Knowledge Sharing Program

2023 경제발전경험공유사업(KSP) 성과공유컨퍼런스

2023 Knowledge Sharing Program Dissemination Conference

September 11(Mon), 2023, 09:30–13:00
THE WESTIN JOSUN SEOUL | Hybrid Conference

주최 | Hosted by

기획재정부 Ministry of Economy and Finance

주관 | Organized by

KDI 한국개발연구원 Korea Development Institute

한국수출입은행 THE EXPORT-IMPORT BANK OF KOREA

kotra 대한무역투자진흥공사

Contents

PROGRAM

Opening Ceremony

09:30-09:35	**Opening Remarks**	**Byoung Hwan KIM** 1st Vice Minister, Ministry of Economy and Finance(MOEF), Republic of Korea
09:35-09:40	**Welcoming Remarks**	**Dong Chul CHO** President, Korea Development Institute(KDI)
09:40-10:00	**Keynote Speech**	**Jeffrey SACHS** (Video) Professor, Columbia University
10:00-10:10		**Group Photo**

Panel Discussion

Moderator: **Hyoung Kwon KO** | Former Ambassador, Permanent Representative of Korea to the OECD

10:10-11:15

[Presentation 1] Discourse on Economic Connectivity and the Role of Knowledge Sharing Initiatives in the International Community		**In Kyo CHEONG** President, Korean Security Agency of Trade and Industry(KOSTI)
[Presentation 2] Pathways to Effective Cooperation in the Transition of Industries	Critical Technology	**Dong Hoon OH** Managing Director of Technology Policy, Office of Strategic R&D Planning
	Climate Change	**Chae Woon OH** Principal Researcher, National Institute of Green Technology
	Finance	**Richard DAMANIA** Chief Economist, Sustainable Development Practice Group, World Bank Group
Discussion		**Chi Ung SONG** Senior Research Fellow, Science and Technology Policy Institute(STEPI)
		Sarah McGuire Head of Digital Trade Network and Digital Counsellor, British Embassy Seoul

The Key Achievements of KSP

Moderator: **Jung Wook KIM** | Executive Director, Center for International Development(CID), Korea Development Institute(KDI)

11:15-12:00	**[Indonesia]** Establishment of Certification System for Discovering and Fostering Technological Innovations Type SMEs	**Siti AZIZAH** Deputy Minister of Entrepreneurship, Ministry of Cooperatives and SMEs, Indonesia
	[Paraguay] Consulting on the Medical Device Control System and Certification Scheme An Accidental Success	**Jose Anibal GIMENEZ KULLAK** Director General, Ministry of Industry and Commerce, Paraguay
	[Rwanda] Enhancing Institutional Capacities for Facilitating the Use of Internationally Transferred Mitigation Outcomes(ITMO) through Electirc Mobility	**Claude K. GANZA** First Counselor, Embassy of Rwanda to the Republic of Korea
	[Q&A]	

Luncheon Session

12:00-13:00	**[Presentation 1]** Advancement of KSP Planning: Private Sector Proposed Projects	**Duk Hwan JANG** Manager, Korea Trade-Investment Promotion Agency(KOTRA)
	[Presentation 2] Cases of Private Sector Proposed Projects	**Kwi Hyun KAHNG** Deputy Director of Global Business Department, Korea District Heating Corporation
	[Q&A] Ways to Apply Knowledge Sharing Program(KSP) for the Private Sector	KSP Applications by 2023 Designated Enterprises for Proposed Private Sector Projects

OPENING REMARKS

Byoung Hwan KIM

1st Vice Minister,
Ministry of Economy and Finance(MOEF),
Republic of Korea

Byoung Hwan KIM is a finance and macroeconomics specialist and currently serves as the 1st Vice Minister of Economy and Finance of the Republic of Korea. He has served various key positions over the years including Director General of Proceedings Division at the Executive Office of the Financial Services Commission under the Ministry of Strategy and Finance (2007), Administrative Officer at the Secretariat for Economy and Finance under the Office of the President (2009), Policy Analysis Officer at the Organization for Economic Cooperation and Development (OECD) (2009), as well as Director of the Financial Market Division (2013), Director of the Economic Analysis Division (2014), and Director of the General Policy Division (2015) all at the Economic Policy Bureau under the Ministry of Economy and Finance. He then worked at the Inter-American Development Bank (IBD) in 2016 as a special adviser. Upon returning to the Ministry of Economy and Finance, he served as Director of the Commission of Innovative Growth and Planning in 2020, and then as Director General for the Economic Policy Bureau (2021). He was the Secretary to the President for Economy and Finance in 2022.

Byoung Hwan Kim holds a bachelor's degree in Economics from Seoul National University, Seoul, Korea, and a master's degree in Business Administration from the University of Birmingham, UK.

WELCOMING REMARKS

Dong Chul CHO

President,
Korea Development Institute(KDI)

Dong Chul CHO is President of Korea Development Institute(KDI) and KDI School of Public Policy and Management. Before he became the president of KDI, he was a professor at the KDI School of Public Policy and Management. Until April 2020, he served as a member of the Monetary Policy Board at the Bank of Korea for 4 years. Prior to this, he was chief economist and head of Macroeconomic and Financial Policy Department at the Korea Development Institute(KDI). He also served as a member of National Economic Advisory Council to the President from 2013 to 2014, as a member of Presidential Council of Future and Vision from 2008 to 2010, as senior counselor to the Deputy Prime Minister and head of the Macro Policy Advisory Team at the Ministry of Finance and Economy from 2005~2006, as a member of the Policy Advisory Committee for the Prime Minister in 2004, and as a member of the Presidency Undertaking Advisory Committee in 2003. Before he joined the KDI in 1995, Dr. Cho was a professor of Economics at Texas A&M University. He graduated from Seoul National University and holds a Ph.D. in Economics from the University of Wisconsin-Madison. His major areas of interest include macroeconomics and international finance. He has published many articles in professional journals such as Journal of Money, Credit, and banking, Journal of International Economics, and Journal of Econometrics, and most recently edited the book, Growth, Crisis and the Korean Economy, which collects his own articles in English.

KEYNOTE SPEECH

Jeffrey SACHS

Professor, Columbia University

Jeffrey SACHS is University Professor and Director of the Center for Sustainable Development at Columbia University, where he directed the Earth Institute from 2002 until 2016. He is President of the UN Sustainable Development Solutions Network, Co-Chair of the Council of Engineers for the Energy Transition, Commissioner of the UN Broadband Commission for Development, academician of the Pontifical Academy of Social Sciences at the Vatican, and Tan Sri Jeffrey Cheah Honorary Distinguished Professor at Sunway University. He has been Special Advisor to three United Nations Secretaries-General, and currently serves as an SDG Advocate under Secretary General António Guterres. He spent over twenty years as a professor at Harvard University, where he received his B.A., M.A., and Ph.D. degrees. Sachs has received 42 honorary doctorates, and his recent awards include the 2022 Tang Prize in Sustainable Development, the Legion of Honor by decree of the President of the Republic of France, and the Order of the Cross from the President of Estonia. His most recent books are The Ages of Globalization: Geography, Technology, and Institutions (2020) and Ethics in Action for Sustainable Development (2022).

MODERATOR

Hyoung Kwon KO

Former Ambassador,
Permanent Representative of
Korea to the OECD

Hyoung Kwon KO has a distinguished career spanning 31 years within the Ministry of Economy and Finance of South Korea. Mr. Ko served as the First Vice Minister, overseeing pivotal areas such as macroeconomic policy, tax policy, and international finance. Over the course of his service, his responsibilities extended to policy coordination, budget management, and macroeconomics, underscoring his multifaceted capabilities.

Following this capacity, Mr. Ko assumed the role of Permanent Representative of Korea to the OECD in March 2019, where he served for three impactful years. During this tenure, he notably displayed dynamic leadership as the Chair of the OECD Management Board of the Pension Budget and Reserve Fund (PBRF) and the Chair of the OECD Southeast Asia Regional Programme.

Currently, Mr. Ko serves as the Chairman of the Investment Facilitation Committee of Bosung Corporation, where he spearheads fundraising initiatives for the advancement of a renewable energy-based smart city and the promotion of clean energy investments including hydrogen and ammonia.

Mr. Ko is an alumnus of the KDI School of Public Policy and Management, holding an M.A. in Public Policy. He earned a B.A. in Economics from Seoul National University and further enriched his education through participation in the JD/MBA joint program at the University of Colorado, Boulder.

SPEAKER

In Kyo CHEONG

President,
Korean Security Agency
of Trade and Industry(KOSTI)

In Kyo CHEONG is President of Korean Security Agency of Trade and Industry (KOSTI), which is a public institution for enhancing trade security. He serves as a committee chair of Economic Security in National Economic Advisory Council (for the President of Korea), and joint chairman for the National Trade Negotiation Advisory Committee. He has advised several Korean policy authorities on trade policy issues. He has been actively engaged in media editorial boards and discussion panel in broadcasting media, contributing to the improvement of public awareness for Korea's trade security and trade policy.

He was a professor of International Trade at Inha University, Incheon, Korea, and served as the Vice President at the university, and Chairman of FTA Research Forum, as well as an active member of advisory committees for various ministries and national agencies. He served as the President of Korea's Negotiation Association (2011-2012), Korea's International Trade Economist Association (2010), and Research Fellow at the Korean Institute for International Economic Policy (KIEP) for nine years (1996-2004).

He contributed to establishing the groundwork for Korea's free trade agreement (FTA) policy, and has been actively involved as a member of Korea's negotiation team and advisor in negotiating Korea's FTAs with Chile, Singapore, ASEAN, US, EU, Japan, Vietnam, South America (MERCOSUR) and others. Because FTAs deal with a wide range of trade rules and economic systems, he came to study various trade policy issues such as WTO trade issues, export promotion policies, export controls, trade adjustment assistance, and regional economic cooperation. For the past five years, his interest has been economic security and export control, and he has published a book titled "Economic Security and Export Control."

Based on his rich experience on trade and industrial policy studies, business consultations and international activities for last 30 years, he has been consulting many countries around the globe, including Turkiye, Vietnam, Indonesia, Malaysia, China, Taiwan, Bangladesh, Bhutan, and more. Also, he has experiences in working with international organizations such as WTO, World Bank, EC, ESCAP, ASEAN, ERIA, ADB, US AID, ADBI and IDB.

SPEAKER

Dong Hoon OH

Managing Director of
Technology Policy,
Office of Strategic R&D
Planning

Dong Hoon OH majored in physics at college. And he studied the history of science in graduate school. He has been interested in science and technology policy, R&D investment, technology scale-up, and technology entrepreneurship. He had previously served as a director general of S&T policy planning at KISTEP and program manager for the OECD. He is currently working for the Office of Strategic R&D Planning under the Ministry of Trade, Industry and Energy as an Managing Director of R&D performance evaluation and technology commercialization. He has written several books, including *The Country of Responsible Innovation.*

SPEAKER

Chae Woon OH

Principal Researcher,
National Institute of
Green Technology

Chae Woon OH is a Principal Researcher at the Global Business Center of the National Institute of Green Technology (NIGT), a government-funded research institute under the Ministry of Science and ICT (MSIT) in Korea. At NIGT, she has been leading numerous research projects on technology-related international institutions that govern global climate technology cooperation under the UNFCCC. She received a B.A. from Korea University, a B.E. from Korea National Open University, and a M.A. in international relations and a Ph.D. in international studies from Waseda University. Her research focuses on international relations and international institutions & organizations in the field of global environmental politics, particularly in the issue area of climate change and international technology transfer. She participated in the negotiation meetings of the United Nations Framework Convention on Climate Change from 2015 to 2021 as a technology negotiator. She has been an expert advisor to Korea Meteorological Organization's Domestic Subcommittee on mitigation in response to Intergovernmental Panel on Climate Change (IPCC) Working Group III (Mitigation) since 2020. Also, she has been the Member of the Young Korean Academy of Science and Technology (Y-KAST) since 2018.

SPEAKER

Richard DAMANIA

Chief Economist,
Sustainable Development
Practice Group,
World Bank Group

Richard DAMANIA is the Chief Economist of the Sustainable Development Practice Group. He has held several positions in the World Bank including as Senior Economic Advisor in the Water Practice, Lead Economist in the Africa Region's Sustainable Development Department, in the South Asia and Latin America and Caribbean Regions of the World Bank. His work has spanned across multiple sectors and has helped the World Bank become an acknowledged thought-leader on matters relating to environment, water and the economy. Prior to joining the World Bank he held positions in academia and has published extensively with over 100 papers in scientific journals.

PANELIST

Chi Ung SONG

Senior Research Fellow,
Science and Technology Policy
Institute(STEPI)

Chi Ung SONG is the Senior Research Fellow at STEPI (Science & Technology Policy Institute) who has strong academic background in Economics as well as high level of professional expertise in policy practices. He has published the number of academic and empirical articles in the field of Applied Microeconomics, Quantitative Methodology, Econometrics, Development Economics and Innovation Economics.

Dr. Song was the Director of Center for Asia-Pacific Strategy on the Frontier Technology in 2022 after serving as the Vice President from November 2019 to December 2021 and the Chief Director of Division for Global Innovation Strategy from 2017 to 2019.

As the Chief Director, Dr. Song has managed both multilateral cooperation projects (ASEAN-ROK, APEC PPSTI, OECD CSTP), development cooperation projects (K-Innovation ODA program, KSP projects, KOICA projects). Currently, Dr. Song oversees the entire research projects in STEPI including contract-based projects financed by the Korean government.

He has also actively participated in various types of policy research projects in the area of global cooperation and development cooperation, strategic foresight and future studies, national innovation systems (NIS) as well as Economics of technology and innovation as project manager or co-author.

In addition, Dr. Song has been deeply involved in various academic societies during last few years. From 2012 to 2016, Dr. Song has been an Adjunct Professor at the Department of Urban Planning in Gachon University. At the same time, he has provided lectures on Economics at Hankook University of Foreign Studies, Kyonggi University and Seoul National University.

He also has been a visiting scholar at CISTP (Center for International Science and Technology Policy) of the George Washington University in 2014. Dr. Song has been a key member of many academic societies and he is currently a President of the International Association of Area Studies.

PANELIST

Sarah McGuire

Head of Digital Trade Network
and Digital Counsellor,
British Embassy Seoul

Sarah McGuire is Digital Counsellor and the head of Digital Trade Network under the British Embassy in Seoul. She has served numerous important positions including International Policy Adviser for China in the Department for Digital, Culture, Media and Sport (now Department of Science, Innovation, and Technology); EU Exit Planning Adviser for the Department for Business, Energy and Industrial Strategy; Desk Officer for Europe Bilateral Strategy at the Foreign and Commonwealth Office; Research and Media Adviser for the House of Commons, UK Parliament; and Desk Office for the European Fisheries Control Agency under the European Commission and European Union.

Sarah McGuire holds a bachelor's and master's degrees in French and European Union Studies from the University of Edinburgh, and a master's degree in European Politics and International Relations from Maastricht University.

MODERATOR

Jung Wook KIM

Executive Director,
Center for International
Development(CID),
Korea Development Institute(KDI)

Jung Wook KIM is currently the Executive Director of the Center for International Development (CID) at the Korea Development Institute (KDI). Since joining KDI in 2007, he has accumulated diverse experience in both policy research and project management. He also held various executive positions at the KDI as Director and Vice-President of the Department of Industry and Competition Policy and Director of the Center of Regulatory Studies. Currently, he is responsible for designing, executing, and delivering the Knowledge Sharing Program (KSP) and other development cooperation projects with multiple partners, including Multilateral Development Banks (MDBs), UN agencies, and partner governments. He holds a B.A. and M.A. in Economics from Seoul National University and a Ph.D. in Economics from the University of Wisconsin-Madison.

SPEAKER

Siti AZIZAH

Deputy Minister of
Entrepreneurship,
Ministry of Cooperatives and SMEs,
Indonesia

Siti AZIZAH, currently the Deputy Minister for Entrepreneurship in the Ministry of Cooperatives and SMEs Republic of Indonesia, boasts a formidable background in the finance and banking sector. Her passion for SME and entrepreneurship development has been the driving force behind her career. With her extensive experience, she has been involved in creating an enabling policy and environment for SMEs and entrepreneurship.

Her commitment to fostering the innovation of entrepreneurs is the key to a thriving entrepreneurial landscape in Indonesia.

SPEAKER

Jose Anibal GIMENEZ KULLAK

Director General,
Ministry of Industry and Commerce,
Paraguay

Jose Anibal GIMENEZ KULLAK holds the position of Director General of Industrial Policy and has worked for the Ministry of Industry and Commerce (MIC) of Paraguay since 1994. He served at MIC in many positions such as project manager in fields related to Industrial Development, SMEs, Investment and Trade Promotion, Automobile and Health Industry with countries such as Korea, Taiwan, Germany, and Japan. He was appointed Vice Minister of Industry in 2007 – 2008. He is a former university professor on business related topics. He is one of the senior chief negotiator of MERCOSUR for issue regarding Investment and Automobile Policy.

His first experience with Korea was in 2002 on a training course on Investment and E-Commerce organize by Hankuk University of Foreign Studies (HUFS). He has an extensive knowledge and interest on Asian economic development having worked in the past with institution in Korea, Japan, Taiwan and Singapore. He is currently participating on a Master Program on Asia – Pacific and Latin American Studies, from the department of Global Politics and Economics at Tamkang University in Taiwan.

More recently he has worked with KOTRA's KSP Programs on the automobile industrial policy with the Hyundai Research Institute and with SYNEX on the pharmaceutical industry and regulators.

SPEAKER

Claude K. GANZA

First Counselor,
Embassy of Rwanda to the
Republic of Korea

Claude K. GANZA is the First Counselor of the Embassy of Rwanda in Seoul, Republic of Korea.

He is a trained diplomat, and an IT (Information Technology) engineer by education. He also holds an MBA from Oklahoma Christian University.

Before joining the Ministry of Foreign Affairs of Rwanda in 2015, he worked in the private sector as an IT Network Infrastructure and Security Manager and Business Continuity Manager for more than 7 years in both the telecommunication and Banking industries in Rwanda.

SPEAKER

Duk Hwan JANG

Manager,
Korea Trade-Investment
Promotion Agency(KOTRA)

Duk Hwan JANG has worked for Korea Trade-Investment Promotion Agency (KOTRA) since 2016. He served the KOTRA Development Cooperation Team as an assistant manager from 2016 to 2018, and the KOTRA Shanghai Office as Manager from 2018 to 2021. He is currently the project manager for Knowledge Sharing Program (KSP) at the KOTRA Development Cooperation Office. Mr. Jang holds a bachelor's degree in Real Estates Studies from KonKuk University, Seoul, Korea.

SPEAKER

Kwi Hyun KAHNG

Deputy Director of Global Business Department, Korea District Heating Corporation

Kwi Hyun KAHNG is a district heating specialist. He has worked for Korea District Heating Corporation for 26 years and developed many district heating projects in new towns such as Paju, Gwanggyo and Pangyo. Recentely he had carried out new business development as the establishment of a hydrogen charging station subsidiary.

Currently, he is participating in a project to modernize outdated district heating project in Mongolia.

Also, through Knowledge Sharing Program he provides policy and technical consulting for improving district heating in Uzbekistan and Kazakhstan.

Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

Presentation Materials

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Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

Panel Discussion

Moderator

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Panel Discussion [Presentation 1]

Issues of International Cooperation for Economic Security and Implications for KSP

In Kyo CHEONG

President, Korean Security Agency of Trade and Industry(KOSTI)

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ISSUES OF INTERNATIONAL COOPERATION FOR ECONOMIC SECURITY AND IMPLICATIONS FOR KSP

PRESENTER

IN KYO CHEONG
PRESIDENT, KOREA SECURITY AGENCY OF TRADE AND INDUSTRY (KOSTI)

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2023 Knowledge Sharing Program Dissemination Conference

01 ECONOMIC SECURITY

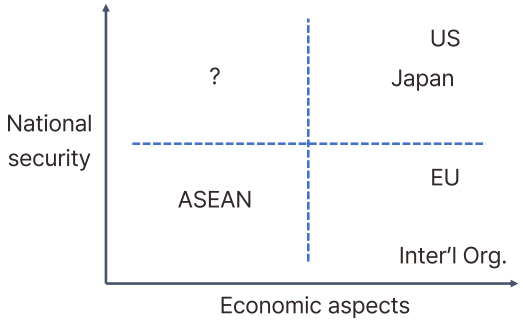
- DEFINITION OF ECONOMIC SECURITY
- COVERAGE OF ECONOMIC SECURITY

DEFINITION OF ECONOMIC SECURITY

2023 Knowledge Sharing Program Dissemination Conference

DEFINITION OF ECONOMIC SECURITY

- There still does not exist an internationally accepted concept of economic security, and there are differences in interpretation between international organizations and countries.
- International organizations
  - ILO
  - Red Cross
- Major countries
  - US
  - EU
  - Japan
  - Korea
  - ASEAN
  - India



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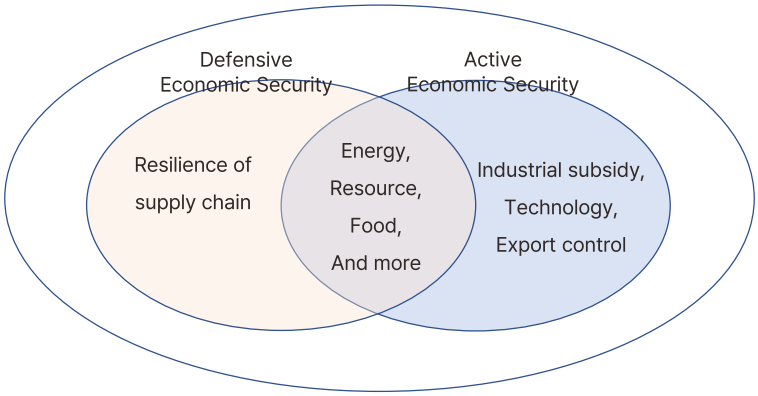
COVERAGE OF ECONOMIC SECURITY

COVERAGE OF ECONOMIC SECURITY



Knowledge Sharing Program

02 DE-RISKING RATHER THAN DECOUPLING

- DE-RISKING AT THE HIROSHIMA G7 SUMMIT
- INTERNATIONAL COOPERATION IN THE TIMES OF DE-RISKING
- PROTECTION FOR HIGH TECH

DE-RISKING AT THE HIROSHIAM G7 SUMMIT

- EU-initiated De-Risking
- Not much difference from de-coupling, in reality
- International cooperation for supply chain and core materials
- Protection for high tech
- Regional blocs between the West and the East

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INTERNATIONAL COOPERATION IN THE TIMES OF DE-RISKING

- Economic resilience and economic security based on de-risking
- Transition to clean energy economies
- Comprehensive export control, recognizing the central role of multilateral export control regimes in protecting high tech
- Launching of the Coordination Platform on Economic Coercion

Think7 JAPAN 2023 | G7 2023 HIROSHIMA SUMMIT

Think7 Japan Communiqué

April 2023

ADBInstitute
Asian Development Bank Institute

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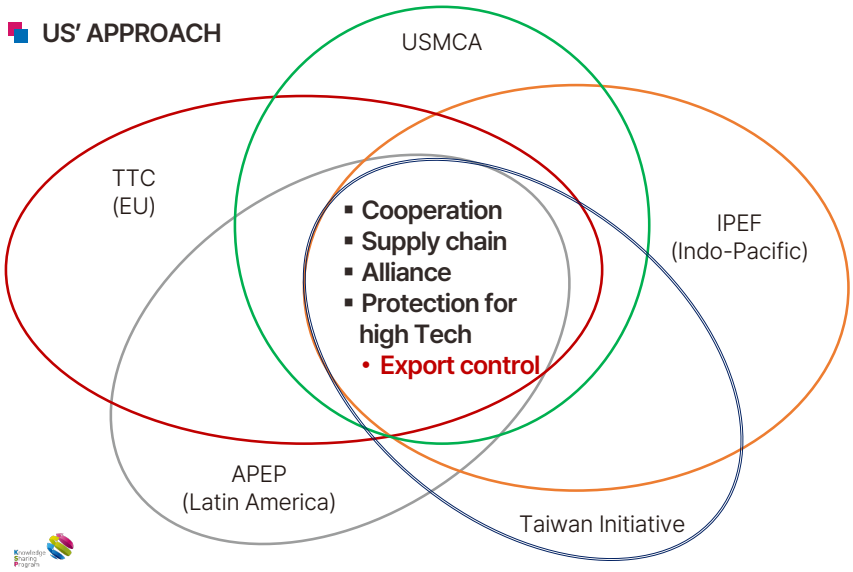
PROTECTION FOR HIGH TECH

US' APPROACH



"we cannot rely on Beijing to change its trajectory. So we will shape the strategic environment around Beijing to advance our vision for an open, inclusive international system."

03 ISSUES ON INTERNATIONAL COOPERATION

- RESILIENCE OF SUPPLY CHAIN
- EXPORT CONTROL
- INFRASTRUCTURE (PGII), SUSTAINABLE GROWTH, FINANCE
- WTO, CLIMATE CHANGE, ENERGY, FOODS, ETC.

INTERNATIONAL COOPERATION

The 4 PILLARS OF ECONOMIC DE-RISKING

Source: Ursula von der Leyen(2023), Speech on EU-China Relations. March 30, 2023.

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INTERNATIONAL COOPERATION

RESILIENCE OF SUPPLY CHAIN

- Friction of Global Supply Chains
  - Decline of Production Unbundling
  - Geopolitical Risk
- Evolving GSCs
  - Unbundling vs. Re-location
  - Trustable Supply Chain, Value-based Supply Chain
- Technology in the Context of Economic Security
  - Knowledge-Intensive GSCs
  - Effective Export Control

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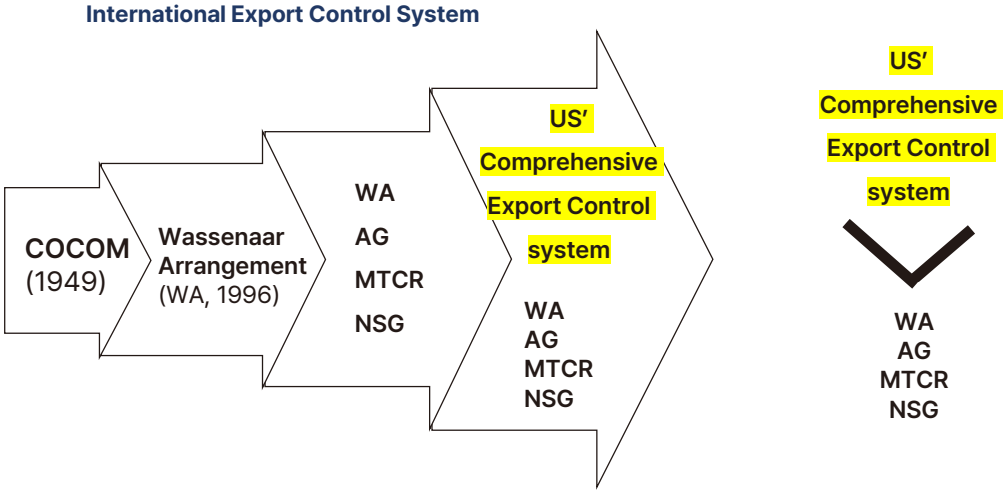
INTERNATIONAL COOPERATION

EXPORT CONTROL

International Export Control System



INTERNATIONAL COOPERATION

US' COMPREHENSIVE EXPORT CONTROL SYSTEM

- The United States' comprehensive export control system regulates many aspects of your economic activities.
- Although there are some overly strict measures, the United States is taking various measures to prevent technology leaks.
- Going forward, it was agreed to cooperate for strengthening export controls at the Camp David U.S.-Japan-Korea summit.
- In the future, major countries around the world may have to adopt a U.S.-style export control system.

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04 IMPLICATIONS FOR FUTURE KSP

- KOREA'S ECONOMIC SECURITY SYSTEM
- KNOWLEDGE SHARING PROGRAM (KSP) IN 20 YEARS

KOREA'S ECONOMIC SECURITY

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COMPREHENSIVE APPROACH

- Korea, one of high tech countries and 7th largest trading country in the world
  - Balanced Approach for Defensive as well as Active Economic Security Policies
- Resilience of Supply Chains
  - A Series of Acts and Measures for Supporting Supply Chains
  - National Committee for Materials, Parts and Equipment
  - https://www.sobujang.net/ 소부장 강국, KOREA SOBUJANG.net
- Export Control System
  - Korea Security Agency for Trade and Industry (KOSTI) kosti
    - The only public institution in the world dedicated to export control under government guidelines

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KNOWLEDGE SHARING PROGRAM (KSP) IN 20 YEARS

KSP in 20 Years

- Korea's foreign economic policy program, celebrating its 20th anniversary next year (2024).
- A basic channel for sharing Korea's successful economic development model and advising developing countries on economic policies and the establishment of important institutions.
- Recently diversifying partner countries and promoting public (GtoG) cooperation to spread the KSP brand image in the international community.
- KSP, now in its 20th year, needs to play a role in adapting and promoting the issues of economic security in the times of de-risking.
  - "Australia-Korea partnership on critical technology and digital economy" in the 22/23 KSP project

KNOWLEDGE SHARING PROGRAM (KSP) IN 20 YEARS

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KSP with Advanced Economies in the Economic Security Era

- Going beyond the existing cooperative relations, KSP must further develop connections with developing countries under an international cooperation program which meets the current economic and security era.
- In a situation where a new global trade order is being created, Korea must diversify its channels of cooperation with major countries around the world.
- Examples of key issues to be considered are resilience of supply chain and export control.


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Panel Discussion [Presentation 2]

Global Open Innovation and KSP Program in Industrial Transitions

Dong Hoon OH

Managing Director of Technology Policy, Office of Strategic R&D Planning

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GLOBAL OPEN INNOVATION AND KSP PROGRAM IN INDUSTRIAL TRANSITIONS

PRESENTER

DONG HOON OH

MANAGING DIRECTOR OF TECHNOLOGY POLICY, OFFICE OF STRATEGIC R&D PLANNING

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01 GLOBALIZATION AND ITS EFFECTS

WAVE OF GLOBALIZATION

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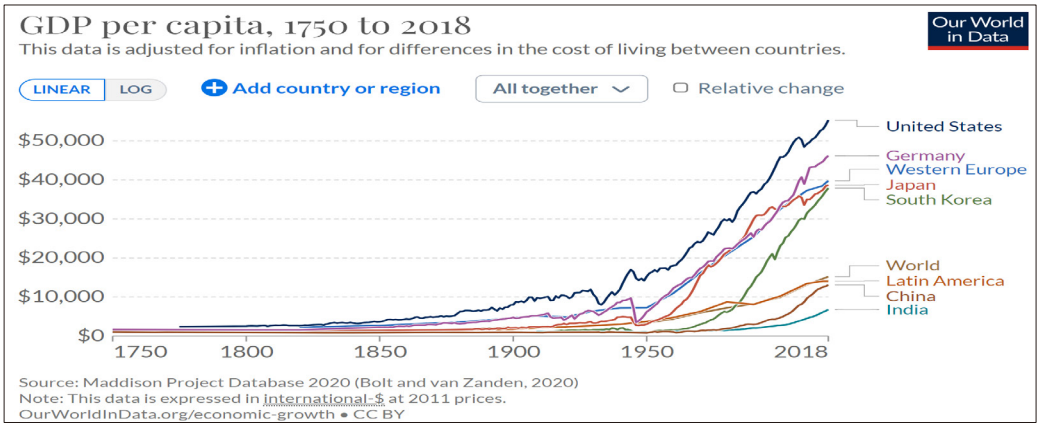
- GATT (General Agreement on Tariffs and Traded, 1947
- WTO (World Trade Organization, 1995), China (2001)



https://ourworldindata.org/grapher/gdp-per-capita-maddison?tab=chart&time=1750..latest&country=DEU~JPN~KOR~CHN~USA~IND~OWID_WRL

4

CHINA'S RISE TO MANUFACTURING SUPERPOWER

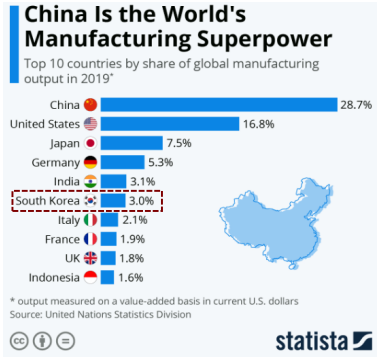
SHARE OF GLOBAL MANUFACTURING VALUE-ADDED

Large developing economies are moving up in global manufacturing

Top 15 manufacturers by share of global nominal manufacturing gross value added

Rank	1980	1990	2000	2010
1	United States	United States	United States	United States
2	Germany	Japan	Japan	China
3	Japan	Germany	Germany	Japan
4	United Kingdom	Italy	China	Germany
5	France	United Kingdom	United Kingdom	Italy
6	Italy	France	Italy	Brazil
7	China	China	France	South Korea
8	Brazil	Brazil	South Korea	France
9	Spain	Spain	Canada	United Kingdom
10	Canada	Canada	Mexico	India
11	Mexico	South Korea[1]	Spain	Russia[2]
12	Australia	Mexico	Brazil	Mexico
13	Netherlands	Turkey	Taiwan	Indonesia[2]
14	Argentina	India	India	Spain
15	India	Taiwan	Turkey	Canada

1 South Korea ranked 25 in 1980.
2 In 2000, Indonesia ranked 20 and Russia ranked 21.
NOTE: Based on IHS Global Insight database sample of 75 economies, of which 28 are developed and 47 are developing. Manufacturing here is calculated top down from the IHS Global Insight aggregate; there might be discrepancy with bottom-up calculations elsewhere.
SOURCE: IHS Global Insight; McKinsey Global Institute analysis



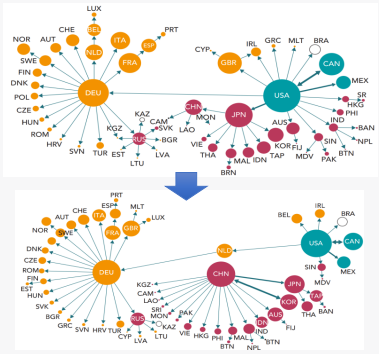
Manufacturing the future: The next era of global growth and innovation (McKinsey & Company, 2012) (https://time.com/wp-content/uploads/2015/03/manufacturing-the-future.pdf)

CHINA'S ECONOMIC RISING

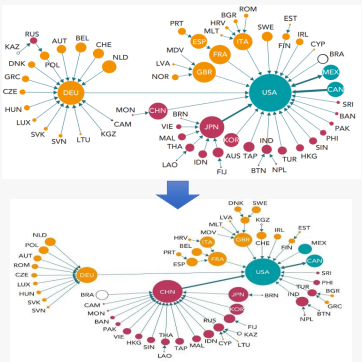
CHANGES IN GLOBAL SUPPLY CHAIN, 2000 vs. 2017

Over the last two decades, GVCs have reduced trade barriers, lowered the costs of transportation, created jobs for workers, and driven significant economic growth in developing countries.

Supply Hubs of Trade



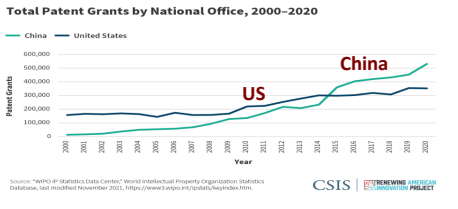
Demand Hubs of Trade

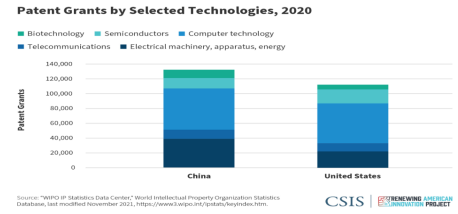


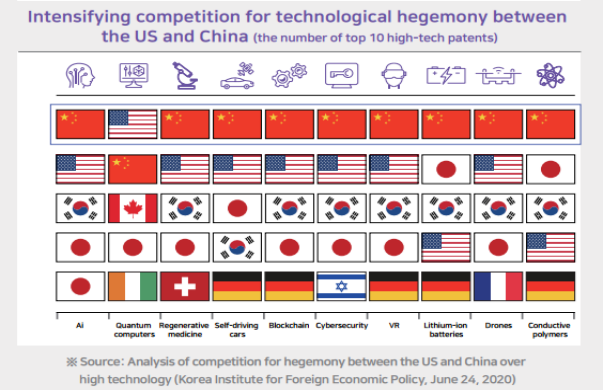
https://documents1.worldbank.org/curated/en/384161555079173489/pdf/Global-Value-Chain-Development-Report-2019-Technological-Innovation-Supply-Chain-Trade-and-Workers-in-a-Globalized-World.pdf

CHINA'S TECHNOLOGICAL RISING

ACCUMULATION OF TECHNOLOGY





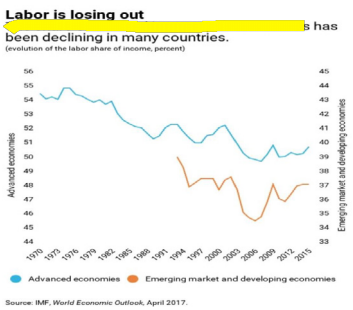


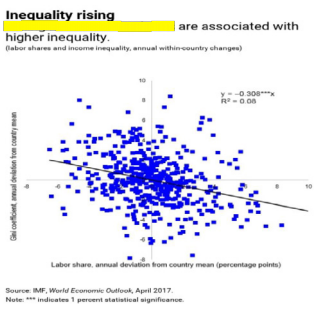
https://vdata.nikkei.com/newsgraphics/patent-wars/

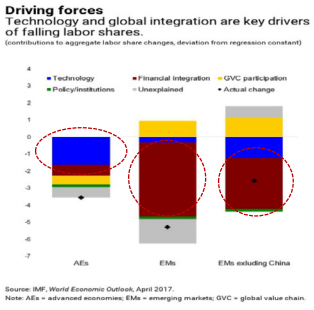
https://www.csis.org/analysis/what-can-patent-data-reveal-about-us-china-technology-competition

GROWING INEQUALITY

FAILING LABOR SHARES AND ITS DRIVER



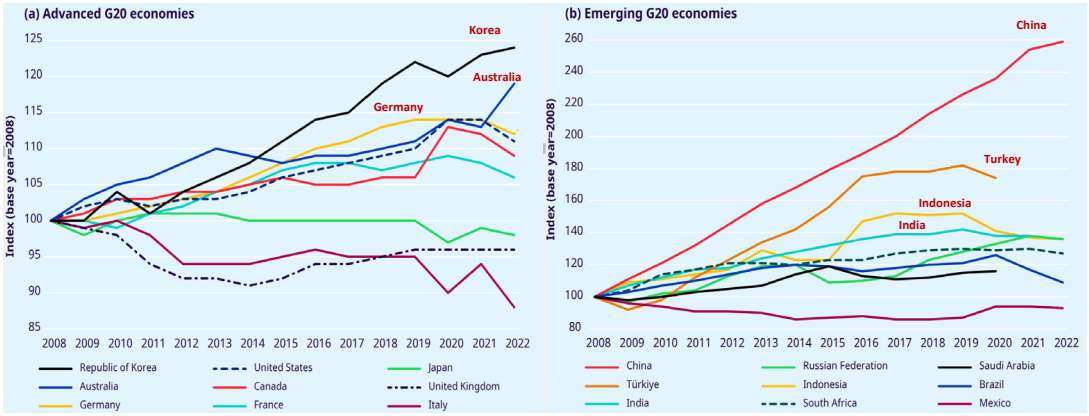




- Proportion of labor income is declining in advanced economies. Inequality in the society is deteriorating .
- Political Direction (USA): Expansion of 'China Exclusion' and 'Reshoring' to Restore Middle Class Income
- However, the bigger problem is 'acceleration of technological innovation (4th industrial revolution)
- 'China Exclusion' and 'reshoring' are not fundamental solutions
  https://www.imf.org/en/Blogs/Articles/2017/04/12/drivers-of-declining-labor-share-of-income

RISING GLOBAL LABOR WAGES

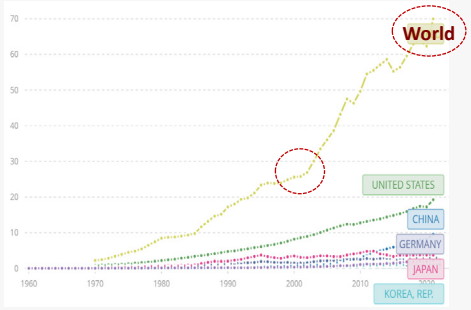
AVERAGE REAL WAGE INDEX FOR THE G20 COUNTRIES, 2008-2022



Global Wage Report 2022-2023
https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_862569.pdf

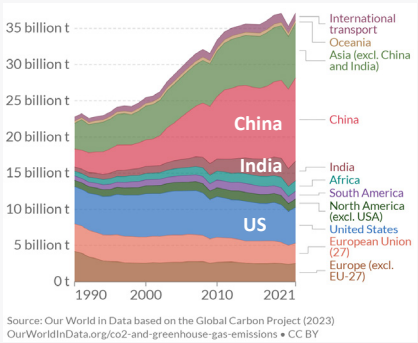
GLOBAL ENVIRONMENTAL PROBLEMS

FINAL CONSUMPTION EXPENDITURE (Trillion US$)



World Bank national accounts data, and OECD National Accounts data files.
https://data.worldbank.org/indicator/NE.CON.TOTL.CD?locations=CN-US-DE-JP-KR-IN-1W

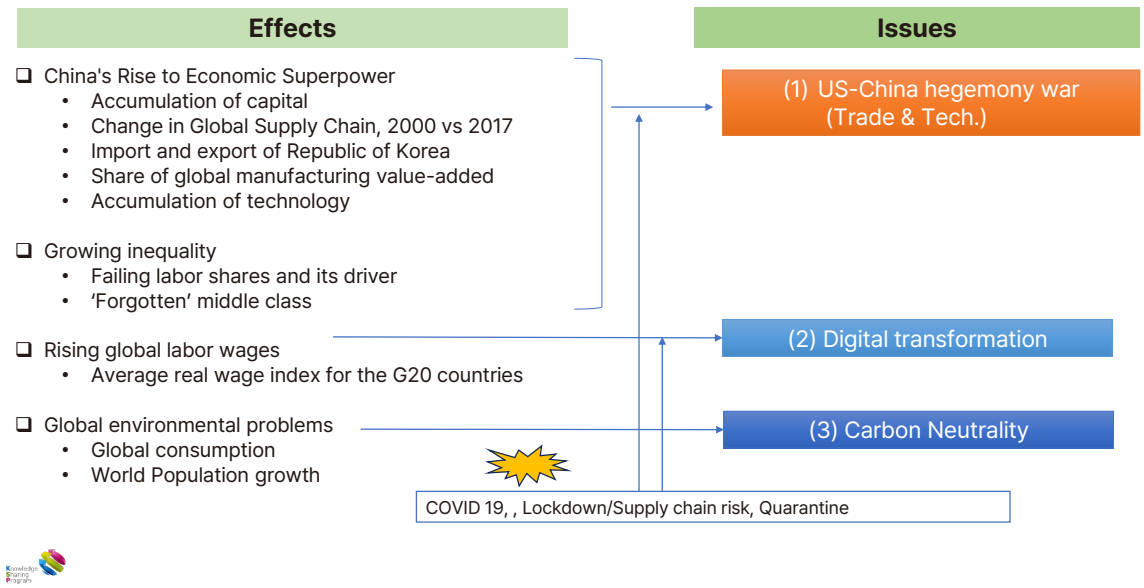
ANNUAL CO_2 EMISSIONS BY WORLD REGION



Source: Our World in Data based on the Global Carbon Project (2023)
OurWorldInData.org/co2-and-greenhouse-gas-emissions • CC BY

https://ourworldindata.org/co2-emissions

EFFECTS AND ISSUES FROM GLOBALIZATION



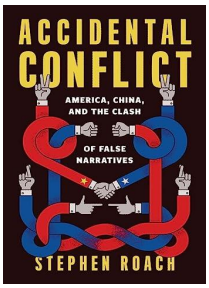
11

02 THREE ISSUES: HEGEMONY, DX, CARBON

US-CHINA HEGEMONY WAR

NATIONALIST POLITICS AND GEOPOLITICAL RISK

- Recently, the US and China have strengthened their nationalist politics.
- Expanding from a trade war to a high-tech war.
- China-Russia and Western world accelerates geopolitical rift sparked by Russian invasion of Ukraine.



(US)
- China is a strategic threat that is seeking to displace it as the world's leading power.
- China is engaging in unfair trade practices, stealing intellectual property, and militarizing the South China Sea.
- However, Roach argues that these actions are largely defensive in nature and that China is not seeking to challenge the United States militarily.

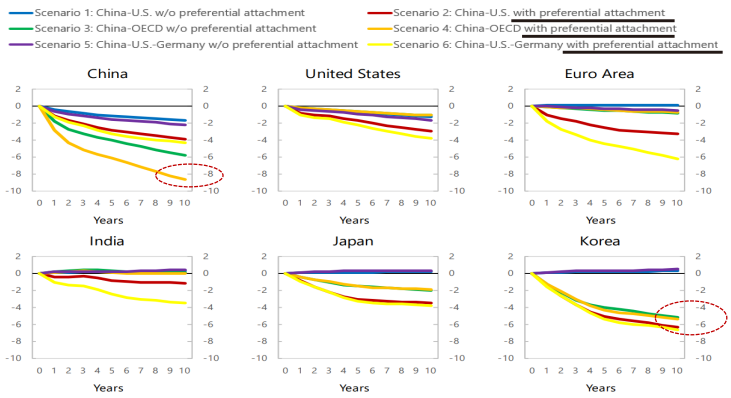
(China)
- US prevents China from becoming a global power.
- United States has imposed tariffs on Chinese goods, restricted Chinese investment in the United States, and supported pro-democracy movements in Hong Kong and Taiwan.
- However, Roach argues that these US actions are largely motivated by economic concerns.

Roach proposes a number of concrete steps that the two countries can take to improve their relationship, such as reducing tariffs, increasing investment, and cooperating on climate change.

US-CHINA HEGEMONY WAR

TECHNOLOGICAL DECOUPLING SCENARIOS: Real GDP for Selected Regions

Figure 8. Technological Decoupling Scenarios: Real GDP for Selected Regions
(Percent deviation from the IMF's October 2020 WEO)



1) All global technology hubs lose across scenarios, and losses are largest under preferential attachment.

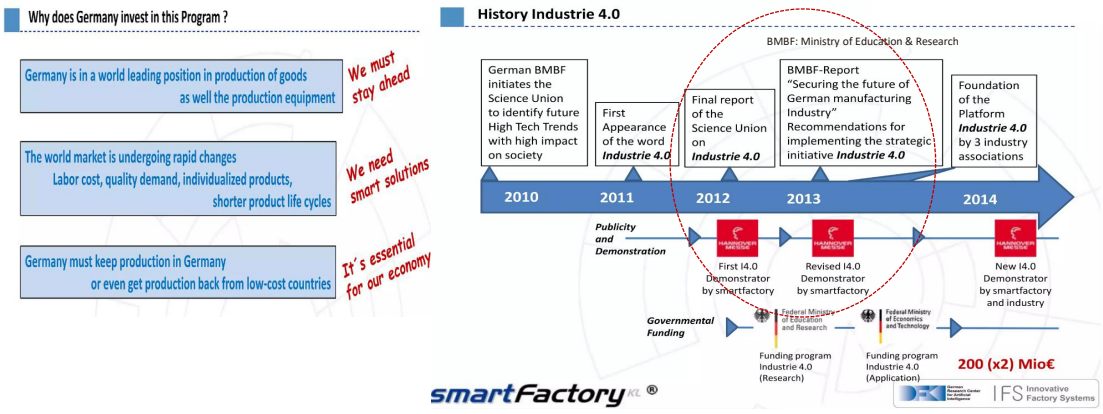
2) Technological fragmentation can lead to losses in about 5 percent of GDP for many economies.

3) China usually loses the most in each scenario reflecting very large effects through the trade and sectoral-misallocation channels.

IMF(2021) IMF 2021 Sizing Up the Effects of Technological Decoupling_IMF WP/21/69
https://www.imf.org/-/media/Files/Publications/WP/2021/English/wpiea2021069-print-pdf

DIGITAL TRANSFORMATION

GERMANY, INDUSTRY 4.0



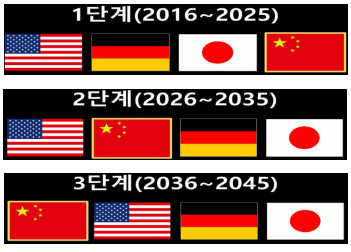
Industry 4.0 – the German vision for advanced manufacturing (2013)
https://www.slideshare.net/vinnovase/industry-40-the-german-vision-for-advanced-manufacturing

15

DIGITAL TRANSFORMATION

CHINA'S STRATEGY: INTEGRATION OF IT AND MANUFACTURING

- **By 2025**, the overall quality of Chinese manufacturing, innovation capacity and the integration of information technology (IT) into industry will **reach an advanced level**.
- **By 2035**, Chinese manufacturing will reach **an intermediate level among world manufacturing powers**.
- **By 2049**, China's manufacturing sector status will further consolidate and China will become **the leader among the world's manufacturing powers**.



Ten priority sectors

From Industrial Policy to National Industrial Strategy: An Emerging Global Phenomenon (Hemphill, 2020)

16

DIGITAL TRANSFORMATION

KOREA : D.N.A → Digital New Deal → Digital Platform Government

- Three core technologies for DATA, NETWORK, and AI
- The world's best digital platform government created with AI and data.

Stage 1 | Connecting Government System

Administrative | Judiciary | Municipalities

Stage 2 | Building DPG by Design

Reengineer government infrastructure and establish open standards and guidelines

Stage 3 | Transition to DPG Infrastructure

Digital Government As a Platform

Hyper-scale AI | Data Lake | API Hub

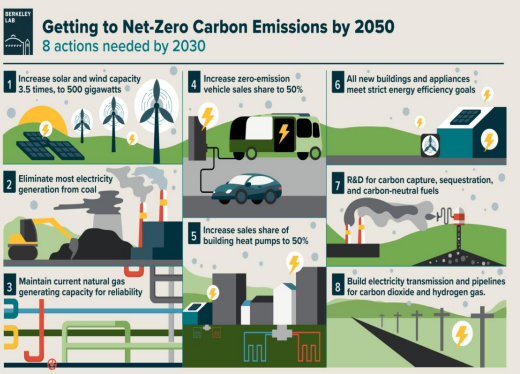
Public Cloud

CARBON NEUTRALITY

CARBON NEUTRALITY IS THE MOST IMPORTANT GLOBAL ISSUE

- The global response to climate change is the greatest cooperative task in which all countries must participate
- Carbon neutrality, trade, and industry are very closely linked

ROAD TO NET-ZERO

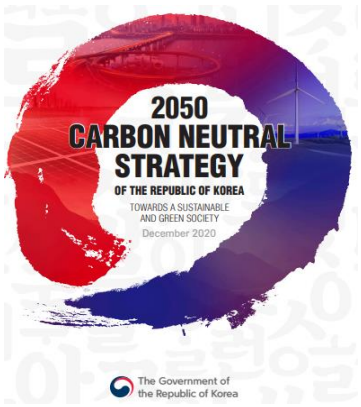


CARBON, TRADE, INDUSTRY

CARBON NEUTRALITY

KOREA'S CARBON NEUTRAL STRATEGY AND ESG MANAGEMENT

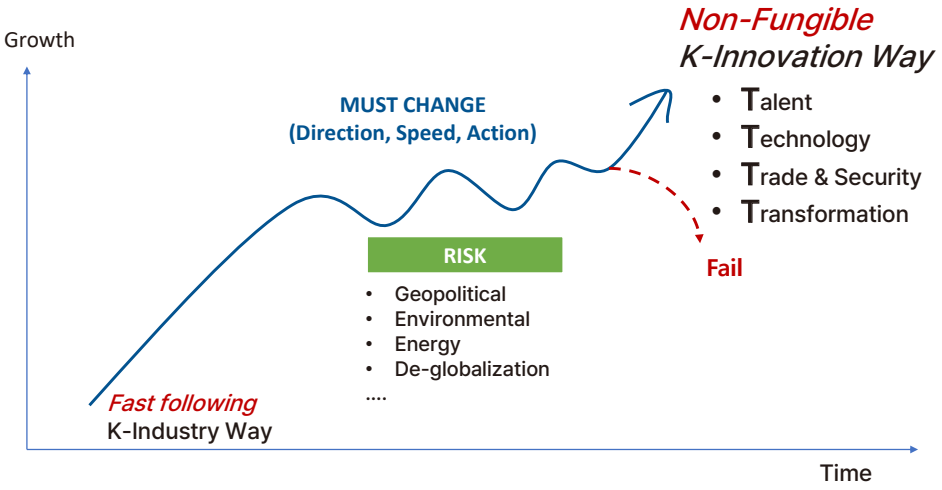
- (2050 NET-ZERO) Korean government declares to be carbon neutral by 2050.
- (ESG) Many Korean companies have declared ESG management, and over 150 companies, including Samsung Electronics, SK, and Hyundai Motor Comany, have joined RE100.



03 K-INNOVATION WAY

NON-FUNGIBLE K-INNOVATON WAY

TALENT, TECHNOLOGY, TRADE, TRANSFORMATION



CONNECTING KSP & "CHO-GYEK-CHA" PROJECT

MEGA-IMPACT R&D PROJECT (a.k.a. "Cho-Gyek-Cha *(Super Gap)*" projects)

- The Korean government selected promising technologies that are necessary to secure Korea's technological competitiveness.
- The government plans to invest with priority in these areas in the future.

[11 KEY INVESTMENT AREAS]

1. semi-conductor, 2. display, 3. battery, 4. mobility, 5. advanced materials, 6. advanced manufacturing,
7. intelligent robot, 8. aerospace/defense, 9. advanced bio, 10. next-gen atomic power, 11. new energy industry

OSP establishes each mission and selects technologies with public-private partnership.

139 candidate projects

CONNECTING KSP & "CHO-GYEK-CHA" PROJECT

Establish detailed implementation plans for each of 40 projects

- Each project includes a technology policy-level mission and specific goals to be achieved within 10 years.
- Each project prepares specific action plans on how to conduct research and development in terms of technology, researchers, and infrastructure..

What

- Set target of each project to achieve within 10 years
- Develop annual action plan regarding technology, business, human resources, infra, etc.
- Make a comprehensive plan including not only new project but also on-going ones

Who

Detailed action plan and program planning led by PMs

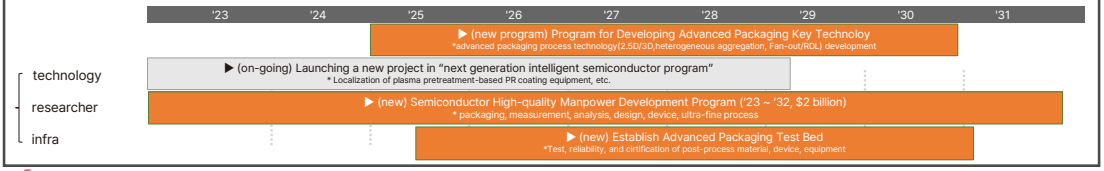
- Detailed action plan of each 40 projects (until Dec. 2023)
- Program planning to get next year budget according to action plan

[Ex. Contents of Action Plan]

Mission Fostering global top 10 advanced semiconductor post-processing company

Project Develop key technologies of semiconductor advanced packaging (less than 1㎛)

Target Securing 9 core technologies(10㎛ → 1㎛)



[REF] 34 MISSIONS AND 40 PROJECTS (EXAMPLE)

Funding Area		Mission	Project theme
Semi-conductor		• Emerging as a state-of-the-art system semiconductor powerhouse	• Development of compound power semiconductors • Autonomous driving (level 4 or higher) vehicle semiconductor (AP, controller , sensor) technology development
		• Global Top 10 Advanced Fostering a back-end process company	• Development of core base technologies (adaptation , double set , rewiring , etc.) for semiconductor advanced packaging (less than 1μm)
		• Strengthening the semiconductor supply chain to maintain super-gap competitiveness	• Advanced semiconductor (12- inch class) wafer materials/parts/equipment early commercialization demonstration minifab construction
Display		• Creating a new display market by aggressively expanding new form factors	• transparent, stretchable and ultra-realistic high-resolution (8k) displays
		• Inorganic light emitting display technology/standard/market preoccupation	• Ultra-small high-resolution (10k) and large-area high brightness (2,000nit) Quantum dot/micro LED inorganic light emitting display technology development
		• OLED manager Enhancing	• materials/parts/equipment (light emitting material , digital exposure machine, etc.) technology for commercialization of 8th generation (2200x2500mm) OLED
Secondary Battery		• Achieving a Super Gap in Lithium Secondary Battery Technology	• Commercial lithium secondary battery (silicon battery, etc.) energy density improvement (400Wh/kg class) material parts development and DT- based process innovation
		• Fostering a battery-based new industry ecosystem	• harmless recycling technology to vitalize the new battery industry (Baas)
		• Dominating the next-generation battery market	• future mobility Development of high-safety, ultra-light and high-density (all solid , lithium sulfur , lithium metal) secondary batteries
Future Mobility	Car	• Realization of the world's No. 1 in future car parts and equipment technology	• Electric/hydrogen vehicle future electrification parts (power train for high-speed rotation , fuel cell) development and cost reduction process (giant casting) technology development
		• Fully autonomous driving service and integrated SW development	• Integrated SW (OS, security , middleware , communication) technology development • Establishment of a self-driving service demonstration complex that can simulate real environments (tunnels , mountain roads , etc.)
	Shipbuilding	• the GX- leading shipbuilding industry ecosystem	• Eco-friendly alternative fuel (ammonia / hydrogen, etc.) Ship propulsion and carbon reduction
		• Production innovation and autonomous navigation service realization through DX	• Development of productivity improvement technology through digital conversion • Smart autonomous navigation (level 4) ship core technology (autonomous navigation , autonomous maintenance, etc.) development and demonstration
Advanced Materials		• Preemptive securing of promising materials tailored to the demand of future new industries	• future mobility, energy , and IT industries
		• carbon-neutral processes and materials	• Eco-friendly conversion of production process for core materials with high carbon emissions (hydrogen reduction steel, etc.) technology development • Development of carbon-neutral eco- friendly materials (white bio , biodegradation , recycling)
Intelligent Robot		• Leaping forward as a smart manufacturing robot powerhouse	• autonomous AI robots
		• Nurturing global hit intelligent service robots	• human life support (nursing care, etc.) service robot equipped with multiple intelligences (video, voice, language, and tactile senses)
Advanced Manufacturing		• Intelligent manufacturing system for unmanned factory realization	• factory-level digital twin (DT) -based process integration optimization AI solution
		• Manufacturing and service convergence new business creation	• Autonomous-based machinery/equipment development and advanced operation service (failure diagnosis, etc.) demonstration
Aerospace · Defense		• Preoccupying the market for future aircraft that can be used for both civil and military purposes	• 600kg class AAV (Advanced Air Vehicle) airframe and commercialization technology for both civil and military use
		• Securing strategic technology to pioneer the global aviation market	• Mingun Development of turboshaft engine and turbo generator technology applied with combined decarbonized fuel (SAF)
		• Securing Global Top-Tier Competitiveness for Aerospace and Defense Materials and Parts	• Aviation and defense industry material parts (carbon composite , aerospace structure) technology development
Next-generation Nuclear Power		• Leading the global supply chain for SMR nuclear power plants	• Development of technology • Development of new nuclear power plant innovative manufacturing technologies (electron beam welding technology , 3D printing, etc.)
		• Innovative nuclear power plant safety enhancement	• Nuclear power plant intelligent safety enhancement technology (monitoring/diagnosis/prediction) and damage minimization response technology development
Advanced Bio		• a global pharmaceutical / bio production base	• pharmaceutical/bio digital factory (continuous process, etc.) technology
		• of digital convergence high-tech bio super-gap foundation	• Development of personalized medicines and medical devices based on clinical and genomic big data
		• Driving new growth by securing digital health-based technology and creating an ecosystem	• Development and demonstration of digital remote health care service (daily recovery for severely ill patients, etc.)
Energy New Industry	Hydrogen	• - distribution - storage ecosystem for hydrogen industry No. 1	• Water electrolysis hydrogen production system (over 10MW) technology development and demonstration • Liquefied hydrogen maritime transport , bunkering and operation core technology development and demonstration
		• Leading the next-generation hydrogen power generation market	• Development of gas turbine hydrogen conversion core technology and combined power generation efficiency improvement technology
	Energy Efficiency	• Securing global competitiveness in building and industrial efficiency technologies	• Development and demonstration of low-carbon, high-efficiency electricity- based large -capacity (1000RT class) industrial heat supply technology (heat pump)
		• Nurturing the digital-based demand management market	• Development of interactive demand management smart energy platform linked to power grid using digital devices
	Renewable Energy	• Securing technology to preoccupy the world market for next-generation renewable energy	• Ultra-large extreme environment offshore wind power (over 20MW) technology development
		• ESS- based power grid flexibility enhancement technology	• Non-lithium/ non-battery long-cycle large -capacity (8 hours , over 100MW) ESS technology development
	Resource Circulation	• Establishment of advanced core mineral technology to secure energy resource supply chain	• Core minerals (nickel , lithium , rare earth) low-grade fuel resource recovery technology development

2023 Knowledge Sharing Program Dissemination Conference

04 CONCLUSION: KSP AS A PLATFORM FOR CO-INNOVATION

KSP FOR MILDDLE TECHNOLOGY COOPERATION

KSP ESPECIALLY COULD BE A GOOD PLATFORM FOR THE CO-DEVELOPMENT OF MIDDLE TECHNOLOGY

Advanced Technology

High Caliber Training

Invite excellent researchers from developing countries to conduct research in the Korean R&D system

Middle Technology

R&D Cooperation

KSP as a platform of joint R&D with Korea for the local market

Approperiate Technolgy

Co-capitalization

Co-capitalization through technological transfering and commericialization

Knowledge Sharing Program

THANK YOU

Hosted by 기획재정부 Ministry of Economy and Finance

Organized by KDI 한국개발연구원 Korea Development Institute 한국수출입은행 kotra 대한무역투자진흥공사

Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

Panel Discussion [Presentation 2]

Climate Actions, Bolstered by Global Regulation and Incentives for Climate Technology

Chae Woon OH

Principal Researcher, National Institute of Green Technology

Hosted by 기획재정부 Ministry of Economy and Finance

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CLIMATE ACTIONS, BOLSTERED BY GLOBAL REGULATION AND INCENTIVES FOR CLIMATE TECHNOLOGY

PRESENTER

CHAE WOON OH

PRINCIPAL RESEARCHER, NATIONAL INSTITUTE OF GREEN TECHNOLOGY

Hosted by 기획재정부 Ministry of Economy and Finance

Organized by KDI 한국개발연구원 Korea Development Institute, 한국수출입은행, kotra 대한무역투자진흥공사

CONTENTS

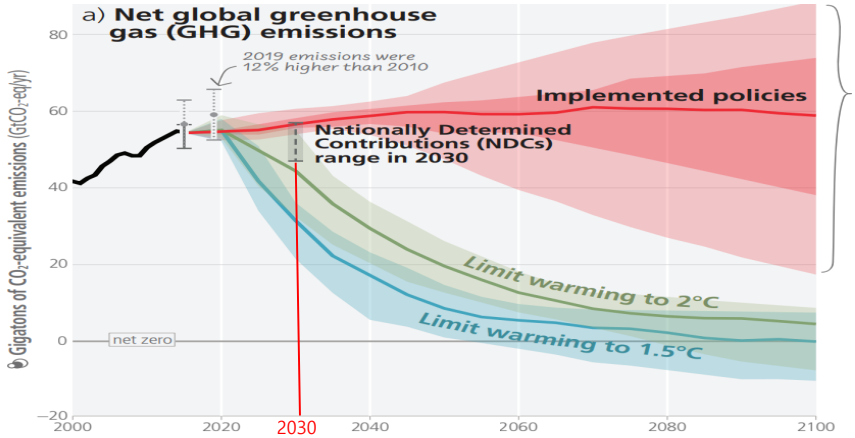
I. CLIMATE CHANGE & ACTIONS

- Global governance of climate change: Paris Agreement (2015)
  - Global temperature goal: 2°C & 1.5°C
  - National target : Nationally determined contributions (NDCs).

3

I. CLIMATE CHANGE & ACTIONS

- Diagnosis on the current climate actions
  - Policies (implemented as of 2019) result in projected emissions that lead to warming of 3.2°C.



Emission Gap
Between NDCs and Scenarios to limit warming to 1.5°C & 2°C

<Source: IPCC AR6 SYR Fig. SPM.5 panel a)>

4

I. CLIMATE CHANGE & ACTIONS

Expectation of future climate action

- Remaining carbon budget

Limiting global warming to 1.5°C	**500 $GtCO_2$** (50% possibility)
Limiting global warming to 2°C	**1,150 $GtCO_2$** (60% possibility)

- **Annual GHG Emission amount (in 2019): 59±6.6 $GtCO_2eq/yr$**

Realization of Necessity for Urgent Action: This decade

II. GLOBAL REGULATION

Diversification or Fragmentation of Global Regulation on Climate Change

- **Shift from a singular, comprehensive & multilateral environmental agreement to many climate clubs***
- **Industry has to face many layers of regulations, and government's coordinated support is crucial.**

UN-based institutions (Paris Agreement) + **Regional Import regulation** + **NGOs** + **National or international organizations** + **Countries**

Nation	Products	Companies	on Companies	on Nation
GHG emission reduction targets by 2030 through **Nationally determined contributions (NDC)** → **Sectoral GHG emission reduction target at the domestic level**	**EU Carbon Border Adjustment Mechanism (CBAM)** and **The US Clean Competition Act**	**RE100** As the global corporate renewable energy initiative to lead companies to commit to 100% renewable electricity	**Climate Disclosure rules** - G20's TCFD - The US SEC - ISSB - GRI, - EU's ESRS	**Bilateral FTAs, Indo-pacific economic framework** - Regional economic pact with climate regulations

** (climate clubs) Sub-global and regional cooperation*

III. INCENTIVES FOR CLIMATE TECHNOLOGY

Struggle over Technological Hegemony (or Sovereignty)

- (4th industrial revolution technology) Telecommunication network, AI, Quantum computing, Big data
- (Hegemonic struggle on Climate technologies to overcome climate change and transform industry)
  - (Types) Nuclear power, Battery, EVs, Solar power, Carbon capture, Hydrogen, etc
  - (Supply chain) Cooperation with allies and partner countries
  - (Invigoration of the US domestic climate technology industry)

R&D	Chips and Science Act (2022)	R&D support on new & basic technologies (carbon capture, nuclear power, energy storage)
Demonstration	Infrastructure Investment & Jobs Act(2021)	Demonstration support for new technologies (EV, clean hydrogen, battery, nuclear, CCUS, carbon capture, direct air capture, renewable energy)
Deployment	Inflation Reduction Act (2022)	Tax credit for the deployment of new technologies (photovoltaic panel, EVs, batteries, CCUS, DAC, electricity from nuclear power)

- These hegemonic struggle on climate technologies poses challenges (not only of export overseas but also of domestic R&D, demonstration, deployment and production at the domestic level).

7

IV. IMPLICATIONS

Global regulation on climate change: Complex, deepening, and going bottom-up

- High transaction cost of information acquisition and appropriate response to many rules
- Government's coordinating role, Support to small & medium sized companies
- Sharing of best practices of companies & governments' coordinated response
- Global cooperation on the standardization of rules

Incentives for climate technologies: New carbon neutral industry

- The US and developed countries' approach to technology to solve climate change and to transform to green economy.
- Government technology support to all the stages of technology cycle
- Technological gaps between developed and developing countries & Global technology cooperation on new climate technologies

8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Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

Panel Discussion [Presentation 2]

Sustainable Development and Knowledge Sharing - The World Bank and the KGGTF's Contribution

Richard DAMANIA

Chief Economist, Sustainable Development Practice Group,
World Bank Group

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SUSTAINABLE DEVELOPMENT AND KNOWLEDGE SHARING - THE WORLD BANK AND THE KGGTF'S CONTRIBUTION

PRESENTER

RICHARD DAMANIA

CHIEF ECONOMIST, SUSTAINABLE DEVELOPMENT PRACTICE GROUP, WORLD BANK

Hosted by 기획재정부 Ministry of Economy and Finance

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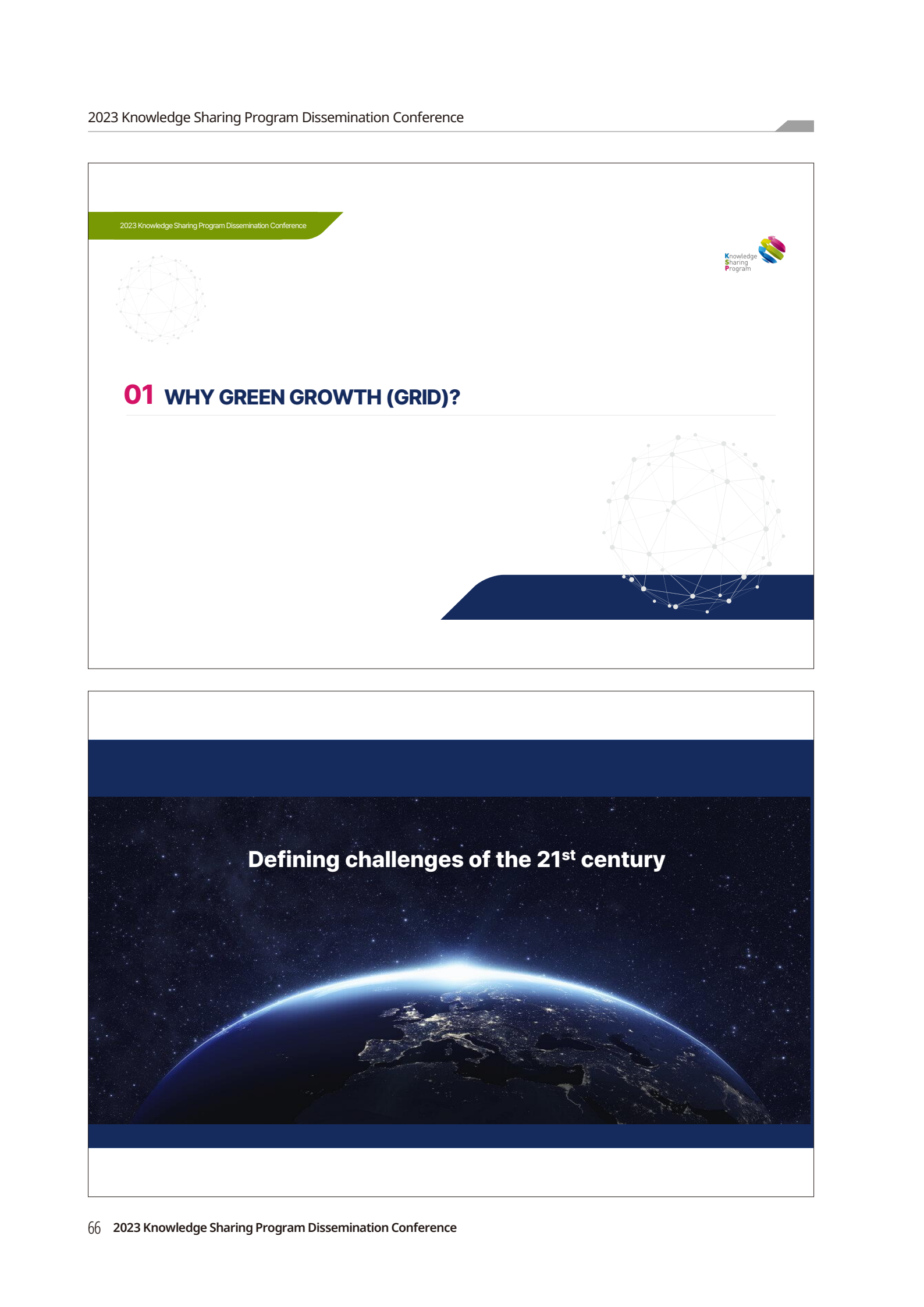
2023 Knowledge Sharing Program Dissemination Conference

Knowledge Sharing Program

01 WHY GREEN GROWTH (GRID)?

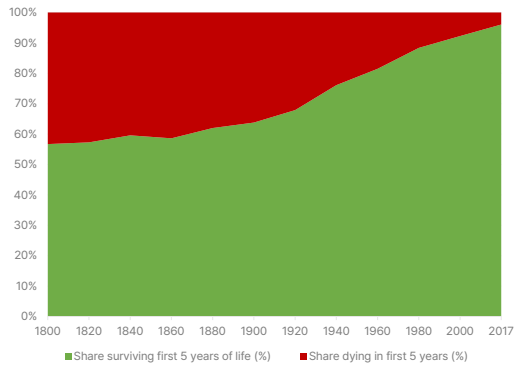


Challenge of sustainability

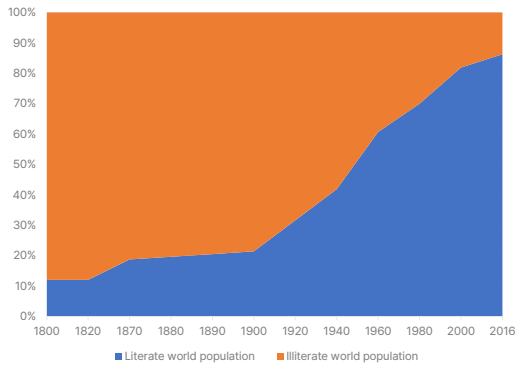
Can we grow by enhancing the environment, rather than degrading it?

ENORMOUS PROGRESS MEASURED BY HUMAN AND PHYSICAL CAPITAL

Plummeting Child (<5 years) Mortality Rates



Rising Literacy



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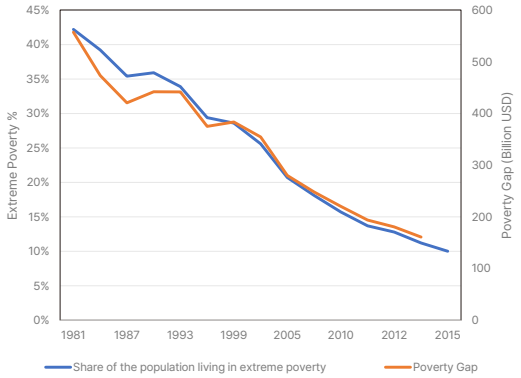
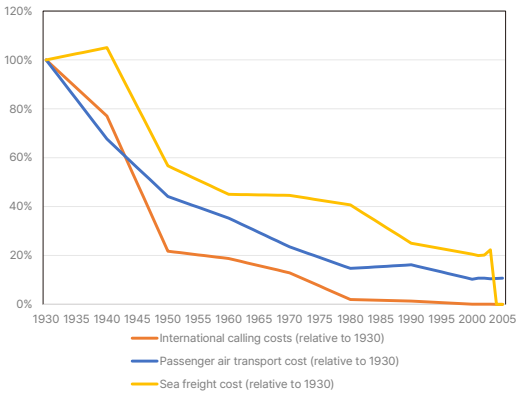
PROGRESS IN HUMAN AND PHYSICAL CAPITAL

Declining Poverty Rates



Declining Transport and Communication Costs

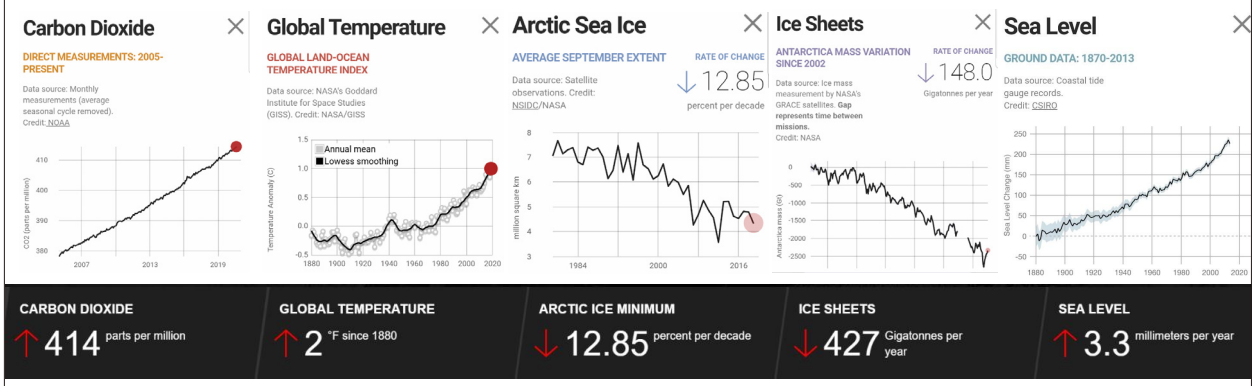


7

ALL EMASURES OF NATURE CAPITAL IN SECULAR DECLINE

8

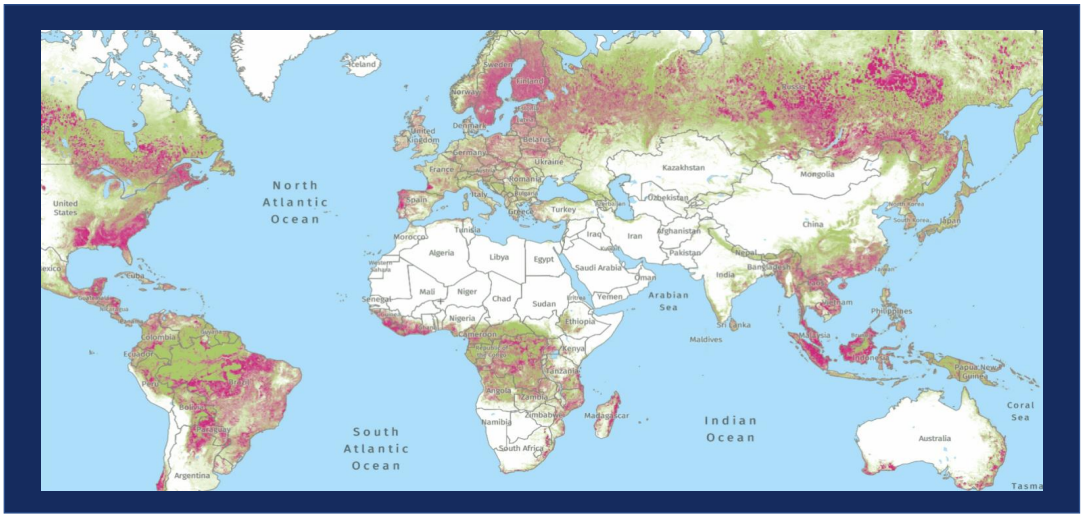
CLIMATE CHANGE – PLANET'S VITAL SIGNS DETERIORATING



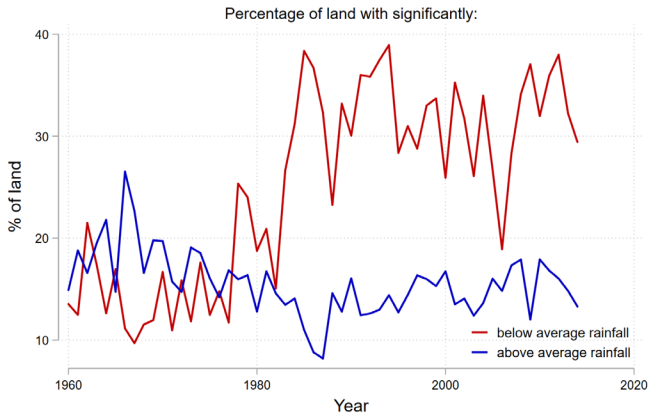
CARBON DIOXIDE	GLOBAL TEMPERATURE	ARCTIC ICE MINIMUM	ICE SHEETS	SEA LEVEL
↑ 414 parts per million	↑ 2 °F since 1880	↓ 12.85 percent per decade	↓ 427 Gigatonnes per year	↑ 3.3 millimeters per year

Source: NASA GISS

DEFORESTATION ACCELERATING



DRYING TREND HAS INCREASED (BY > 200% IN SOME REGIONS)



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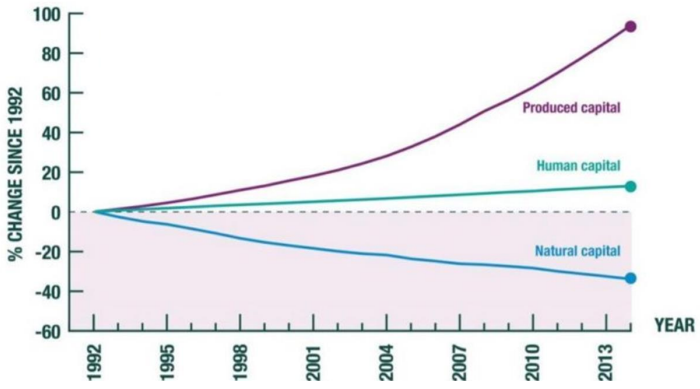
GLOBAL CAPITAL STOCKS PER CAPITA



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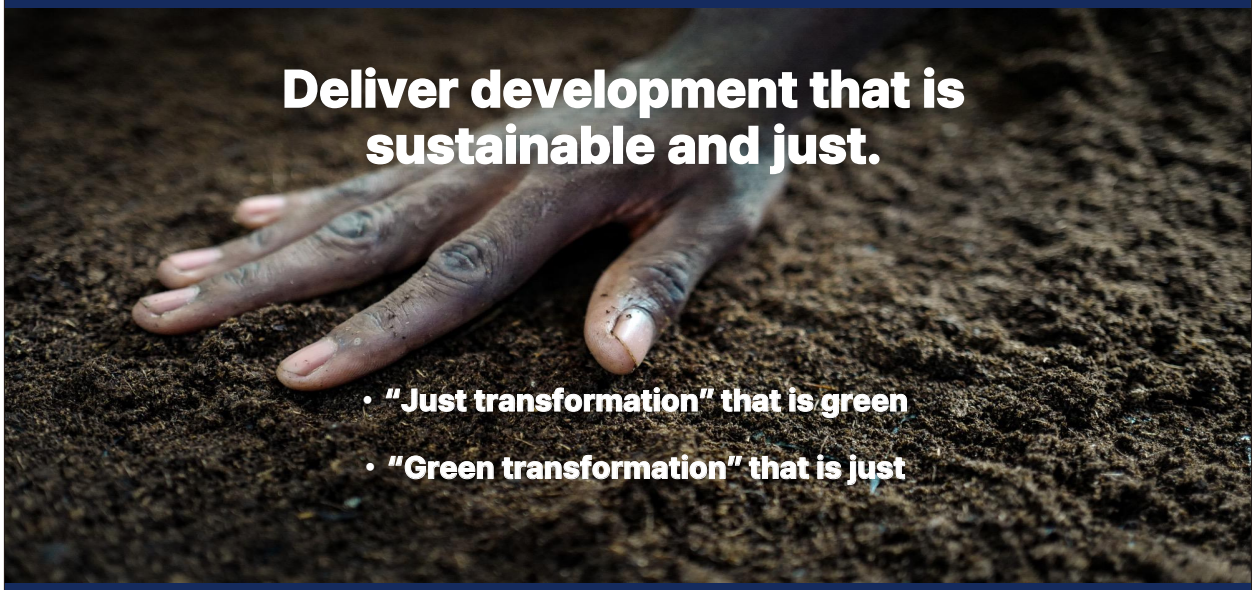
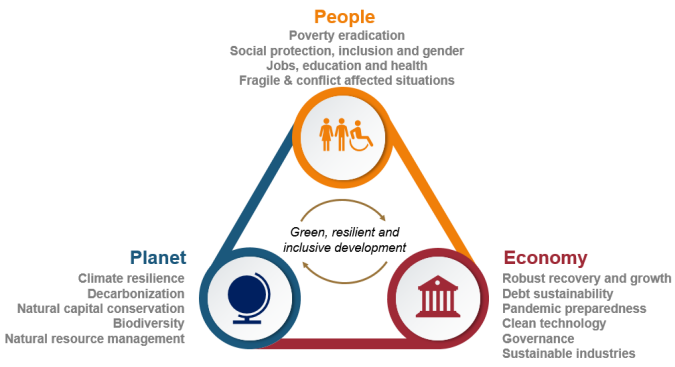


DEVELOPMENT ON A LIVABLE PLANET MUST RECOGNIZE INTERDEPENDENCIES

Not taking into account this interdependence leads to unbalanced development

Interrelated set of global challenges



ACHIEVE THIS AIM – BY GREENING SECTORS THROUGH

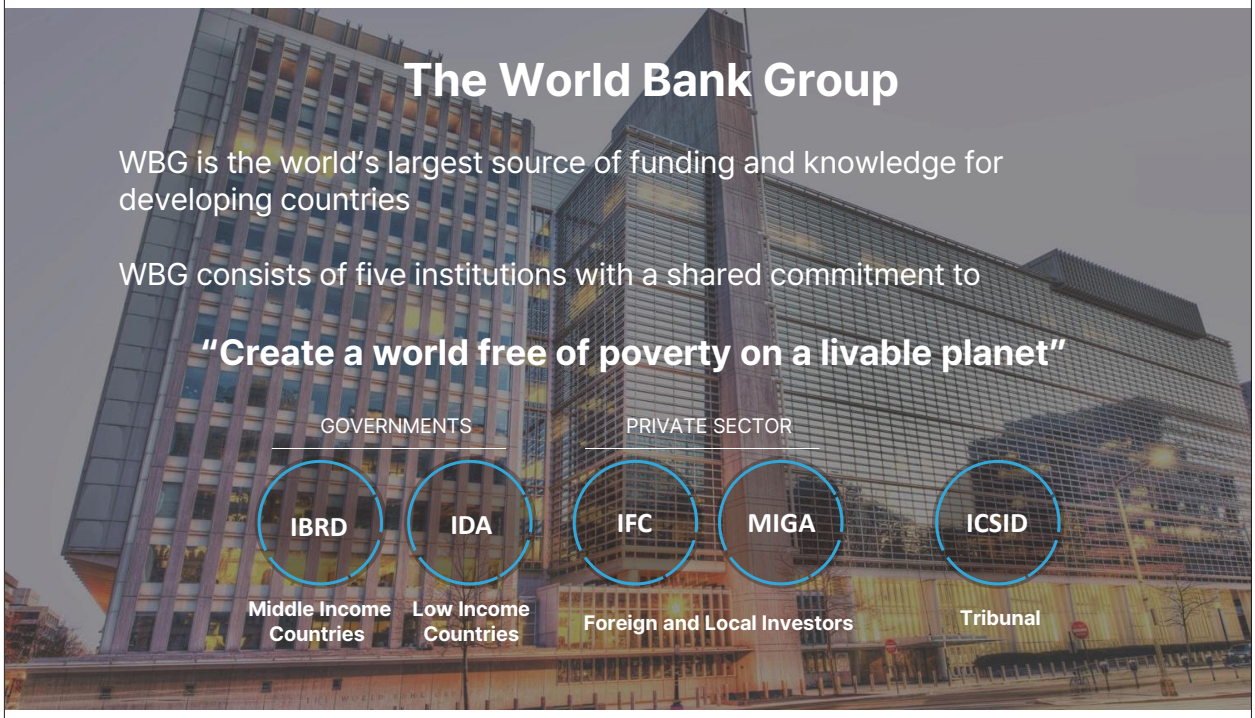
DIAGNOSTICS AND ANALYTICAL WORK

COUNTRY ADVISORY SERVICES

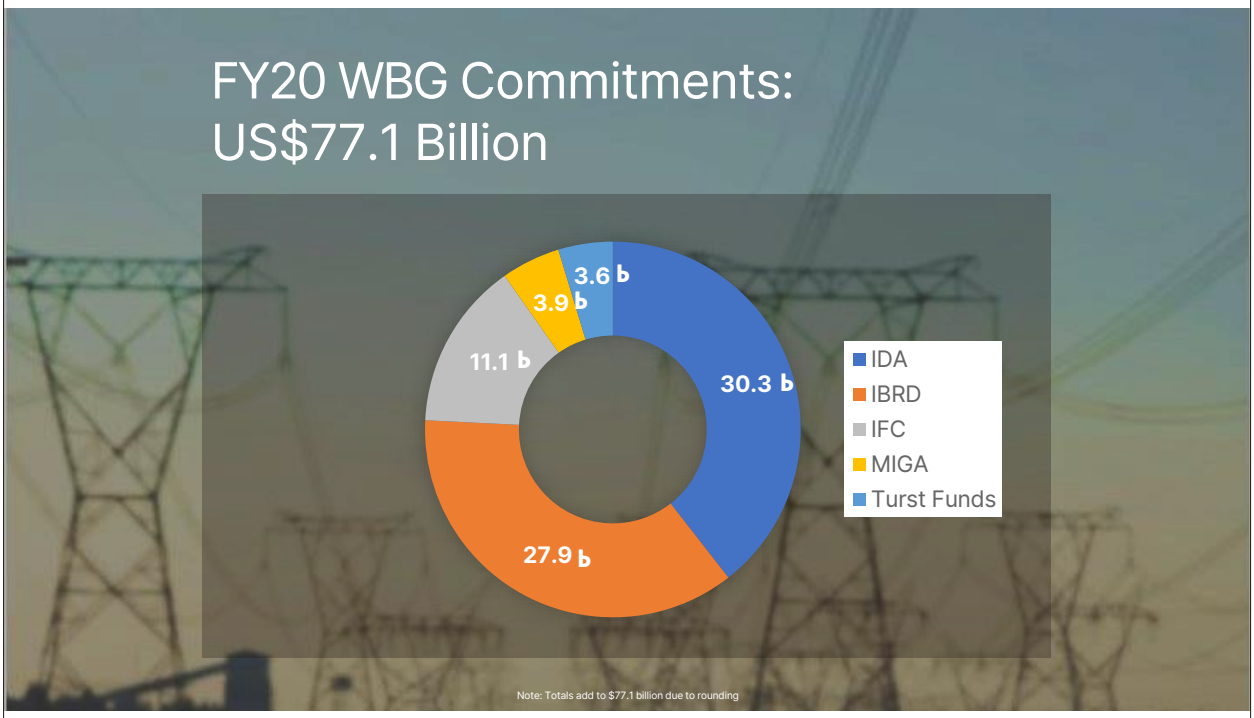
LENDING (‘OPERATIONS’)

15

02 WORLD BANK – KOREA GREEN GROWTH TRUST FUND


The World Bank Group
WBG is the world's largest source of funding and knowledge for developing countries
WBG consists of five institutions with a shared commitment to
"Create a world free of poverty on a livable planet"
GOVERNMENTS
PRIVATE SECTOR
IBRD
IDA
IFC
MIGA
ICSID
Middle Income Countries
Low Income Countries
Foreign and Local Investors
Tribunal


More than a Bank...
Loans
Knowledge
Collective Action



KOREA GREEN GROWTH TRUST FUND (KGGTF)

A visionary green growth partnership
between the World Bank and the Republic of Korea

The **only trust fund devoted to green growth** within the World Bank

- **7 Sectors**
- **10+ years of Green Growth Project Experience**
- **Leveraged $19B in lending**
- **Green Growth Tech/ Know-How**

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KGGTF GRANT PORTFOLIO BY SECTOR

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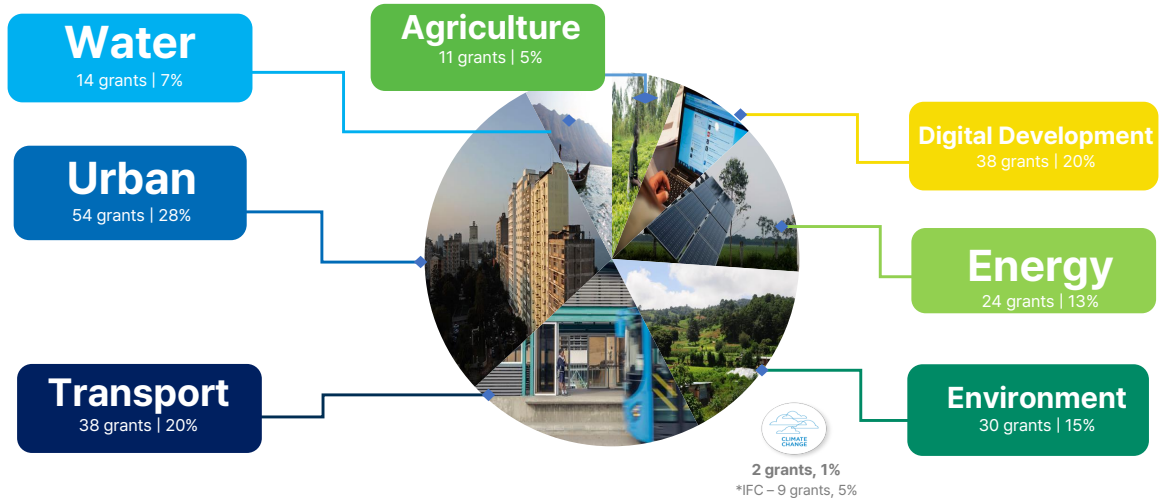

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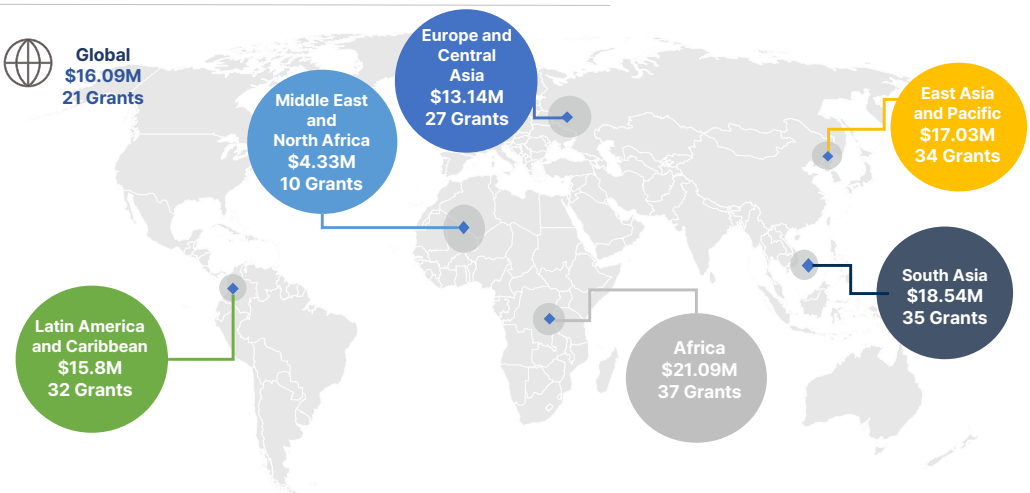
KGGTF GRANT PORTFOLIO BY REGION

2023 Knowledge Sharing Program Dissemination Conference



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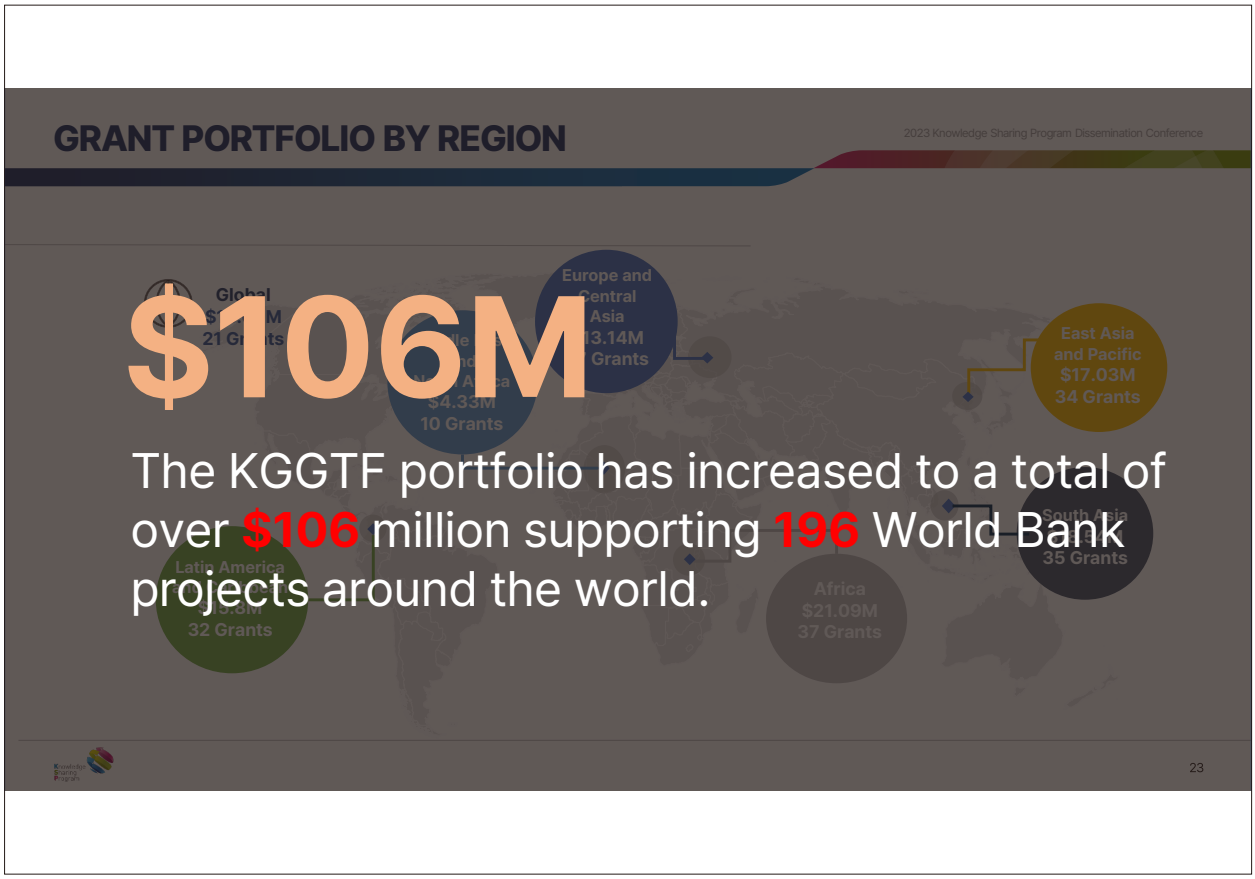
GRANT PORTFOLIO BY REGION
2023 Knowledge Sharing Program Dissemination Conference
$106M
The KGGTF portfolio has increased to a total of over $106 million supporting 196 World Bank projects around the world.
Europe and Central Asia
13.14M
Grants
East Asia and Pacific
$17.03M
34 Grants
$4.33M
10 Grants
South Asia
35 Grants
Latin America
32 Grants
Africa
$21.09M
37 Grants
23


MOBILIZATION OF INVESTMENTS
2023 Knowledge Sharing Program Dissemination Conference
$106M
KGGTF grant support
The KGGTF leveraged
over $19B
in WB lending
$19B
World Bank Lending
24

GREEN GROWTH PILLARS

Mobilization of Investments

Green Growth Policies

Capacity & Knowledge

Partnerships

KGGTF OUTCOMES IN YEAR 2022

Mobilization of Investments

- 53% grants increased WB investments
- 50%+ grants influenced external investments
- Additional $3B in WB lending leveraged
- $876M of climate co-benefits

Green Growth Policies

- 50%+ grants influenced GG policies
- 50%+ grants influenced WB GG strategies
- 40 GG policy reports delivered

Capacity & Knowledge

- 69% grants increased client's capacity
- 43% grants Knowledge Exchanges (KEs) with Korea
- 2,546 individuals, 103 Korean agencies attended
- 63% grants Capacity Building with 5,307 beneficiaries

Partnerships

- 69% grants partnerships and collaborations
- 72% grants partnerships with 136 agencies
- Partnerships with 75 Korean agencies

GREEN GROWTH POLICIES

2023 Knowledge Sharing Program Dissemination Conference

GRID

- Support the World Bank to develop a comprehensive diagnostic to support the implementation of GRID strategy in 45 + countries
- At least 9 influenced CPF, CCDR, SCD

GREEN
RESILIENT, AND
INCLUSIVE
DEVELOPMENT

Green Mobility

- Building innovative tools to support the municipal authorities to foster greem mobility strategies in Siem Reap and Lao PDR

THE RISE FRAMEWORK

STEP

- Egypt Smart Technology and Energy Efficient Production program to reduce industrial energy consumption

RISE

- The diagnostic is based on an assessment of a country's performance across 4 key pillars of development: Resilience, Inclusion, Sustainability, and Efficiency (RISE)

CAPACITY, KNOWLEDGE & PARTNERSHIPS

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3918
Knowledge Exchange Recipients

146
Partnerships with Korean agencies

5382
Capacity Building Beneficiaries

327
Project-level Collaborations

CONCLUSION

- **Challenge of Sustainability:** Can we achieve growth that enhances the environment rather than degrading it?
- **Necessity of Sustainable and Just Development:** Our goal is to deliver development that is both sustainable and just.
- **Recognition of Interdependencies in Development:** Development on a livable planet must acknowledge the intricate interconnections between various aspects.

CONCLUSION

2023 Knowledge Sharing Program Dissemination Conference

- **Path to Development on a Livable Planet:** Achieving development on a livable planet becomes attainable only when investment financing is bolstered by green growth policies, capacity building, knowledge, and partnerships, as embraced by KGGTF.
- **Investment financing alone will not be sufficient** for developing countries to embark on a sustainable development path.
- **Crucial Role of Global Partnerships:** Forging partnerships across the globe for knowledge sharing and capacity building is essential to conquer the defining challenges of the 21st century.
- **Inaugurating a Significant Step:** The knowledge-sharing partnership between KSP and WB-KGGTF will mark a monumental initial stride toward collective progress.

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Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

The Key Achievements of KSP

Moderator

Jung Wook KIM

Executive Director, Center for International Development(CID),
Korea Development Institute(KDI)

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Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

The Key Achievements of KSP [Indonesia]

Establishment of Certification System for Discovering and Fostering Technological Innovation Type SMEs in Indonesia

Siti AZIZAH

Deputy Minister of Entrepreneurship,
Ministry of Cooperatives and SMEs, Indonesia

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ESTABLISHMENT OF CERTIFICATION SYSTEM FOR DISCOVERING AND FOSTERING TECHNOLOGICAL INNOVATION TYPE SMEs IN INDONESIA

PRESENTER

MRS. SIZI AZIZAH
DEPUTY MINISTER OF ENTREPRENEURSHIP
MINISTRY OF COOPERATIVES AND SMEs REPUBLIC OF INDONESIA

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2023 Knowledge Sharing Program Dissemination Conference

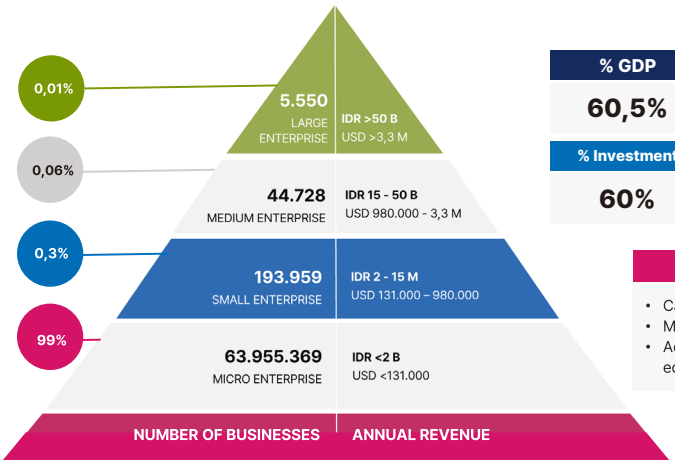
01 INDONESIA MSMEs & ENTREPRENEURSHIP PROFILE

- STRUCTURE OF MSMEs IN INDONESIA
- ENTREPRENEURSHIP DEVELOPMENT FRAMEWORK

STRUCTURE OF MSMEs IN INDONESIA

2023 Knowledge Sharing Program Dissemination Conference

STATISTICS OF INDONESIAN MSMEs



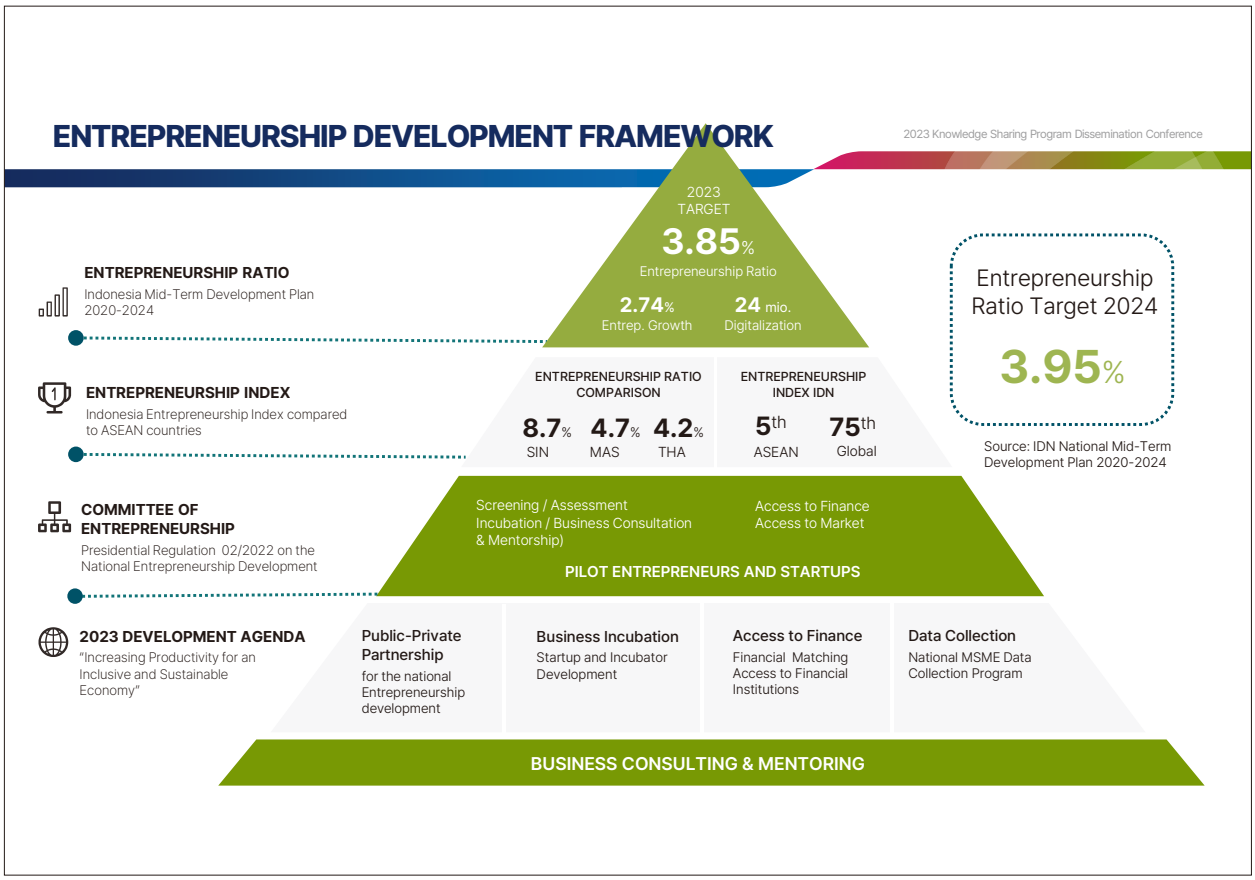
Source: Ministry of Cooperatives and SMEs, 2021

% GDP	% Employment	% Labor Force	% Entrep. Ratio
60,5%	99%	97%	3,35%*
% Investment	**% Export**	**% GVC Ratio**	**% Entrep .Growth**
60%	15,6%	4,1%	9,41%*

Challenges Faced by MSMEs

- Capital and financial access
- Market access and promotion
- Access to raw materials and equipment
- Digital literacy & skills
- Business formalization
- HR capacity & productivity

*) SAKERNAS BPS, as of February 2023


ENTREPRENEURSHIP DEVELOPMENT FRAMEWORK
2023 Knowledge Sharing Program Dissemination Conference
2023 TARGET
3.85%
Entrepreneurship Ratio
2.74%
Entrep. Growth
24 mio.
Digitalization
ENTREPRENEURSHIP RATIO
Indonesia Mid-Term Development Plan 2020-2024
ENTREPRENEURSHIP INDEX
Indonesia Entrepreneurship Index compared to ASEAN countries
COMMITTEE OF ENTREPRENEURSHIP
Presidential Regulation 02/2022 on the National Entrepreneurship Development
2023 DEVELOPMENT AGENDA
"Increasing Productivity for an Inclusive and Sustainable Economy"
ENTREPRENEURSHIP RATIO COMPARISON
8.7% SIN
4.7% MAS
4.2% THA
ENTREPRENEURSHIP INDEX IDN
5th ASEAN
75th Global
Entrepreneurship Ratio Target 2024
3.95%
Source: IDN National Mid-Term Development Plan 2020-2024
Screening / Assessment
Incubation / Business Consultation & Mentorship)
Access to Finance
Access to Market
PILOT ENTREPRENEURS AND STARTUPS
Public-Private Partnership
for the national Entrepreneurship development
Business Incubation
Startup and Incubator Development
Access to Finance
Financial Matching
Access to Financial Institutions
Data Collection
National MSME Data Collection Program
BUSINESS CONSULTING & MENTORING


2023 Knowledge Sharing Program Dissemination Conference
Knowledge Sharing Program
02 OVERVIEW OF 22/23 KSP IN INDONESIA
• 22/23 KSP IN INDONESIA OVERVIEW: SUBJECT
• 22/23 KSP IN INDONESIA OVERVIEW: TIMELINE

OVERVIEW OF 22/23 KSP IN INDONESIA

22/23 KSP IN INDONESIA PROJECT OVERVIEW (SUBJECT & TIMELINE)

Establishment of Certification System for Discovering and Fostering Technological Innovation Type SMEs

1 Designing certificate system to support innovative SMEs: **F&B**	2 Designing certificate system to support innovative SMEs: **Dairy**	3 Operation plan of technology innovation type SMEs certification system

Feb. 2023	20-28 Feb. 2023	26-31 Mar. 2023	23-26 May 2023
Project Negotiation, Pre-Consultation & Survey	Launching Seminar & High-Level Meeting in Jakarta	Policy Seminar & In-Depth Study in Jakarta	Interim Reporting Seminar & Workshop in Korea

6-13 Jun. 2023	18 Jul. 2023	Sep. 2023
Pilot Test for Evaluation Index	Final Reporting Seminar in Jakarta	Final Editing & Publication Preparation

Knowledge Sharing Program

03 KEY RESULT OF 22/23 KSP IN INDONESIA

- SUMMARY OF KEY RESULT SUBJECT 1-2
- SUMMARY OF KEY RESULT SUBJECT 3
- POLICY RECOMMENDATION

KEY RESULT OF 22/23 KSP IN INDONESIA

SUMMARY OF RESEARCH KEY RESULT

Key Result - Subject 1 - 2

- **Training of Local Experts**
  Training of 3 Local Experts on the certification system and mechanism of KSP Evaluation Index
- **In-Depth Interview & Public Hearing**
  In-depth interviews with 12 MSMEs to gather opinions and feedback on the evaluation index questions. Public hearing with 50 MSMEs (F&B and Diary) to explain the evaluation index.
- **Pilot Test & Confirmation of Evaluation Index**
  Pilot test undertaken by 25 MSMEs shows that **11 MSMEs (44%) are eligible for the certification**. Confirmation of 55 items of Evaluation Index for F&B and 33 items for Dairy.
- **Vitalization Plan for Evaluation Index**
  Separating Operation for **Pre-INNOBIZ Certification**(for micro & small enterprises) and **INNOBIZ Certification** (for medium enterprises).

Key Result - Subject 3

- **Establishing Mid to Long Term Strategic Goals & Roadmap**
  Establishing **16 Tasks** for the operation of the INNOBIZ Certification with **6 Priority Tasks** based on the strategic importance and ease of performances.
  1. Divide roles & responsibilities among participating organisations
  2. Training experts (assessor and consultants)
  3. Establishment of certified company management system & agency
  4. Establishment of benefits companies participating in certification
  5. Establishment of tech-based evaluation& assurance system
  6. Preparing supporting regulation for certification system
- **3 Stages of Implementation Roadmap**
  Stage 1: Short-Term (2024-2025) – Preparation Period
  Stage 2: Mid-Term (2026-2027) – Expansion Period
  Stage 3: Long-Term (2028-2030) – Establishment & Beyond

KEY RESULT OF 22/23 KSP IN INDONESIA

2023 Knowledge Sharing Program Dissemination Conference

ROADMAP IMPLEMENTATION STAGES

Short Term

Building the Foundation for the INNOBIZ Certification System

- Division of roles and responsibilities of participating organizations
- Preparation of Indonesia-type certification system and certification operation regulations
- Establishment institutional benefits for certification participating companies
- Establishment of a certified company management system and agency
- Establishment of technology-related evaluation and assurance system
- Training of experts and consultants

Mid Term

Diffusion and Stabilization of Authentication

- Preparing conditions for growth of micro and startup companies through the introduction of Pre-INNOIBZ
- Priority selection of industries and step-by-step expansion of industries subject to certification
- Introduction of R&D activation programs within the company
- Establishment of Technology Innovation Center in connection with KOICA ODA project
- Establishment of INNOBIZ certification online system

Long Term

Advancement of Certification System & Expansion of Performance

- Advancement of mid- to long-term master plan and roadmap for certification system operation
- Establishment of legal grounds such as laws and regulations for the operation of technological-innovative SMEs
- Operation of Technology Innovation Academy for training of practitioners
- Promotion of regular technology exchange activities with Korean companies
- Establishment and operation of the "National Industrial Technology Innovation Committee

KEY RESULT OF 22/23 KSP IN INDONESIA

2023 Knowledge Sharing Program Dissemination Conference

POLICY RECOMMENDATION

1. **Establishing Legal and Regulation for the Operation of Indonesia-Typed INNOBIZ Certification**
   Preparing new regulation as a legal basis for the operation of Indonesia INNOBIZ certification.
2. **Designating Operation and Management Agency for the INNOBIZ Certification**
   Assigning a dedicated agency for the implementation of INNOBIZ Operation and Management Agency.
3. **Separate Operation for Pre-INNOBIZ and INNOBIZ**
   Micro and Small Enterprises are subject to Pre-INNOBIZ and Medium Enterprises are subject to INNOBIZ
4. **Establishing of Technology Guarantee System for SMEs**
   Introducing technology-innovation capabilities through Technology-Innovation Systems and Individual technology levels, as well as providing Guarantee Loan Benefits to INNOBIZ companies through tech-guarantee system.
5. **Promotion of Technology Exchange Program with Korean SMEs**
   Promoting technology exchange with Korea through Technology Transfer Program and Joint Venture, etc.

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Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

The Key Achievements of KSP [Paraguay]

Consulting on the Medical de Device Control System and Certification Scheme

An Accidental Success

Jose Anibal GIMENEZ KULLAK

Director General, Ministry of Industry and Commerce, Paraguay

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CONSULTING ON THE MEDICAL DE DEVICE CONTROL SYSTEM AND CERTIFICATION SCHEME

AN ACCIDENTAL SUCCESS

PRESENTER

JOSE ANIBAL GIMENEZ KULLAK
DIRECTOR GENERAL, MINISTRY OF INDUSTRY AND COMMERCE, PARAGUAY

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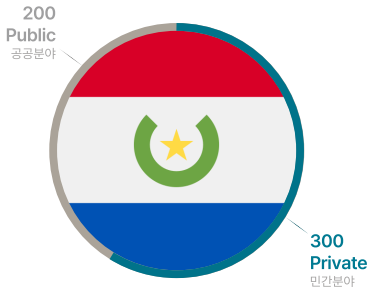
CONTENTS

OBJECTIVES OF THE PROJECT

- International cooperation project that provides customized policy proposals to the partner country, based on Korea's experiences and knowledge.
- Fostering Paraguay's medical industry by improving the certification system
- The size of the domestic market is small, so we want to develop it as a strategic export industry.

CURRENT SITUATION OF THE MEDICAL PRODUCTS INDUSTRY IN PARAGUAY

파라과이 의료산업 현황



Domestic market 파라과이 국내 시장

500 millones USD

미화 약 5억 US$

Exports (Latin America)

50 millones USD

라틴 아메리카 대상 수출 : 미화 약 5천만 US$

Total number of pharmaceutical companies (22)

33 laboratories

전체 제약회사 수: 33개소(22개 회사)

Number of Health Institutions

1,100

전체 의료기관 수 : 1,100개 기관

Number of pharmacies

1,000

전체 약국 개수 : 1,000개소

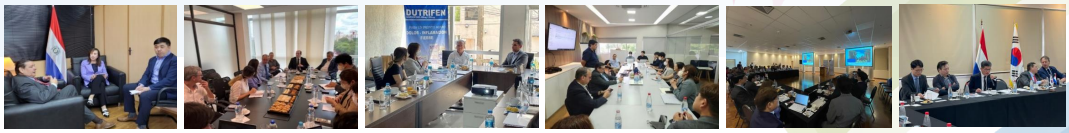
Total number of doctors

Más de 11,000

전체 의사 수: 11,000여 명

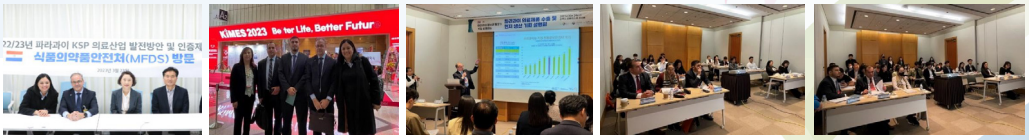
ON SITE VISIT TO PARAGUAY

- 9 pharmaceutical laboratories
- Government's Office (MIC / DINAVISA)
- Chamber of pharmaceutical manufactures
- Seminar



VISIT TO KOREA

- Government's Regulator (MFDS). Proposal of MOU
- Chamber of pharmaceutical and medical device manufactures
- KIMES 2023
- Seminar (presentation on regulatory procedures and investment opportunity)



FINAL SEMINAR

- Presentation of results to public and private sector
- Next steps
- MOUs signing

SUGGESTIONS FOR FUTURE DEVELOPMENT OF PARAGUAY'S MEDICAL INDUSTRY

파라과이 의료산업의 미래 발전 비전 제안

- To diversify the supply chain of Paraguay's medical products, it is necessary to create a supply-friendly regulatory environment that allows the proactive entry of foreign companies into the market.
  파라과이 내 의료제품의 공급망의 다양화를 위해서는 외국의 기업들이 자체적으로 시장 진입을 할 수 있도록 공급에 유리한 규제 환경을 조성하는 것이 필요함
- Subsequently, it will be necessary to establish a system so that the regulatory authority of Paraguay can carry out quality management and monitoring..
  이후, 파라과이 규제기관에서 품질 관리 및 사후관리를 할 수 있도록 시스템 구축 필요

SPECIAL THANKS

We express our sincere gratitude to the Ministry of Economy and Finance (MOEF), Ministry of Food and Drug Safety (MFDS), KOTRA and SYNEX.

Knowledge Sharing Program

Thank you very much

감사합니다.

Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

The Key Achievements of KSP [Rwanda]

Enhancing Institutional Capacities for Facilitating the Use of Internationally Transferred Mitigation Outcomes(ITMO) through Electric Mobility

Claude K. GANZA

First Counselor, Embassy of Rwanda to the Republic of Korea

Hosted by 기획재정부 Ministry of Economy and Finance

Organized by KDI 한국개발연구원 Korea Development Institute | 한국수출입은행 THE EXPORT-IMPORT BANK OF KOREA | kotra 대한무역투자진흥공사

ENHANCING INSTITUTIONAL CAPACITIES FOR FACILITATING THE USE OF INTERNATIONALLY TRANSFERRED MITIGATION OUTCOMES(ITMO) THROUGH ELECTRIC MOBILITY

PRESENTER

CLAUDE K. GANZA
FIRST COUNSELOR
EMBASSY OF RWANDA TO THE REPUBLIC OF KOREA

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CONTENTS

KSP-RELATED NATIONAL PLANS

National Transport Policy and Strategy 2021

Policy Direction:

- Develop required infrastructure to facilitate electric mobility **(under development);**
- Put in place incentives to facilitate investment in electric mobility **(Now in place);**
- Establish a protocol of cooperation with countries and companies to facilitate technology transfer related to electric vehicles **(KSP is the starting point for this cooperation).**

Update Nationally Determined Contribution (NDC),2020

Under Mitigations and Condition measures:

- The e-mobility programme plans for the phased adoption of electric buses, passenger vehicles (cars) and motorcycles from 2020 onwards, resulting in displaced conventional vehicle sales, transport fuel imports and associated GHG emissions.

Rwanda's Carbon Emission Trading and Readiness Framework under the Article 6 of Paris Agreement

The development of the framework is ongoing to:

- Propose governance arrangements of the carbon trading in Rwanda;
- Assess the legal and regulatory frameworks for carbon market in Rwanda;
- Develop guidelines for the implementation of article 6 of Paris Agreement in Rwanda.

ELECTRIC MOBILITY IN RWANDA

- The Government of Rwanda, through National Transport Policy and Strategy 2021, has prioritized the transition to e-mobility for all vehicle types using a combination of incentives and favorable policies designed to promote the uptake of electric vehicles.
- However, due to the high capital cost involved with the purchase of electric buses, public transport has largely been isolated from the electric vehicle penetration that has occurred across motorcycles and cars.

Fiscal Incentives

- Electric vehicles, spare parts, batteries and charging station equipment are tax exempted
- Electricity tariff for charging stations are capped at the industrial tariff level

Non-Fiscal Incentives

- Rent free land for charging stations (for land owned by Government);
- Free license and authorization for commercial Electric Vehicles

OUTCOMES OF KSP

- Increased knowledge and understanding on ITMO concepts to address the current barriers of high costs associated with public transport infrastructure and procurement of electric buses;
- improved institutional capacity of e-mobility and ITMO through the knowledge exchange of e-mobility technologies and regulatory framework;
- Establishment of infrastructure and environmental policies related to e-mobility and ITMO;
- Action plans for developing and implementing programs or project that actively promote understanding of ITMO;
- Action plans for promoting market of electric mobility technologies and Rwandan Government cooperation regarding ITMO;
- Policy implications applicable to not only public transports but also other types of vehicles.

ACTION PLANS FROM KSP

- Cooperation plan for establishing legal and institutional requirements to use Internationally Transferred Mitigation Outcomes (ITMO) through electric mobility;
- Set a clear GHG mitigation roadmap for the transportation sector;
- Explore the provisions of Article 6. 2 of Paris Agreement to addressing the current barriers of high costs associated with public transport infrastructure and procurement of electric buses through the mobilization of climate finance from ITMO;
- Promote research on technology, policies and regulations that are related to ITMO and e-mobility in Rwanda;
- Research on Rwanda's potential e-mobility projects or programs linking to ITMO.

KEY LEARNINGS FROM KSP

- Through ITMO the GoR can benefit to get funding for investment in infrastructure, Unlock the financial barrier for e-mobility through Article 6 and Transition into active projects;
- There are Lots of opportunities for public and private sector in the use of ITMOs;
- There is a need of enhancing International ITMO cooperation and GHG mitigation programs that related to Rwandan Private Sector and Government of Rwanda;
- The transition to e-mobility for all vehicle types requires the use of advanced technology for next generation of electric mobility, charging infrastructure and related policies and regulations;
- There is a need to promote research on technology, policies and regulations that are related to ITMO and e-mobility in Rwanda.

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THANK YOU

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Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

Luncheon Session [Presentation 1]

Introduction to KSP Private Sector Project Proposal Program

Duk Hwan JANG

Manager, Korea Trade-Investment Promotion Agency(KOTRA)

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INTRODUCTION TO KSP PRIVATE SECTOR PROJECT PROPOSAL PROGRAM

PRESENTER
DUK HWAN JANG
MANAGER, KOREA TRADE-INVESTMENT PROMOTION AGENCY(KOTRA)

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CONTENTS

01. BACKGROUND AND OBJECTIVES

Ministerial Meeting
on International Economic Affairs
Item⊙ Agenda(Resolution)

KSP Advancement Strategy to Expand Korea's Soft Power

2021. 9.

[방향 1] K-소프트파워의 성과 가시화

❶ **(민간·정부부처 사업제안제)** 전문성을 갖춘 **기업** · NGO · **유관 부처**에서 **관심분야 자문주제를 제안**할 수 있는 창구 신설

* (현행) 협력국 제출수요 중 주제선정 → 민간·정부부처에서 관심 주제 제안이 어려움

- 민관의 **사업 참여 유인 제고** + 우리기업의 **현지 네트워크**

[Direction 1] Materialize the Achievements of Korea's Soft Power

1. (Private & Public Sector Project Proposal Program) Create a channel for **companies, NGOs, and relevant ministries and agencies** with expertise **to propose consultation topics in their areas of interest**

* (Current) Topics are selected based on the needs of partner countries → makes it difficult for the private sector or government ministries to propose topics in their areas of interest

- **Increased motivation for participation** by public/private sector entities + Help Korean private sectors to **build local networks** and **expand cooperation opportunities with partner countries**

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01. BACKGROUND AND OBJECTIVES

We will take a "Push" stance, transitioning from solely relying on the needs of partner countries to proactively discovering new projects and proposing them to partner countries. We will proactively identify project business opportunities for which Korean companies can work with the partner countries.

[Existing] Focus on Proposal from Partner Countries

AS-IS : Pull Stance

Partner Countries → Application

ODA projects requested based on partner countries' needs

Focused on projects proposed by partner countries
Restricts linkage with subsequent projects after policy proposal

[Improvement] Accept Proposals from the Private Sector & Government Agencies

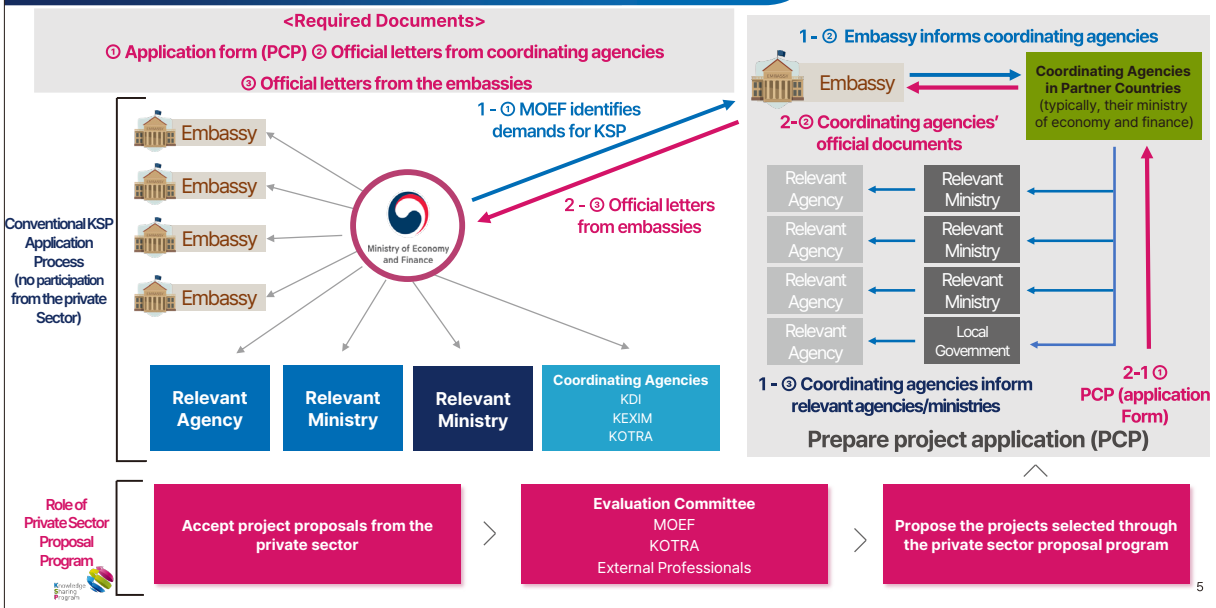
TO-BE : Push Stance

Korean Companies / Korean Government Agencies → Propose channels to identify new public & private projects → Propose KSP Projects to Partner Countries → Official Application

A "Push" structure for identification and development
where Korean companies, government or implementing agencies can lead the efforts to **identify and develop new projects based on Korea's strengths**
and apply through coordination with partner countries

4

02. CURRENT KSP APPLICATION PROCESS AND USE OF PRIVATE SECTOR PROJECT PROPOSAL PROGRAM



03. KSP PRIVATE SECTOR PROPOSAL PROGRAM: CALL FOR PROPOSALS

Knowledge Sharing Program (KSP)

- Since 2004, through sharing South Korea's economic and social development experiences and knowledge with the international community, the international cooperation project aims to enhance the innovation capacity of partner countries, promote sustainable development, and foster global collaboration.
- To expand cooperation opportunities between Korean companies and partner countries, <KSP Private Sector Project Proposal Program> was launched in 2022, where Korean companies participate in KSP projects early on in the planning phase. We ask for active participation from public agencies and private companies

01 Purpose of Project

- Institutionalize early participation in KSP projects by businesses in the planning phase; diversify projects by adopting the "supplier proposal model".
- Promote KSP projects to make Korean private sector cooperate with other countries

02 Types of Project

Type	Detail
1 Policy & Technology Consultation	Comprehensive plan/master plan for each area, system and institution establishment measure, etc.
2 Pre-Feasibility Test	Pre-feasibility study before a main feasibility test
3 Others	Other types of cooperation under bilateral consensus

03. KSP PRIVATE SECTOR PROPOSAL PROGRAM: CALL FOR PROPOSALS

03 Project Period & Budget

- **Project Period**: 1 year
- **Project Budget**: KRW 200-400 million per project

※ Project periods and budgets are finalized after project selection.

04 Evaluation Criteria

Suitability

- Consider Korea's experience of comparative advantages
  - Relevance to Korea's major policies and agendas
  - ODA Priority Partner Countries, CPS target countries.

Project Content & Implementation Capacity

- Planning quality; likelihood of official acceptance by partner countries; cooperation system between proposing agencies and cooperating agencies

Expected Outcomes

- Application of Consultations
  - Possible linkage with subsequent projects* through KSP projects
  - Expand cooperation opportunities between Korean companies and agencies and partner countries

03. KSP PRIVATE SECTOR PROPOSAL PROGRAM: CALL FOR PROPOSALS

05 Project Topics

① Development Plan	⑩ Environment
② Macroeconomy & Finance	⑪ Water Resource
③ Finance	⑫ Rural Development
④ Industry	⑬ Healthcare & Hygiene
⑤ Trade	⑭ Social Welfare
⑥ Corporate Policies	⑮ Education
⑦ Science and Technology (ICT, Communication)	⑯ Public Administration & E-Government
⑧ Land & Transportation	⑰ Employment & Labor
⑨ Energy	⑱ Others (Culture, Tourism, etc.)

06 When and How to Apply

- **Application period**

March 6 ~ May 12, 2023

- **Application Process**

Application process and required documents will be announced on the KOTRA and KSP Websites during the application period.

03. KSP PRIVATE SECTOR PROPOSAL PROGRAM: CALL FOR PROPOSALS

07 Project Selection Process

ODA Country ※ 2025/2026

1 Proposal Submission	2 Review	3 Coordination with Partner Country and Application	4 ODA Review & Approval	5 Selection of Implementing Agency	6 Project Operation
(N-2) by 2nd week of May	(N-2) by 4th week of Jul.	(N-2) Aug.–Nov.	(N-1) 2024	N) Second Half of 2025	(N+1) by Nov. 2026
(KOTRA) Receive proposals	(MOEF) Review proposals * Notify selected proposals	(Proposing Agency) Submit proposals to partner country and complete application process * Through cooperation with KOTRA	Review and final approval by International Development Cooperation Committee	(Proposing Agency) Participate in KONEP bidding process	(Bid winner, Coordinating agency)

Non-ODA Country ※ '24/'25

1 Proposal Submission	2 Review	3 Coordination with Partner Country and Application	4 ODA Review & Approval	5 Selection of Implementing Agency	6 Project Operation
(N-1) by 2nd week of May	(N-1) by 4th week of July	(N-1) Sep - Nov	(N) 2024 Jan	(N) Second Half of 2024	(N+1) by 2025 Nov
(KOTRA) Receive proposals	(MOEF, KOTRA) Review proposals * Notify selected proposals	(Proposing Agency) Submit proposals to partner country and complete application process * Through cooperation with KOTRA	(MOEF) Final approval of project	(Proposing Agency) Participate in KONEP bidding process	(Proposing Agency, KOTRA)

Note

- (When project requires urgency due to its nature or because the project is currently promoted by the partner country) **May be considered for implementation in 2024/2025 through fast KSP application** * Please specify the reasons on the application
- **Finalizing the project proposal (draft) does not mean the proposing agency will be selected as the implementing agency of the project** The proposing agency must apply for participation in KONEPS's open competitive bidding process in 2025 and the second half of 2026.

04. EXPECTED OUTCOMES OF PROJECT PROPOSAL PROGRAM

1. Review Projects	2. Boost Competitiveness in Bidding Processes	3. Lay the Foundation for Subsequent Projects (EDCF, ODA)
If Korean companies and foreign governments are hesitant to conduct a feasibility study required for the project because of costs issues	In case of a bidding campaign for a large-scale project	Use KSP projects to create demands for more projects, and secure justifications for subsequent EDCF and ODA projects
→ **Conduct** a pre-feasibility study, to absorb it as part of KSP projects → Improve the likelihood of implementing the actual (main) project	→ With KSP's resources, invite government officers in charge of project bidding for training programs (showcase Korean experiences and technologies) → Propose master plans, etc. for the project after winning the bid → Expand cooperation opportunities with partner countries (elevate national interest)	→ With KSP's resources, secure the basis and justification for subsequent EDCF and ODA projects, etc.

05. KSP PRIVATE SECTOR PROJECT PROPOSAL PROGRAM: TIPS

How to increase the chance of being selected

1. When there is an established network and prior discussion with the partner country

- Please clearly provide such details in the application
- Additional points granted for an official letter of request in the name of a high-level government official (deputy minister level or above)

2. High possibility of linkage with subsequent projects

- If a concrete and clear plan for the subsequent projects using KSP has been presented
- If the benefits of the KSP project for both countries have been clearly identified

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05. KSP PRIVATE SECTOR PROJECT PROPOSAL PROGRAM: TIPS

Inappropriate Cases

- Applying just to sell and market a company's products
- Proposing an idea with no relevance to (or experience on the part of) the partner country
- Proposing the project intended for private enterprise in the partner country, not its government agencies
- Submitting a poor application that is presentable to the partner country
- Proposing an idea that has no relevance to the basic nature of KSP in terms of feasibility test, policy proposal, etc. (providing physical goods, etc.)

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06. FAQs

Is the competitive bidding mandatory when applying through the private sector proposal program? Proposals are selected through an open call. Does it mean project operators are also selected through an open call?

The open call process is designed for submitting PCPs to partner countries. With the partner country's consent, the proposing agency should prepare and submit the necessary documents (PCP, coordinating agency's official letter, embassy's official letter) to the MOEF, in accordance with the official KSP application process.
The MOEF, then, reviews the applications in accordance with the prescribed process, and selects the final projects.
Project operators for the selected projects are selected through an open bidding process at the KONEP.
Even though the proposing agency proposed the project, it has to participate in the competitive bidding.

Is it possible to submit a proposal without a pre-existing network with the partner country?

You can still propose a project in that case. However, if there is a possibility of rejection from the partner country after the proposed project is selected, such risk will be considered during the evaluation process.

How many companies/agencies will be selected?

There is no specific target for how many projects to select.
In case of the private sector proposal program in 2022, proposals were evaluated on absolute terms. In other words, proposals were selected if the content of project and expected outcomes meet the purpose of the private sector proposal program.

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Knowledge Sharing Program

2023 Knowledge Sharing Program Dissemination Conference

Luncheon Session [Presentation 2]

How to Take Advantage of KSP!

Kwi Hyun KAHNG

Deputy Director of Global Business Department,
Korea District Heating Corporation

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Knowledge Sharing Program

HOW TO TAKE ADVANTAGE OF KSP!

PRESENTER

KWI HYUN KAHNG
DEPUTY DIRECTOR OF GLOBAL BUSINESS DEPARTMENT
KOREA DISTRICT HEATING CORPORATION (KDHC)

Hosted by 기획재정부 Ministry of Economy and Finance

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Knowledge Sharing Program

CONTENTS

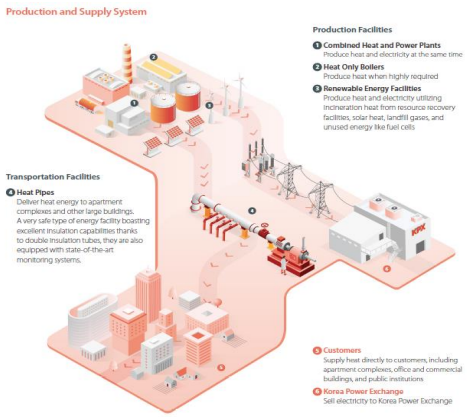
2023 Knowledge Sharing Program Dissemination Conference

01 INTRODUCTION

1. ADVANTAGES OF DISTRICT HEATING

What is District Energy

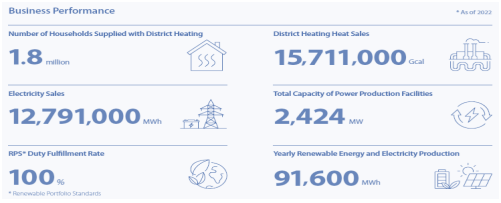
- District energy supplies heat and electricity produced in Combined Heat and Power Plants(CHPs), heat only boiler, and renewable energy facilities. The heat and electricity are then distributed to mass users such as apartments and commercial buildings. A very advanced energy supply system, it is 34% more efficient than conventional power generation.



Benefit of District Energy

- Excellent Energy Saving Effect by using high efficient CHP
- Air Pollutants Reduction Effect by Prevention Facility
- CO_2 Mitigation and Reduction Effect
- 24-Hour Convenient Use by Customer
- Relatively Cheaper Rates for Customer

Performance of KDHC



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2. STRATEGIC TARGET REGION : CENTREAL ASIA

Central Asia? Perfect Place for DH Business!

- **(Long and Cold Winter)** In the winter season, temperature can reach minus 30~40°C.
- **(Obsolete Equipment)** Most power plants are over 40 years, however major investment is limited due to the unreasonable tariff system that does not reflect cost.
- **(Power and Heat Supply Failure)** There are frequent cases of power and heat supply interruption during the winter season when the power load is high due to aging facilities.
- **(Serious Air Pollution)** Environmental pollution and Carbon Emission are increasing due to the aging of local heating systems.

Strong Need for KSP

- Government's commitment to improving DH
  - **(Uzbekistan)** Strong DH Modernization Policy by Government
  - **(Kazakhstan)** Adopting Law On Heating Industry
- Need to benchmark Korea's district heating system
  - Government Policy, Tariff System
  - Air pollution prevention measures

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Knowledge Sharing Program

02 UZBEKISTAN KSP PRJECT (SUGGESTED PROJECT)

1. WHY UZBEKISTAN?

Uzbekistan implementing Strong District Heating Modernization Policy

- **(Situation)** After the collapse of the Soviet Union, district heating operation was suspended in most cities due to neglect of district heating maintenance
- **(Business Model)** Aged district heating facilities are replaced with state-of-the-art cogeneration facilities, and the produced electricity and heat are sold wholesale.

Subject	Details
Project Name	• Modernization of District Heating Systems in Bukhara and Jizzakh
Project scope	• To design, build, finance and operate the district heating system and CHP facilities
Off-takers	• Heat : Ministry of Construction, Housing and Communal Service (MOCHCS) • Electricity : JSC Negu
Sponsors	• ******* and KDHC (Korea District Heating Corporation)
Project type	• BOT (PPA & HPA for 25 years - TBC)
Site location	• Site 1: Bukhara City • Site 2: Jizzakh City
Capacity	• CHP plant : 100-200MW + 100-200 Gcal/hr for each site • Heat boiler: 70-110 Gcal/hr for each site
Est. project cost	• USD 720 million for two sites (USD360million each)

2. TOO RISKY! SOLUTION? KSP!

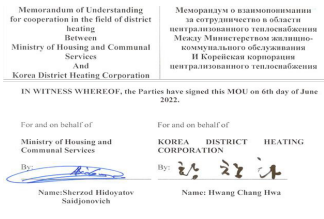
Uzbekistan KSP – A breakthrough needed to continue the Uzbekistan project

- Skyrocketing Investment costs due to the Covid-19 Pandemic and Russia –Ukraine War
- Need to Postpone Uzbekistan Investment Project
- Need a Dialogue Channel with Uzbekistan Gov

PANDEMIC + WAR + Financial Crisis

3. PREPARING KSP TOGETHER WITH UZBEKISTAN GOV

MOU ('22. 6) → Pre CAPACITY BUILDING ('22. 8) → KSP PCP ('22. 10) → KSP ('23. 9)



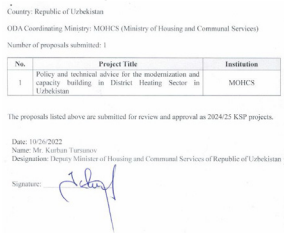
Memorandum of Understanding for cooperation in the field of district heating Between Ministry of Housing and Communal Services And Korea District Heating Corporation

Меморандум о взаимопонимании за сотрудничество в области централизованного теплоснабжения Между Министерством жилищно-коммунального обслуживания И Корейская корпорации централизованного теплоснабжения

IN WITNESS WHEREOF, the Parties have signed this MOU on 6th day of June 2022.

For and on behalf of Ministry of Housing and Communal Services — By: — Name:Sherzod Hidoyatov Saidjonovich

For and on behalf of KOREA DISTRICT HEATING CORPORATION — By: — Name: Hwang Chang Hwa



Country: Republic of Uzbekistan

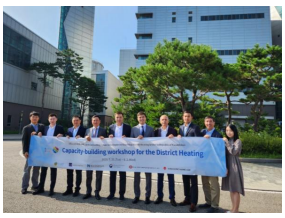
ODA Coordinating Ministry: MOHCS (Ministry of Housing and Communal Services)

Number of proposals submitted: 1

No.	Project Title	Institution
1	Policy and technical advice for the modernization and capacity building in District Heating Sector in Uzbekistan	MOHCS

The proposals listed above are submitted for review and approval as 2024/25 KSP projects.

Date: 10/26/2022
Name: Mr. Kurban Tursunov
Designation: Deputy Minister of Housing and Communal Services of Republic of Uzbekistan
Signature:



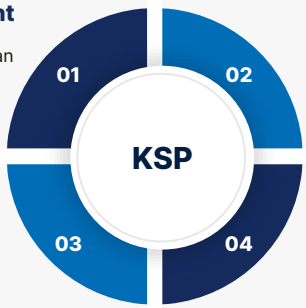
4. KSP – BUSINESS MODEL DEVELOPMENT

Uzbekistan KSP

- **(Title) Policy and Technical Advice** on Improving district heating system **to reduce greenhouse gas emissions** and prevent environmental pollution in Uzbekistan
- **(Objective)** Efficient and Comprehensive Promotion of district heating modernization project in Uzbekistan through **consulting on how to overcome technical and commercial challenges in district Heating**

DH Supply System Improvement
- Analyze DH Supply System in Uzbekistan
- Open System vs Closed System
- DH Water Quality Concern

Management of DH Network to Minimize Heat Loss
- Insulation Improvment
- Maintenance and Repair
- Burial Methods



Tariff System
- Heating area based tariff
- Not encouraging to save energy
- Necessary to install heat meter

Develop GHG reduction Project model for DH sector
- Analyze GHG Emissions from DH
- Devleop GHG Reduction Model
- Assess GHG Reduction Potential

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03 BENEFIT OF KSP

1. NEXT STEP AFTER KSP

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KSP-ODA-EDCF-Investment

KSP (23 – 24)	ODA (25 – 27)	EDCF Project	Investment Project
Consulting Policy and Technical Consulting on DH In Uzbekistan	**Pilot Project** Modernization of DH Supply System in Substations	**Small-Scale DH Modernization Project**	**Large-Scale CHP Project**

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2. KSP BENEFITS

Business Development

Easy to Identify the need of Partner Country

Human Networking

Good Opportunities to meet key decision maker

Trust Building

Trust plays a pivotal role in overseas projects

Export Facilitation

KSP facilitates the export of Korea's advanced systems and technology

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04 KAZAKHSTAN KSP PROJECT (IN PROGRESS)

1. OVERVIEW OF KAZAKHSTAN KSP

Kazakhstan KSP - Green Development Road Map for the Heating Sector in Kazakhstan

- (Period) March 2023 ~ September 2023 (7 Months)
- (Client) KEXIM (Export-Import Bank of Korea (2022/23 KSP-ADB Joint consulting)

01 | Analysis in the Heating Sector
- As-Is Studies for Problematic Issues
- Pre-Requisites Study for To-Be

02 | Sharing Knowledge
- Advices for the Institutional Systems
- Sustainability Studies Based on Market

03 | Local Seminars & Due Diligence
- Inception / Interim / Final Seminars
- Job-Site Surveys (Semey / Ekibastuz)

04 | Establishment of Master Plan
- Methodologies for the Low Carbon DH
- Reference Studies for the Advanced DH

05 | Establishment of the Green Development Road Map
- Establishing Short-term, medium-term, and long-term Plans
- Developing a plan to activate private investment
- Establishing a roadmap by gathering opinions form local stakeholders in Kazakhstan

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2. SITE SURVEY (EKIBASTUZ)

- Developed and Industrialized through the Large Coal Mine (Reserve 13Bil tons) Near to Pavlodar
- Two Coal Fired Power Plants Nearby : GRES-1 (4,000 MW) + GRES-2 (1,000 MW)

Overaged & Unserviced Hardware
- Rupture of DH Distribution Network Pipe (December in 2022)
- Shutdown of the HOBs/Substations
- Interruption of the DH Service for Days

Disfunctional DH Organization
- Poor Functionality of the Parties (Production/Supply/Billing/Maintenance)
- Unsystematic Work Flows & Loopholes
- Time-Consuming & Cost Ineffective

Service Quality/ Sustainability Issues
- Poor Return on Investment (RoI)
- Increased Losses & Accumulated Deficits
- Insufficient CAPEX for Refurbishment
- Customer Complaints

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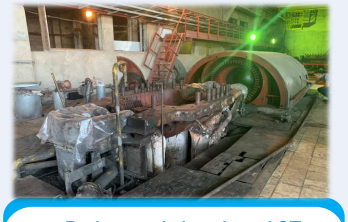
2. SITE SURVEY (SEMEY)

- City Near to Kazakhstani Border with Russia (More Russian Character City in Kazakhstan)/City Divided by the Irtish River
- 2 Coal Fired CHP Plants with Small Power Generation and High DH Production Capability



Coal – Fired CHP Plant

- Low Efficiency → High GHG Emissions
- Severe Air Pollution in Winter

- Semey-3 Power Station Announced (2023)
- Planned Capacity : 320 MWe+1,200 Gcal/h
- Fuels : Coal + NG (Co-Fired Power Plant)

Broken and abandoned ST

- Duties Lost for the CHP Plant Operation
- Badly Ruined Plant Efficiency

- To Be Refurbished by High Efficient STG
- Trained Operators Required for CHP Plant

Old Fashioned & Deteriorated HXs

- High Heat Losses on the Surface
- Poor Performance of HXs : TTD/DCA

- DH Supply Temperature : Hard to Meet!

- Refurbishment by the Plate Type HXs

3. DUE DILIGENCE

Kazakhstan KSP – Site Survey Results of District Heating in 2 cities

Overaged Coal-Fired CHP

- Facilities Exceeded service life
- High Heat Loss rates (e.g., Ekibastuz TPP (2020) 36%)
- Increased use of coal
- High GHG emission

Overaged DH network pipes

- overaged DH network pipes
- Significant increase in maintenance cost
- Significant increase in DH transportation cost (power and water, etc.)

Tariff System

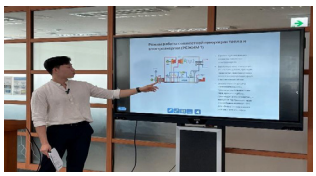
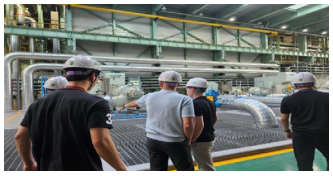
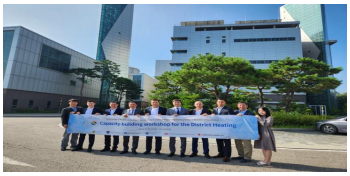
- Inability to accurately bill based on usage
- No individual household heat meters installed
- Heat Tariff does not reflect changes in fuel costs, etc

- Deteriorating financial solvency of DH companies
- Delays in maintenance and facility improvement required for stable operation
- Delayed Carbon Reduction Project
- Impossible to improve the quality of life

4. CAPACITY BUILDING

Kazakhstan KSP – Capacity Building for High ranking Officials

- **(Korea Experience Sharing)** Curriculum composition to support Kazakhstan's district heating problem solving
- **(Policy & Tariff Structure)** Korea District Energy Law, Support and Expansion policy, Tariff system
- **(Technical O&M)** Optimal operation and maintenance plans for cogeneration plants, heat transport pipes, and user facilities.
- **(Site Visit)** Integrated Control Center, PanGyo CHP, Landfill Gas Utilization Facility, PanGyo Techno Valley User Facility


5. HOW TO USE CAPACITY BUILDING

Kazakhstan KSP Capacity Building – The Perfect Chance to Promote yourself and develop new project

Advertise ment + Human Network + New Project Development



6. CONCLUSION

Masterplan

1) Serious condition of old district heating facilities

overaged Facilities	Fixed Heat Tariff	Excessive use of coal
1. Heat loss (more than 30%) 2. Difficulties in raising investment funds 3. Delayed modernization	1. Fixed heat tariff(10 years) 2. Increased labor cost and maintenance cost 3. Deterioration of business	1. Coal use for Individual heating and DH 2. High GHG emissions 3. Serious air pollution

2) Review of Master Plan and Green Development Roadmap

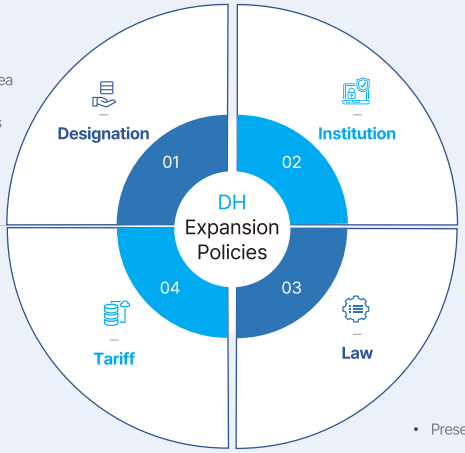
Master Plan 1st Stage	Master Plan 2nd Stage	Master Plan 3rd Stage
• Establishment of DH technology • Standards and financing plan	• Basic design for modernization and establishment of private investment basis	• Facilities improvement (construction) and commercial operation

Green Development Roadmap 1st Stage	Green Development Roadmap 2nd Stage	Green Development Roadmap 3rd Stage
• Review of Carbon Reduction technology and Establishment of financing plan	• Implementation of private investment in renewable energy	• Establishment of foundation for continuous increase of renewable energy

6. CONCLUSION

Policy Proposal

Designation of Districts to be Supplied with DH
- Designated as a supply mandatory area
- Securing future demand from the perspective of business operators which promotes investment by private businesses



Establishment of DH specialized Institution
- Building an Efficient Control System
- Periodically identifies the current status of DH facilities

Reorganization of Heat tariff system
- To promote private investment
- Properly reflect costs of NG/Coal
- Sustainable Heat sales revenue

Enactment of special law on DH
- Presentation of the operating rules of the collective energy market
- Protection of consumer rights
- Presenting the role of DH business operator

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THANK YOU

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