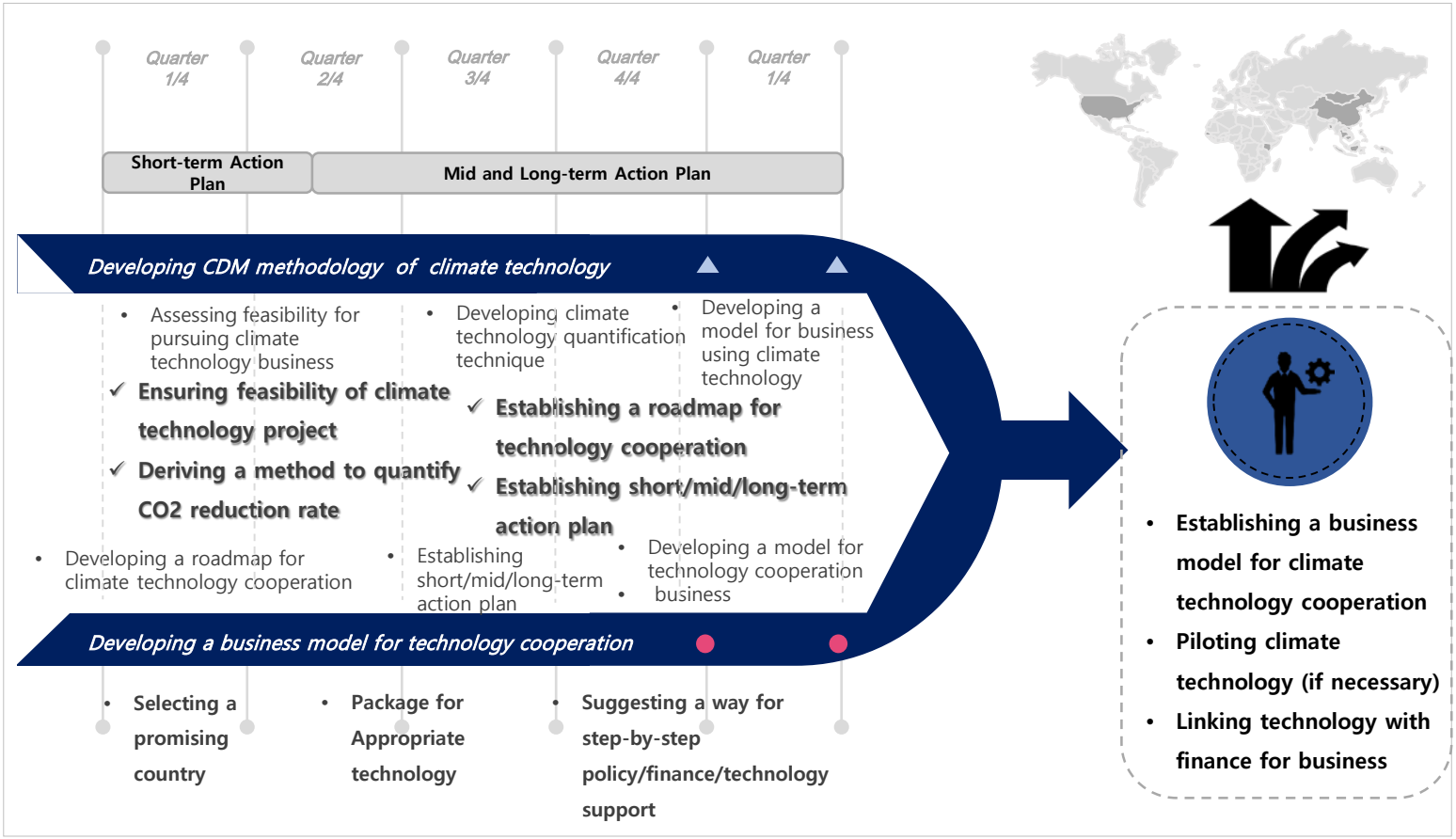
Analyzing national development policies

Analyzing CPS of international organizations

Analyzing national cooperative strategies of Korean ODA

Phase 2: Establishing a roadmap for climate technology cooperation

Finding a way to diffuse climate technology in short/mid/long term through appropriate technology package based on needs for technology and roadmap for technology cooperation



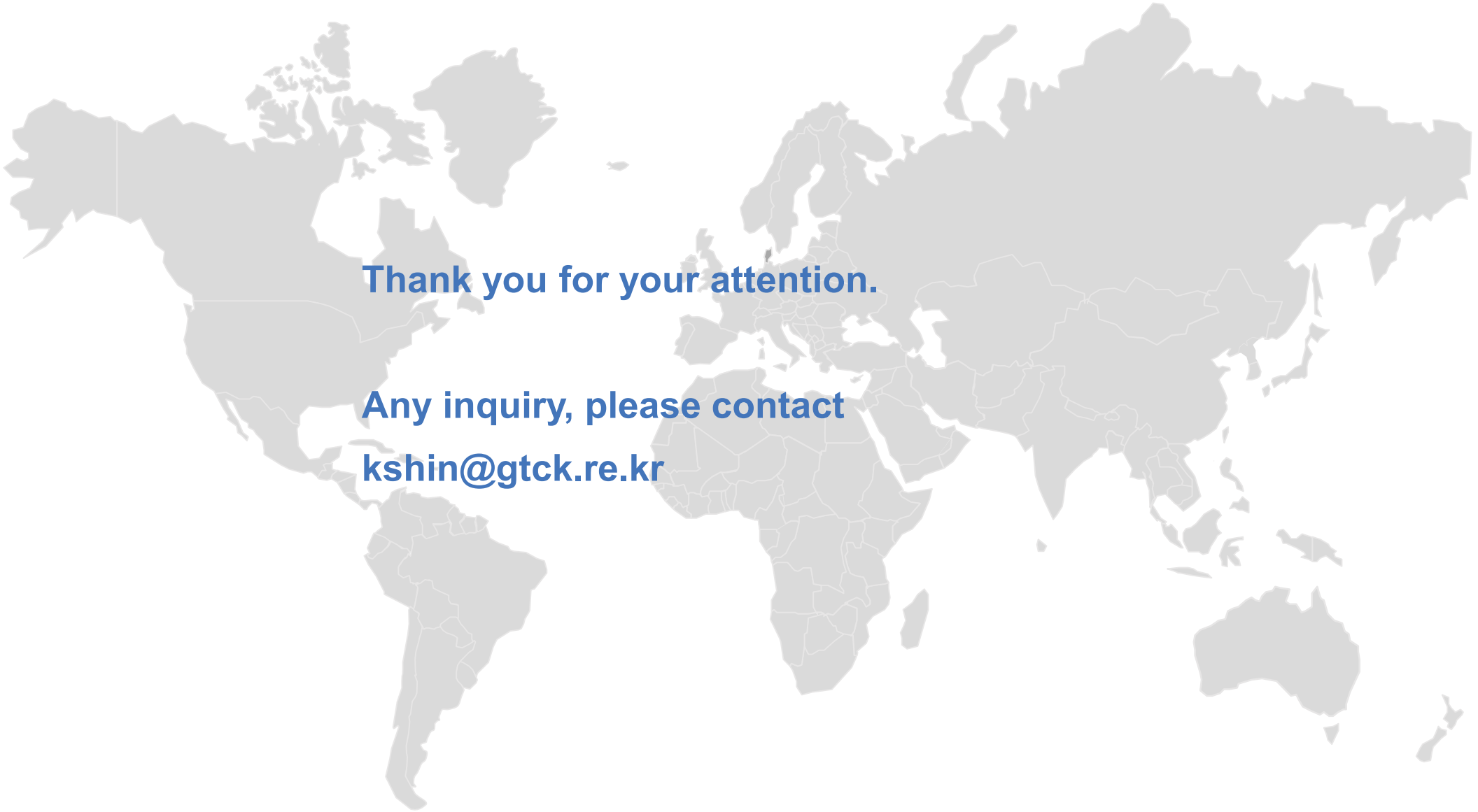
Phase 3: Conducting a feasibility study on climate technology cooperation

Confirm the possibility of forming a business on climate technology through project development for climate technology feasibility studies

Phase 4/5: Linking climate technology with financing and Implementing climate Technology projects

(1) Deciding a type of climate finance in early phase
(2) The importance of Bankable Feasibility Study
(3) Tailor-made approach based on needs of developing partner countries, development stages and their priorities
(4) Communication with governments of developing partner countries from their perspective

Technical Assistance (Example)	Global Climate Finance and ODA (Example)	Commercial Lending (Example)
• CTCN Technical Assistance (TA) • NAMA • GCF Readiness • GCF Project Preparatory Facility (PPF) • Knowledge Sharing Program (KSP) • ADB- PPTA, CDTA, RDTA, etc. • World Bank- Green Growth Trust Fund • IDB – Technical Cooperation Fund, • Public entity' feasibility study fund, etc.	• GCF • CIF • ADB Climate Fund • World Bank Climate Fund, etc. • Bilateral development fund: KEXIM EDCF, KOICA, JICA, KfW, DfID, USAID, etc.	• Global commercial lending: Barclays Asia Fund, etc. • Korea domestic/public: Global Infrastructure Fund, etc.



Thank you for your attention.

Any inquiry, please contact

kshin@gtck.re.kr