

Green Growth & Climate Change

Rae kwon Chung
Climate Change Ambassador
Republic of Korea

1. Chronology

- March 2005: UN ESCAP, 5th MCED
Ministerial Declaration on Green Growth
- May 2006: China, 6 measures for GG
- August 2008: Korea, Low Carbon GG
- June 2009: OECD,
Ministerial Declaration on Green Growth

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我国将采取6项措施推动经济“绿色增长”

中央政府门户网站 www.gov.cn 2006年05月24日 来源: 新华社

【字体: 大 中 小】 打印本页 关闭窗口

新华社北京5月23日电(记者贺劲松)国家发展和改革委员会环资司司长赵家荣23日说,我国将采取6项措施促进节约型社会建设,推动经济“绿色增长”。

赵家荣是在此间召开的第二届亚太地区政策对话会议上说这番话的。这次会议由联合国亚太经济社会理事会与中国国家发展和改革委员会联合主办,中国标准化研究院中标认证中心承办。

Green Growth

President's Statement (August 15 in 2008)

“Green growth is:
 a **sustainable growth** that reduces greenhouse gases and environmental pollution
 a **new national development paradigm** that creates new growth engines and jobs through green technologies and clean energy.”



Economy

- Green Industry
- Green Technology
- Green Infrastructure

Green Industrialization



- Increase national income
- Create jobs
- Strengthen energy independence

Virtuous cycle between environment and economy

Environment

- Clean energy
- Green industrial structure
- Sound waste management

Low-carbon/eco-friendly economy



- Address climate change
- Reduce greenhouse gases
- Environmental conservation

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SPOTLIGHT

A green foundation of cold, hard cash

UN environment official works through Asian governments' wallets

By Thomas Fuller

BANGKOK
People in Asia are so obsessed with economic growth — money, money, money, said Rae Kwon Chung, a top United Nations official here. "But not the environment. They don't give a damn."

This is hyperbole of course: Dirty air and contaminated water are rising concerns across the region. But Chung, who runs a UN environment program in Asia, is not averse to being provocative if it makes people listen.

It is not news to anyone who lives in one of Asia's megacities that years of breakneck economic expansion have come at great cost to the environment. New Delhi and Beijing, two of the worst examples, both have levels of air pollution about three times as high as maximum levels suggested by the European Union and United States.

But rather than preach the virtues of cleaner air, says Chung, a former South Korean diplomat, it is more effective to aim for the wallet when trying to convince Asian governments of the urgency of the problem. Continued economic growth will not be possible if the environment is neglected, he tells officials.

"Our approach is not only to focus on the environment ministers but the finance ministers as well," Chung said in an interview at his office in Bangkok.

His mantra is green growth: If Asia is profligate with oil, coal, timber and other commodities, prices will spiral

out of control and the economic miracle of recent years will flop, he said.

"What he's saying is not that radical," said Chee Yoke Ling, a lawyer based in Beijing and who specializes in environmental issues. Referring to the concept of green growth, she added, "This was discussed more than 15 years ago."

"But it was never translated into action," she said.

Chee said that Chung was right to spread his message among officials from finance and development ministries because that is where the money is and it is those officials who have the power and funds to change government policies.

"Environment ministries in any country are very weak," Chee said. "They don't have much sway."

With the steady rise of commodity prices in recent years, energy-saving policies are being built into the government's overall strategies. The Chinese government in April increased to 20 percent from 8 percent a tax on cars with large engines, like sport utility vehicles. Taxes on small cars were slashed.

China's current Five-Year Plan, its outline of economic strategy through 2010, stresses energy conservation and sustainable development.

Chung's central message is that the citizens and leaders of the region should discard any illusion that they can adopt an American lifestyle.

There are not enough resources in Asia to support it, he said. The region's



Rae Kwon Chung, a UN official in Bangkok, says Asia's economies will not be able to grow further if the environment is neglected.

population density is 1.5 times the global average yet the Asia-Pacific region has one-tenth as much available fresh water as, say, South America, according to UN statistics.

"The region is already living beyond its means," Chung said. "We need to move away from the grow first and clean up later" approach.

Yet Chung is more optimistic than many of his colleagues who work on environmental issues. The world should be thankful, he said, that China is not a democracy because a centrally planned economy can react more quickly to the challenges of the environment. "If it were a completely democratic country, it would be very difficult to control it," he said. "I think China will be faster than any other country in improving the environment at the local level because they are centrally controlled."

For all his diplomatic background, Chung shuns the tiptoe approach of some of his colleagues. He exudes zeal.

Chung spent 27 years in South Korea's foreign service, with postings in New York, Paris and Jakarta.

He joined the United Nations two years ago because, he said, he wanted to "do something" "substantive and meaningful."

His official title is director of the environment and sustainable development division of the United Nations Economic and Social Commission for Asia and the Pacific. It barely fits on his name card.

Chung said that part of his job is trying to change mentalities. Asians tend to think of railways as transport for the poor, so they favor building massive highways. Yet too many roads in densely populated countries is inefficient and

bad for the environment, he said.

Chung said that his native South Korea was an example of the problems associated with big cars and wide highways: "Over the weekend, the entire country becomes a parking lot."

Governments should change their tax systems, he said, increasing levies on gasoline and cars. Rechargeable batteries should be tax-free and disposable ones heavily taxed, he said, because batteries leak damaging chemicals into the environment when they are discarded.

So what is Chung's ultimate wish? It involves Angelina Jolie, he said mischievously. Asia needs a star or starlet who can champion the environment as passionately as Jolie has tackled the issue of refugees and displaced people. Governments and UN officials can only do so much, he said.

International Herald Tribune

★ 60TH ANNIVERSARY ISSUE ★

COMING CLEAN

For decades, Asia has ravaged its environment. A SPECIAL REPORT on what has gone wrong—and the people who are trying to put things right

[ASIA'S ENVIRONMENT]

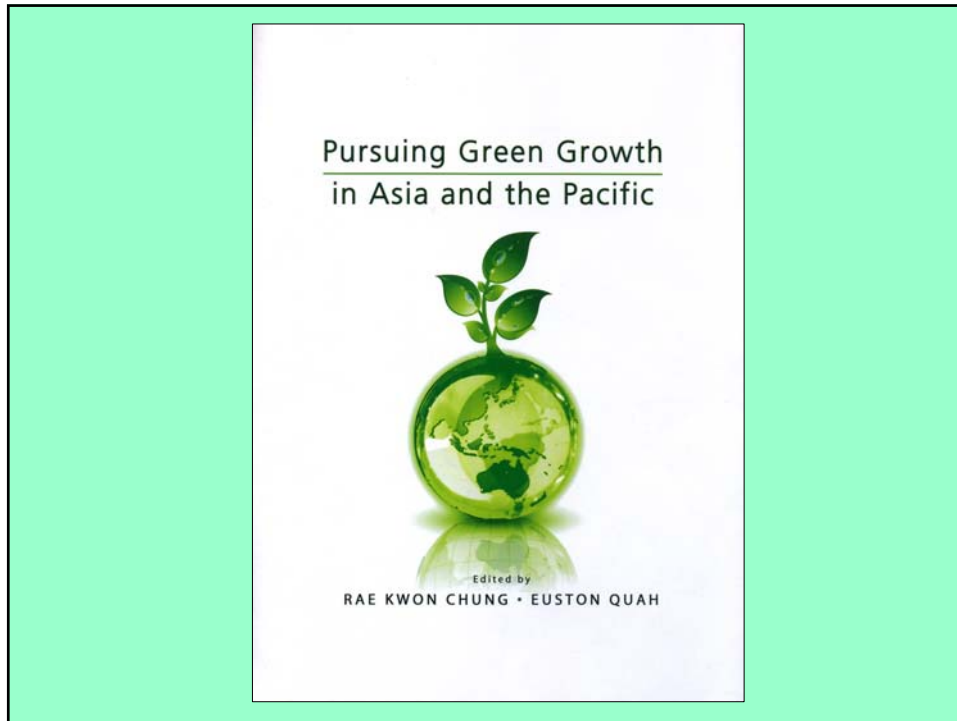
VISIONS OF GREEN

After decades of rapid economic growth, Asia's environment is at a tipping point. A SPECIAL REPORT on the scale of the crisis—and how to confront it

BY BRYAN WALSH

If you want a sense of the challenges facing Asia's physical environment, just go to Beijing—and breathe. The Chinese capital's constant swirl of production, construction and transportation creates a noxious smog that blankets the city on bad days, cutting both visibility and life expectancy. At the junior world track-and-field championships in Beijing this August, young runners choked and sputtered their way to lackluster performances, a bad omen for the 2008 Summer Olympic Games. Asia has a history of holding an Olympics in a city with foul air: Tokyo, site of the 1964 Summer Games, was so polluted in the '60s and early '70s that citizens walked the streets in surgical masks, while Japanese cities like Minamata, where thousands were stricken with severe neurological damage due to industrial mercury poisoning, became bywords for ecological catastrophe. Post-industrializing Japan was commonly expected to become an environmental dystopia. But today, Tokyo is one of the world's cleanest megacities, with the view clear all the way to Mount Fuji. Stricter laws, tougher enforcement and a hard-earned environmental consciousness have made Japan a nation whose record is something to which other Asians can aspire, rather than a misery to be deplored.

Illustration for TIME by Leigh White



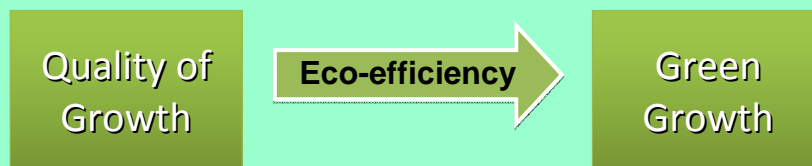
2. "Why" GG ?

- Under economic paradigm treating Environment as Free goods,
 - i) poverty/economic crisis
 - ii) resource crisis
 - iii) ecological crisis exacerbatewhile compromising quality of life, environmental sustainability, climate change

Limits of GDP Paradigm



New GG Paradigm



Paradigm Shift from

- Quantity to Quality of GDP
 - Ecological Quality
 - Economic Quality
 - Social Quality
- Green Growth: Ecological & Economic Quality

Current Paradigm: MCE

- Market Cost Efficiency: market price
- Market Price < Ecological Price
- Market Cost Efficiency (MCE) < Ecological Cost Efficiency (ECE)
- Gap between MCE & ECE has to be closed

Ecological Efficiency (EE)

- Key Concept of GG
 - Internalize Ecological Cost
 - Maximize Resource Efficiency
 - Minimize Pollution Impact

3. “How” of GG

- Creating a system where Investing in ecology and climate change could stimulate Growth, Employment, Business
- By changing
 1. Price Structure (ecological costs)
 2. Eco-efficient Infrastructure: ex. rail
 3. Regulation/Standards
 4. Value System, Life-style
 5. Technology

Basis for Eco-Efficiency

1. **Invisible Infra:**
Price-structure,
Technology/Regulation/Value System
2. **Visible Infra:**
Infra-structure:
Physical Frame of Economic Performance

Do we have a model of LCGG?

- E3MG: (Energy, Environment, Economy, Model: Global) “Cutting the Cost” <Tony Blair>
- “Global target will stimulate global economic growth and employment”

September 2009



California's plan to slow climate change will boost the state economy and save hundreds of thousands of jobs

SACRAMENTO, California (Reuters) Oct 7 2009-
The most populous U.S. state leads the nation with its plan to cut carbon dioxide emissions to 1990 levels by 2020---**Rising fossil fuel prices would cut state economic output by \$84 billion and slash 626,000 jobs in 2020, But the move to get a third of state electricity from renewables and become more efficient would reverse the decline---** **Instead, 2020 economic output would rise \$20 billion from current projections and 112,000 jobs would be created.**

Then Why Resist ?

- Positive Results: Long-Term
- Afraid of Short-Term Burden/Costs
- Key: closing Long/Short-Term Gap ?
- Need Public Policy Support
 - ✓ to Minimize Short-Term Burden
 - to Maximize Long-Term Gains

Role of Government

- GG has to be initiated by Government
- Private sector investment difficult
- Short-term Cost > Long-term Return
- Public policy has to close the gap

Relevant for LDC ?

- GG : more applicable to middle developing countries
- However, DCs at lower level of development could also benefit from the implications of GG policy options in setting their priorities and directions right,
ex) tax & transport system

MDG & GG

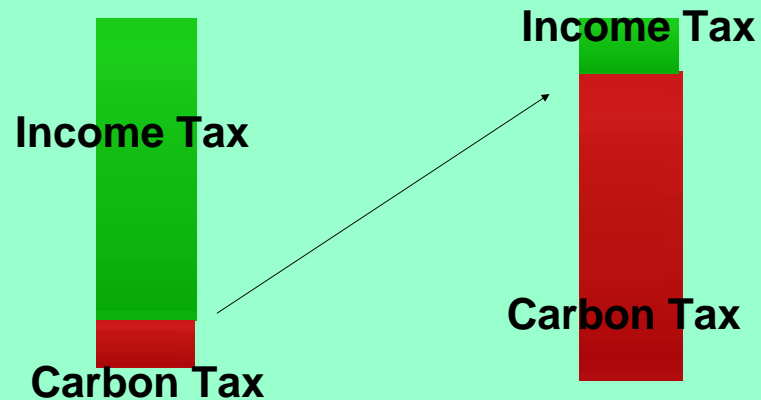
- MDG: not paradigm,
 - lack strategy for addressing conflicts among MDGs ex) MDG 1 & 7,
 - do not fully address climate change
- GG: paradigm & strategy
 - aims to harmonize MDG 1 & 7
 - focus on climate change

Policy Tools for GG

- Eco-Tax Reform: Tax Base, Income → Carbon
- Sustainable Infra: Transport, Renewable Energy
- Demand-side Management: life-style
- Green Business Promotion
- Climate Action

Eco-Tax Reform

Tax Base: **Income** Tax Base: **Carbon**



• Changing Tax Base

Double Dividend

- 1 stone 2 birds



- Reducing GHG Emissions
- Promoting Growth → GG

Eco-Efficient Infra

- Japan: rail based transport system
- Singapore: private car control
- London: congestion charge
- Norway: Road Pricing, ban shopping mall
- Failure of EE: Traffic Congestion Costs
Japan 0.79%, US 0.65%,
UK 1.25%, Bangkok 6%,
Korea 2.9%

EE Pattern of Economic Growth

- Japan > EU > US

Different Patterns of Growth (global hectares per capita, 2003)

	Biocapacity (global ha/person)	Ecological Footprint (global ha/person)	Ecological Deficit (global ha/person)
Republic of Korea	0.5	4.1	-3.5
Japan	0.7	4.4	-3.6
China	0.8	1.6	-0.9
DPR Korea	0.7	1.4	-0.8
US	4.7	9.6	-4.8
UK	1.6	5.6	-4.0
France	3.0	5.6	-2.0

*Source: WWF Study, 2006

4. Coping Climate Change

- Low Carbon: important basis for GG
- Climate Action: driver of GG

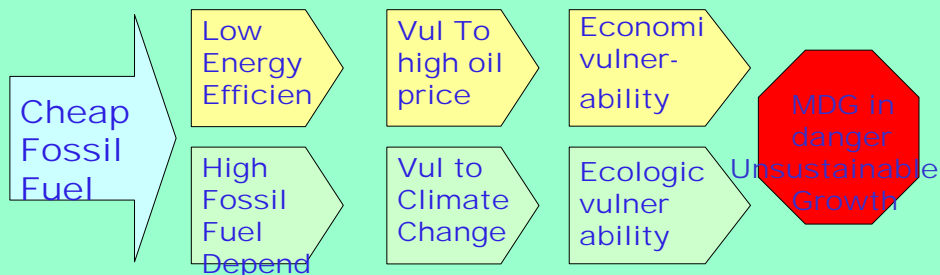
Story of Three Myths

Climate Action (CA): Bad for Economy
Only Binding Commitment Matters
Not Enough Money/Technology for CA

Story of Low Carbon Paradg

Climate Action: Good for Economy
MRV can drive CA
Enough Money/Technology for 3 CCs

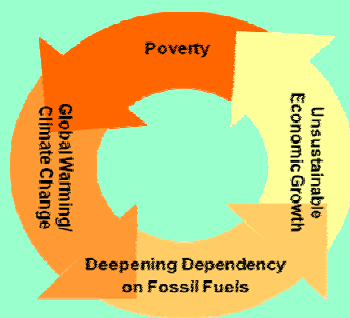
High Carbon Paradigm: Economic & Ecological vulnerability



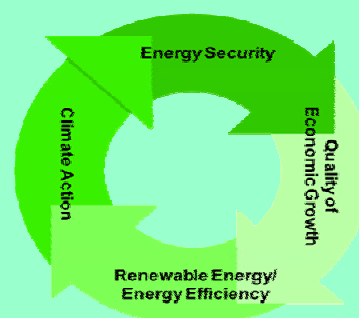
Low Carbon Paradigm

- High Energy Efficiency → Economic Growth
- Low Fossil Fuel Dependency → Ecological Sustainability
- Basis for
→ Green Growth

Paradigm Shift from High to Low Carbon Paradigm



Vicious Cycle



Virtuous Cycle

Climate Action = Energy Security

- Climate Action → Improving Energy Efficiency
→ Improving Energy Security
- High Oil Price is making Climate Action not only Ecological action but Economic Action

CA Bad for Economy ?

- Internalize Ecological Costs →
Improves Energy Efficiency →
Encourage R&D & Create New Market,
Increase Employment & Growth
- Countries with High Energy Price →
High Energy Efficiency →
Strong Industrial Competitiveness

Why resist? Because No Proof

- Whether decoupling could happen in DCs
- Not sure about the policy options needed
- Low Carbon Development: still vision,
- Decoupling only happens in rich countries
- Korea: 75-06, GDP increased 7.5 times
Energy Consumption 7.4 times
- We need Low Carbon Economics:
 - that can make decoupling happen in DCs.

5. The Case of Korea

- Public Green Investment: 2% of GDP
- Basic Law for GG:
- Setting mid-term target for 2020: Registry
- East Asia Climate Partnership:
 - 200 million US\$ to support DCs
- LCGG as National Strategy of
 - Quality of Life, Climate Action,
 - Energy Security, Engine of Growth

5 year GG Plan

Five-year Plan for 2009-2013 announced in July 2009

- Government investment of **2% of GDP per year** totaling 86 billion USD in the next 5 years

Framework

Three Objectives	Climate Change & Energy Security	New Engines for Economic Growth	Quality of Life & Int'l Standing
10 Policy Directions	<ol style="list-style-type: none"> 1. Effective mitigation of GHG 2. Reduction of fossil fuel use & improving energy security 3. Adapting to climate Change 	<ol style="list-style-type: none"> 4. Development of green technology 5. Greening of industries 6. Advancement of industrial structure 7. Engineering basis for green economy 	<ol style="list-style-type: none"> 8. Greening the land, water, building and transportation 9. Green revolution in our daily lives 10. Becoming a green growth leader

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Policy Actions for Each of Ten Policy Direction



Response to Climate Change & Energy Security

Policy Directions	Major Actions
1. Effective mitigation of GHG Emission	<ul style="list-style-type: none"> ● GHG reduction target, ● National Inventories, ● Forestation, etc
2. Reduction of use of fossil fuels and enhancement of energy independence	<ul style="list-style-type: none"> ● Energy Efficiency, ● Renewable energy technology, ● Waste, biomass to Energy, ● Climate resources map
3. Strengthening capacity to adapt to climate Change	<ul style="list-style-type: none"> ● Climate change prediction model and Early warning system, ● Food and water security, ● Disaster prevention and recovery system

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Creating New Engines for Economic Growth

Policy Directions

4. Development of Green Technology

Major Actions

- ☛ Investment in developing green technologies (R&D)
- ☛ LED, solar cells, hybrid cars, advanced light-water reactor, fuel cells, etc

5. Greening of Existing Industries and Promotion of Green Industries

- ☛ Expand green industrial complexes
- ☛ Fostering environmental businesses; Resource-circulating industrial structure/urban mining, cleaning of contaminated sites, etc

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Creating New Engines for Economic Growth

Policy Directions

6. Advancement of Industrial Structure

Major policies

- ☛ IT, robotics and broadcasting & communications, Nano-Tech, Pharmaceuticals and New Materials
- ☛ Global Health Care and Educational Services

7. Engineering a Structural Basis for the Green Economy

- ☛ Financial support for green industry,
- ☛ Emission trading, Carbon fund,
- ☛ Eco-friendly taxation reform,
- ☛ Green jobs

8

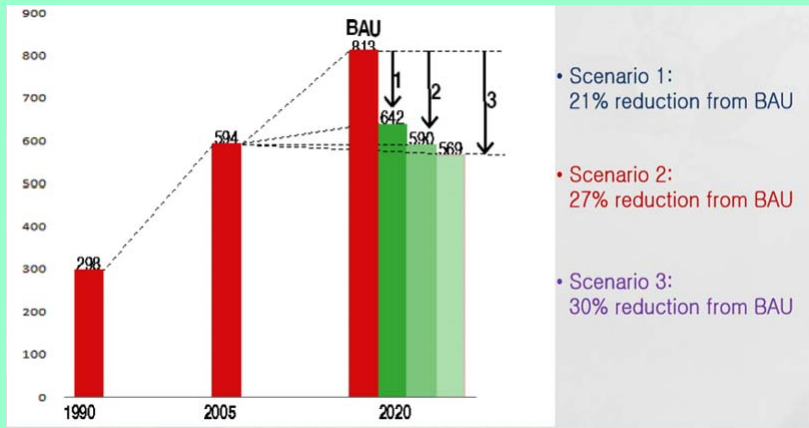
Improvement in Quality of Life & Enhanced Int'l Standing



Korea's Mitigation Target Scenarios for 2020

- **3 scenarios** (Aug. 4, 2009) Deviation from BAU
 - 1: 21% (8% increase from 2005 level)
 - 2: 27% (Return to 2005 level)
 - 3: 30% (4% decrease from 2005 level)
- Final Target to be announced within this year

Mid-term target for 2020



Basic Act on Green Growth

Composition

- 7 chapters and 65 articles
- A basic act – it has priority over all relevant laws regarding Green Growth

- Key provisions**
- 1) Legal ground for the **Presidential Committee on Green Growth** and mandate the committee to develop a **national strategy for Green Growth**
 - 2) Mandate the government to **foster and support green economy, green industry, and transformation of conventional industry**
 - 3) Foster **financing for green technology R&D and green investment** and mandate the government to promote **environmentally-friendly tax reform**
 - 4) Mandate the government to set concrete **targets for GHG emission reduction**, energy saving, energy security and renewable energy supply
 - 5) Mandate businesses to **report GHG emissions** and provide the legal framework to introduce **cap & trade system** in Korea
 - 6) Articles on environmentally-friendly **land use, green building, low-carbon transportation, green consumption and production** and other issues related to sustainable development

Investment Plan for Green Growth

A total of 107.4 trillion won between 2009 -2013

- Fiscal spending of 2% of GDP a year (UNEP recommends investing 1% of GDP)
- Induce production of 182-206 trillion won/job creation of 1.5-1.8 million

	Total	2009	2010-2011	2012-2013	Increase rate
Green growth (Unit: trillion won)	107.4	17.5	48.3	41.6	10.2%
<i>climate change</i>	56.9	8.6	29.2	19.2	14.0%
<i>New growth engines</i>	28.6	4.8	10.7	13.1	9.4%
<i>quality of life</i>	27.9	5.2	10.5	12.2	3.6%

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Implementation Framework

Sustained Drive

Key role of the "Presidential Committee on Green Growth"

Legal Framework	Legislation of the Basic Act on Green Growth
Strategy	Inherit the spirit of the "Economic Development Plan" in the 60~80s * 5 year implementation plans
Green Budget	Government spending of 2% of GDP on Green Growth

National Mid-term GHG reduction target

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6. Role of Korea for Copenhagen

1. Korean Proposals to break deadlock

- NAMA Registry
- NAMA Credit

* Nationally Appropriate Mitigation Actions, Bali Action Plan

2. Climate Actions comparable to Capabilities:

- Role model for early action

3. Lead Low Carbon Green Growth model

- Ultimate solution for climate change

Issues to Operationalize Bali Action Plan 1(b)(ii)

▪ How to Keep Track of NAMAs?

▪ How to Match NAMAs with Support?

▪ How to MRV Action & Support?

International Registry for NAMAs

Registry for DC

- Internationalize domestic actions, improve transparency for international recognition
- Basis for matching support with action:
- Basis for MRV of actions & support

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Registry for DCs

- Types of NAMAs
 - Unilateral
 - Supported
 - Credited
- Elements to be registered
 - Nature of Actions,
 - Expected Quantity of mitigation
 - Timeframe

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Formula for Unilateral NAMA

Voluntary
Registration of
unilateral NAMA

+

Domestically
Binding
Implementation

+

Int'l MRV

A practical alternative to
"Internationally Binding Commitments"

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"Annex 1" for Developed Countries, while "Registry" for Developing Countries

Developed Countries

Historical responsibilities
for the past 150 years

Absolute Reductions to
keep the 2°C limit

vs.

Developing Countries

Responsibilities only for
recent decades

Reductions comparable
to their capabilities

Levels of MRV

- **Unilateral NAMA**
 - MRV by domestic entities based on internationally agreed guidelines
 - To enhance transparency, not to interfere
- **Supported NAMA**
 - MRV based on agreed methodology
- **Credited NAMA**
 - MRV to ensure comparability and environmental integrity

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NAMA Credit

- **Channel for Finance & Tech Transfer**
Incentivize Market Dynamism
- **Scope of Credit**
 - enhancing CDM: from project to program/policy/sectoral crediting
- **Going beyond carbon off-set**
 - Discounting of carbon credits
 - Additional commitments from Annex I Parties

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Korea's contribution

- Contribution Comparable to Capabilities
 - Announce mid-term goal for 2020 in 2009
 - Implement the goal in a domestically binding manner
 - Open for International MRV
 - Role Model for other DCs

Low Carbon Paradigm Shift

- Mitigation: Result of Low Carbon Paradigm
 - * Korea: Setting LC Model/Roadmap
- Copenhagen Agreement:
 - Mitigation Framework
 - Global Partnership for Low Carbon Paradigm Shift

Korea seeks to break climate talks deadlock

- The Associated Press
- Published: September 26, 2008
- **AMSTERDAM, Netherlands:** South Korea wants developing countries to put their plans for reducing carbon emissions on paper — a proposal it hopes will break the stubborn deadlock in climate change negotiations.
- South Korea's chief climate negotiator, Rae-Kwon Chung, said Friday he would propose an international registry in which countries such as China and India would record their domestic carbon emission policies.
- Registering would be voluntary, he said, but laying out a domestic policy would translate into an international commitment that could be monitored and verified.

Small nations seek middle ground in climate talks

AP, June 4, 2009

South Korea is promoting an idea to require developing countries to register their plans to control pollution, skirting a deadlock on whether those commitments must be legally binding in an international agreement, as demanded by the U.S. and other industrial countries. Under the Korean plan, those carbon-cutting commitments would be embedded in domestic law but subject to outside verification. "The object is to get them to act," Chung told The Associated Press. "Categorizing countries doesn't solve problems."

Mexico and South Korea are among several countries putting forward suggestions and lobbying in the corridors to try to open new directions for the talks. Such countries play a significant role in the negotiations, says Jonathan Pershing, the chief U.S. negotiator.

"You perceive of them as having ideas, of being a constructive partner, not always agreeing but offering solutions, trying to make the process move," he said in an interview.

Developing Nations Plan Emission Cuts

Shift Seen as Crucial to New Climate Pact

By Juliet Eilperin
Washington Post Staff Writer
Friday, December 12, 2008; A10

Earlier this year, South Korea pledged to set a climate target next year, and South Africa approved a plan under which its emissions would plateau between 2020 and 2025 and begin declining between 2030 and 2035. India outlined a national plan that would boost solar power production. And Kazakhstan moved this week to join the 1997 [Kyoto Protocol](#) with a plan to bring its greenhouse gas output back to 1992 levels by 2012.

Annie Petsonk, international counsel for the [Environmental Defense Fund's](#) climate and air program, called the pledges "the most significant development here" in Poznan. "That is countries voting with their feet, joining the carbon market, saying they're coming in regardless of what happens with the process here."

Rae Kwon Chung, South Korea's climate ambassador, said he hopes his country will be "a trend-setter" by adopting a climate goal and proposing an international climate registry that would track whether developing nations are curbing emissions.

"The current culture is of mistrust and finger-pointing. It's 'you first,' '[no,] you first,'" Chung said. "We do not share the same historic responsibility. But we will make a contribution commensurate to our capability."

主动承担量化责任 给发展中国家做表率

人民网 people
www.people.com.cn

韩国决心打破气候变化谈判死结

中国对此表示欢迎并将提出正式承诺

记者 任建民 金利

2008年12月12日22:00 来源：人民网

【字号 大 中 小】 打印 留言 论坛 网摘 手机点评 纠错 E-mail推荐: 提交



韩国代表团团长郑来权接受本报独家采访，任建民摄

Role of Korea

- AP: June 4, 2009, Small nations seek middle ground in climate talks
 - Bridge Builder/Seek Middle Ground with Creative Ideas/Novel Proposals
 - play significant role, having ideas, constructive partner, offering solutions, trying to make the process move
 - * Jonathan Pershing, US chief negotiator