TRƯỜNG ĐẠI HỌC HÀNG HẢI VIỆT NAM
VIỆN MÔI TRƯỜNG

ENVIRONMENTAL LAW AND POLICY

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LESSON 11. GREEN ECONOMY

Instructor: Ma.Sc. Dinh Thi Thuy Hang

Co-funded by the Erasmus+ Programme of the European Union

MARE

Key areas

- Objectives of the economy – Current debates about how we measure growth and prosperity will have enormous ramifications for global trade, production and consumption patterns.

- Energy – The energy sources we use in the future will be fundamental to how our societies and economies operate. The transition from fossil fuels to renewable energy is at the heart of a green economy. The energy sources that are scaled up globally (fossil fuels or renewables) will determine if we are able to avoid irreversible climate change.

- Valuing nature – Ideas about recognising nature's true value (monetary and/or non-monetary) could revolutionise how we protect the environment, safeguarding it for future generations.

Conflict and security

- Climate change is already having impacts on existing conflicts and creating new ones. This is particularly the case between local communities in the global south over access to resources.
- Potential future conflicts linked to the green economy within or between local communities could be due to:
  - Climate mitigation projects (e.g. increases conflicts over land use and ownership)
  - Climate adaptation projects (e.g. unequal distribution of aid)
  - Natural capital projects (e.g. conservation restricts livelihoods)
  - Control over and location of energy projects (e.g. large-scale dams)

PAGE

1. ECONOMIC, ENVIRONMENTAL AND HUMAN DEVELOPMENT TRENDS

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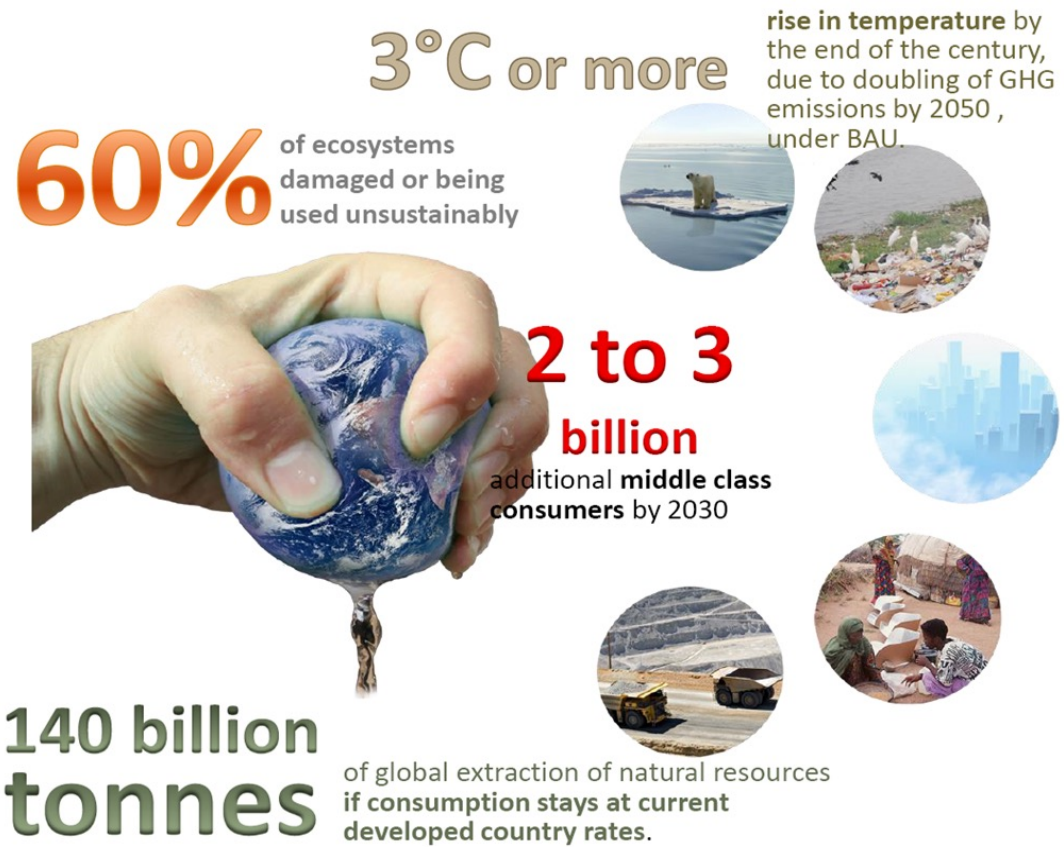
THE CONSEQUENCES OF CURRENT ECONOMIC DEVELOPMENT PATTERNS

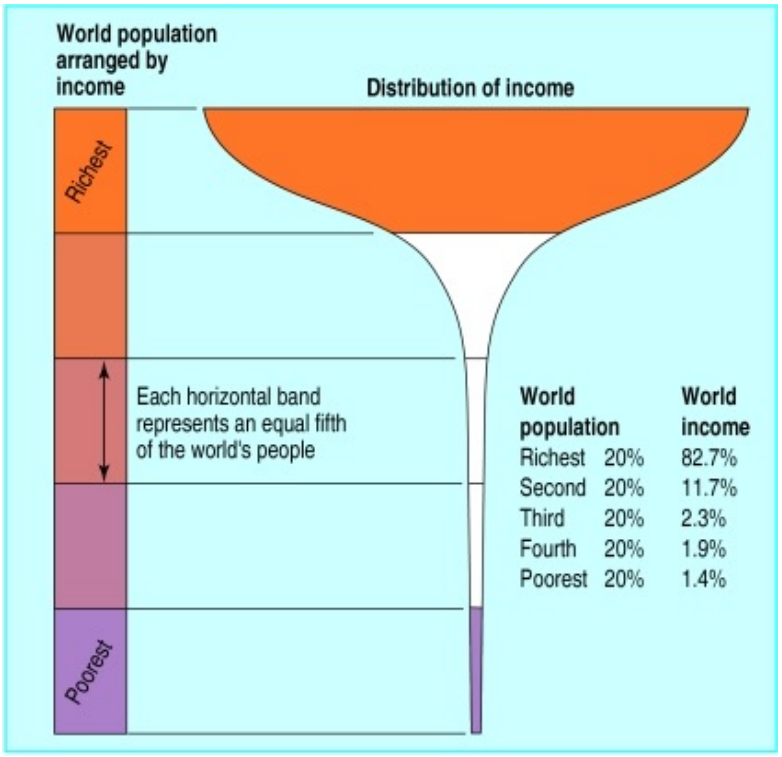


EC DEVCO, 2013

GLOBAL ENVIRONMENTAL CHALLENGES

ILO, 2014

INCOME DISTRIBUTION UNDER THE CURRENT GROWTH SCENARIO



80% of humanity continues to live on less than **$10/day**

The **poorest 40%** of the world's population produce only **5%** of global income

The **richest 1%** owns **50%** of the world's wealth (Oxfam 2015)

Natural resource management provided by the poor and the way environmental degradation affects the poor are not being accounted

The environmental threat, inequality and barriers, go hand in hand !

PAGE

2. RATIONALE AND BENEFITS OF GREENING THE ECONOMY

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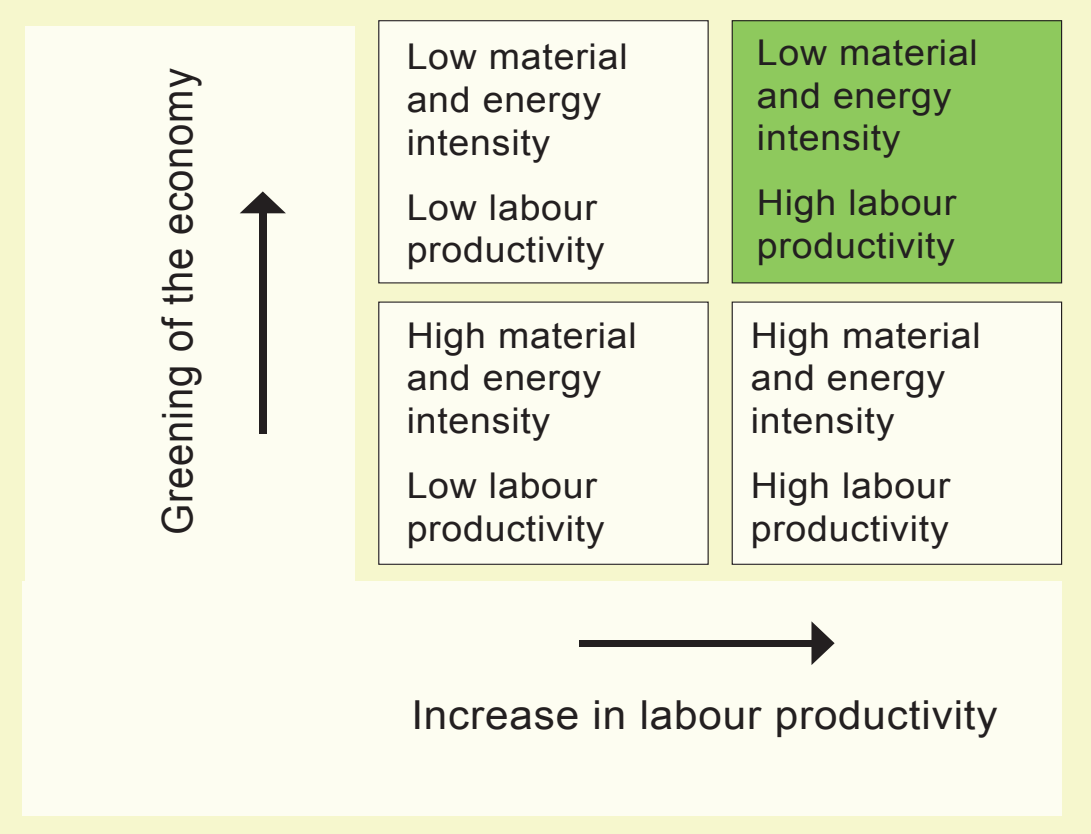
CLOSING THE GAP TOWARDS A GREEN ECONOMY



EMG, 2011

INCLUSIVE GREEN ECONOMY OPPORTUNITIES

PAGE

New economic opportunities and markets

Leap frog to cleaner technologies

Potential for net job creation and poverty reduction

THE TRIPLE BOTTOM LINE

Taking the sustainable development to the entreprise level.
Accounting for:

PAGE

3. DEFINITIONS FOR GREEN ECONOMY

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A VISION FOR A GREEN ECONOMY...

PAGE

"A green economy is one that …

- results in improved human well-being and social equity,
- while significantly reducing environmental risks and ecological scarcity."

DIVERSE PERSPECTIVES ON A GREEN ECONOMY

UNDESA, 2012

GREEN ECONOMY AND GREEN GROWTH

Green Growth:

- Is a similar concept to green economy
- Underscores that green policies are not detriment to economic growth and development
- Is used by: World Bank, OECD, GGGI, GGKP, UNESCAP

GREEN ECONOMY PRINCIPLES

PAGE

Type	Principles
Economic	• Recognizes natural capital and values • Integrated in economic development and growth models • Internalizes externalities • Promotes resource and energy efficiency • Creates decent work and green jobs
Environmental	• Protects biodiversity and ecosystems • Invests in and sustains natural capital • Recognizes and respects planetary boundaries and ecological limits • Advances international environmental sustainability goals (e.g. MDG 7)
Social	• Delivers poverty reduction, well-being, livelihoods, social protection and access to essential services • Is socially inclusive, democratic, participatory, accountable, transparent, and stable • Is equitable, fair and just – between and within countries and between generations

KEY ELEMENTS OF A GREEN ECONOMY TRANSITION

PAGE

- Value of natural capital
- Appropriate economic regulations and incentives
- Appropriate environmental regulations and law enforcement
- Sustainable production and consumption patterns
- Fair distribution of income and social standards
- Investment in training and environmental education

PAGE

4. GREEN ECONOMY, SUSTAINABLE DEVELOPMENT AND POVERTY ERADICATION

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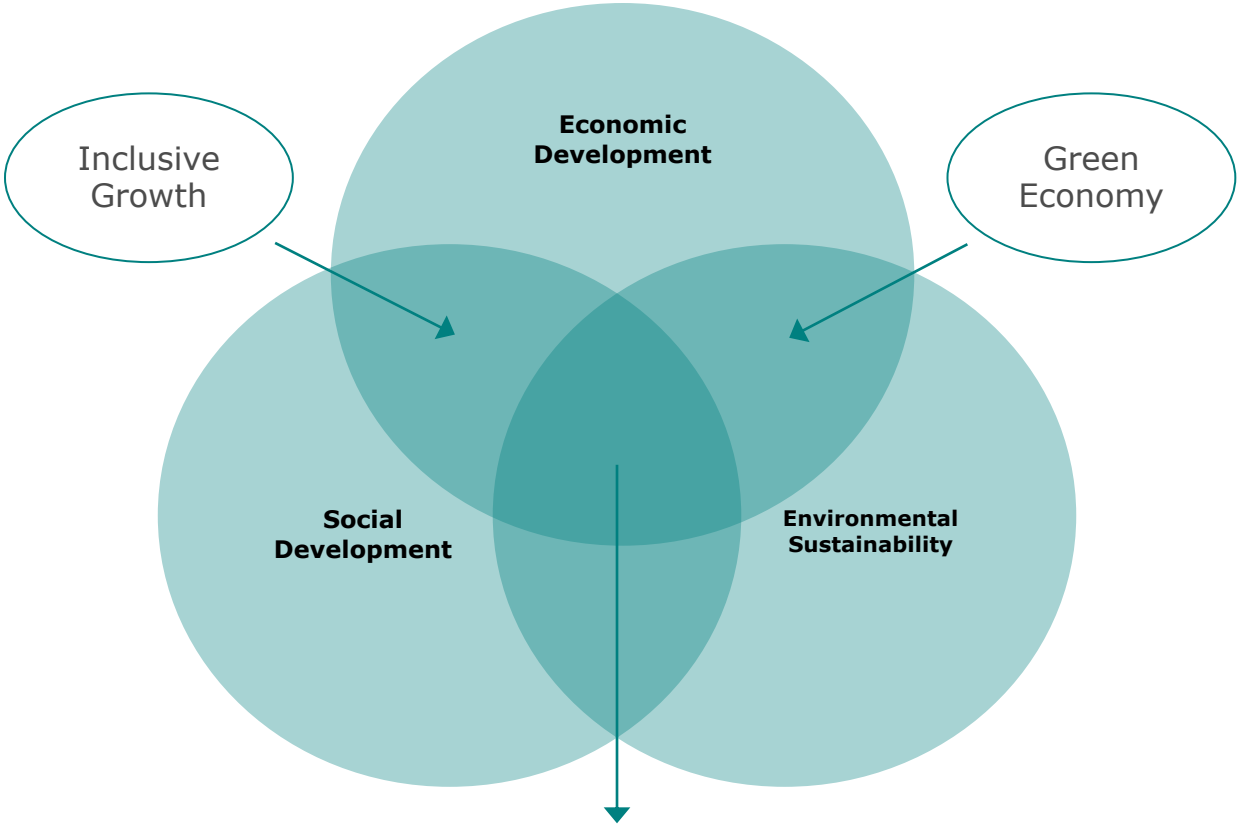
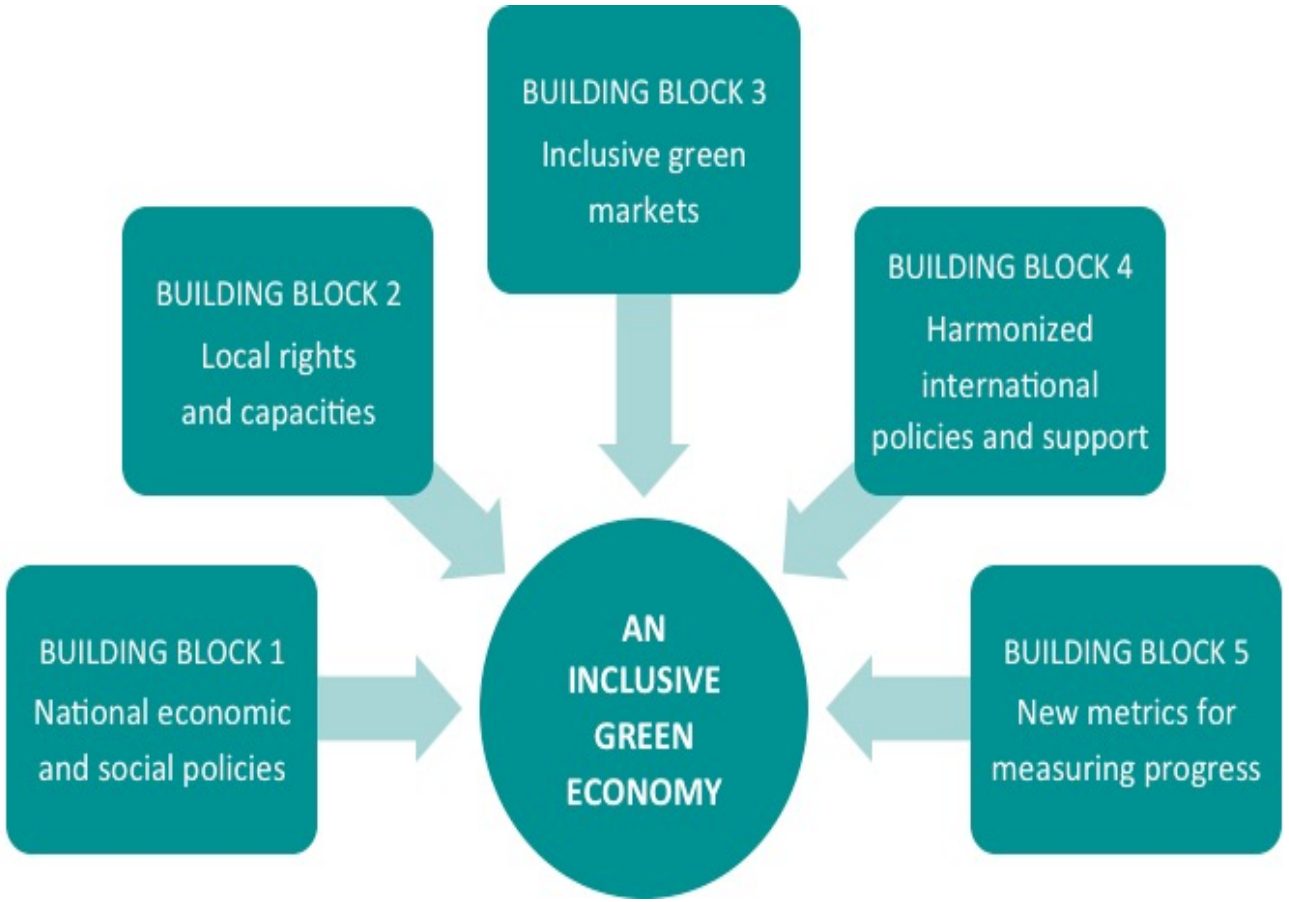
GREEN ECONOMY CONTRIBUTION TO SUSTAINABLE DEVELOPMENT



An inclusive green economy that can reduce poverty and inequality and sustain inclusive growth

UNDP, 2013

BUILDING BLOCKS OF A GREEN ECONOMY



PEP, 2012

EXPECTED GREEN ECONOMY FOR THE POOR

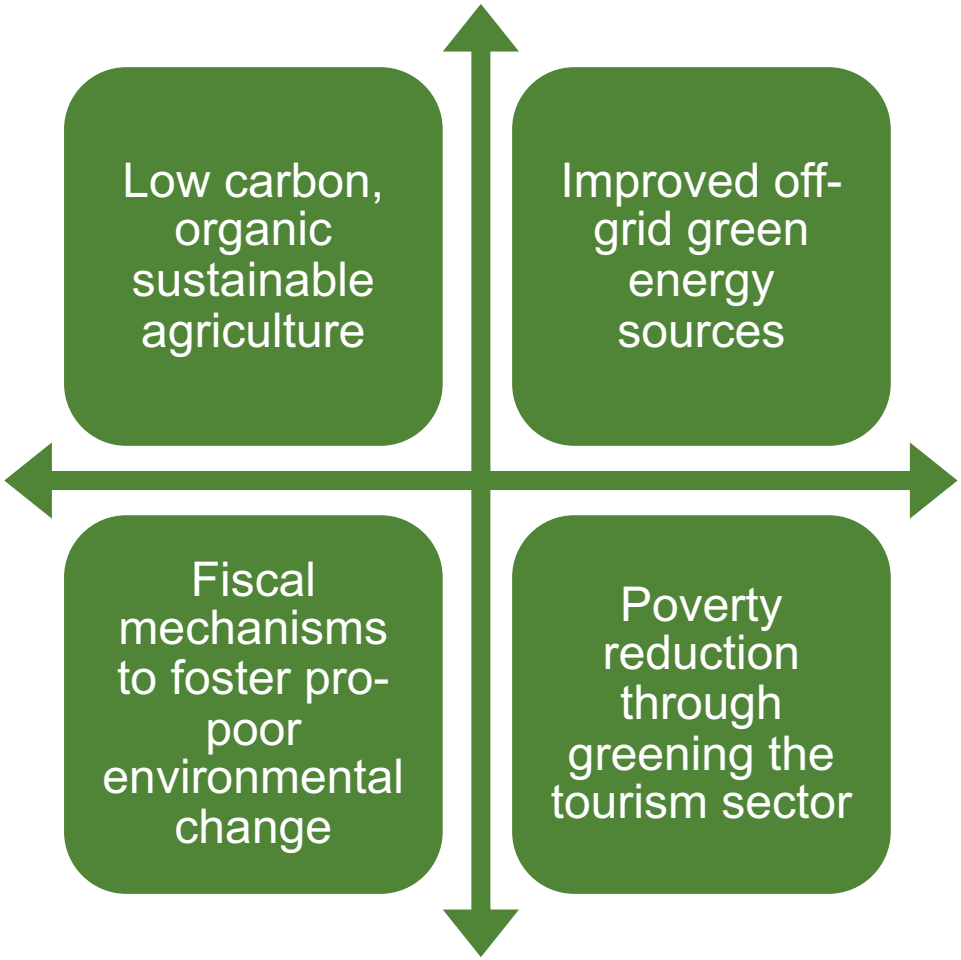
PAGE

3 key benefits include:

- Improved livelihoods
- Improved health conditions
- Improved resilience

PEP, 2013

OPPORTUNITIES FOR MAKING THE GREEN ECONOMY WORK FOR THE POOR



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5. NATURAL CAPITAL AND PUBLIC GOODS

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WHAT ARE PUBLIC GOODS AND SERVICES?

Non-excludable and non-rivalrous goods (and services):

- Individuals cannot be effectively excluded from use
- Use by one individual does not reduce availability to others

Examples:

Fresh air, national defense, street lightning

Negative externalities:

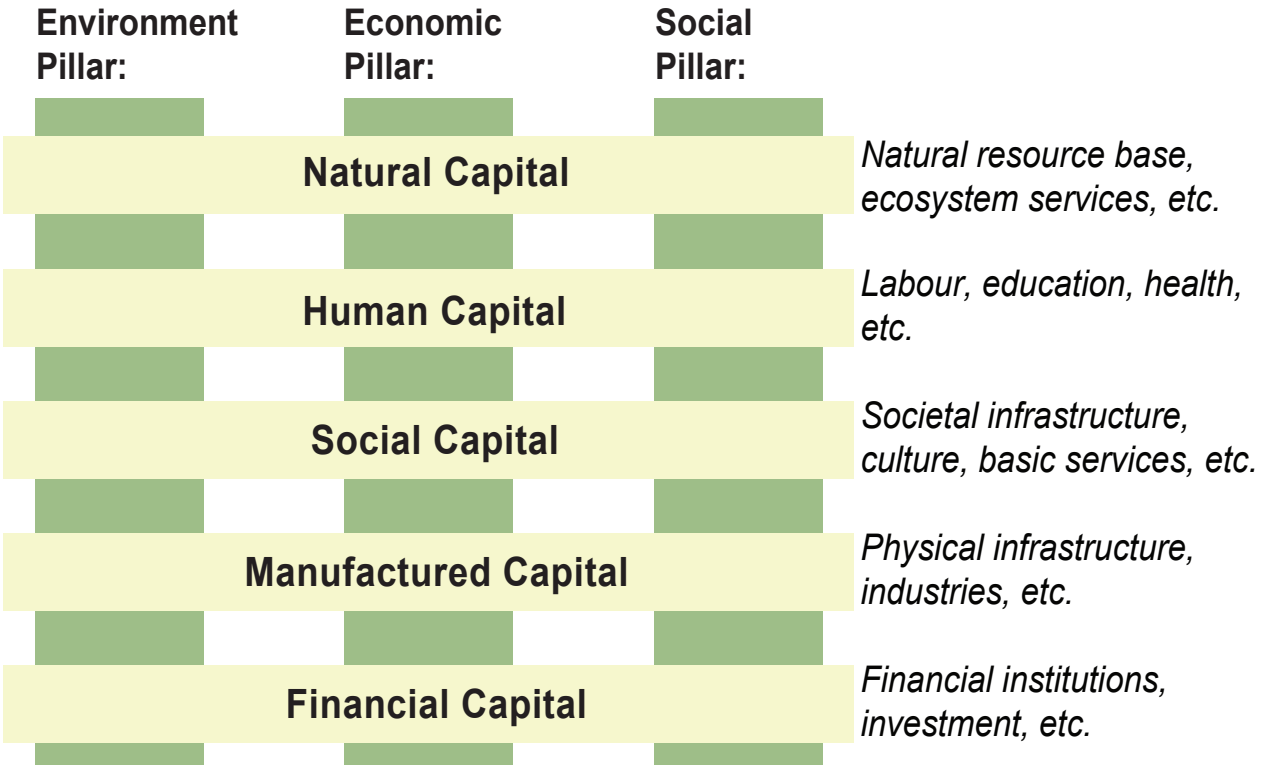
- « Free-rider problem », « tragedy of the commons »

Need for regulatory interventions

WHAT IS NATURAL CAPITAL?

- Provides habitat and basis for all living beings including mankind,
- Can be considered like an asset in a bank account that generates interest,
- Should not be depleted,
- 19 August: Earth Overshoot Day

5 TYPES OF CAPITAL AS ENABLERS OF SUSTAINABLE DEVELOPMENT



EXAMPLE: NATURAL CAPITAL DEPLETION AT LAKE WINNIPEG, CANADA

Nutrients and pesticides from agricultural run-off → Sewage discharge → A toxic algae, which is poisoning/destroying the natural capital of the lake



www.cbc.ca

www.livinglakes.ca

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6. ENVIRONMENTAL EXTERNALITIES

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WHAT IS AN ENVIRONMENTAL EXTERNALITY?

Economic Externality

Effect of an activity on an uninvolved party

Environmental Externality

Uncompensated /ignored environmental effects deriving from production and consumption

Full cost of activity not reflected by market mechanisms/market prices

Creates markets distortions and misallocation of capital

http://www.greenbiz.com

EXAMPLE OF ENVIRONMENTAL EXTERNALITY: THE USE OF PESTICIDES IN RICE PRODUCTION

Pesticides used by farmers in rice production can:

Pollute the water resources → Be transferred to other areas through the water system → Cause health problems to humans and animals that use the water resources in a different area

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7. ECOSYSTEM SERVICES

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WHAT ARE ECOSYSTEM SERVICES?

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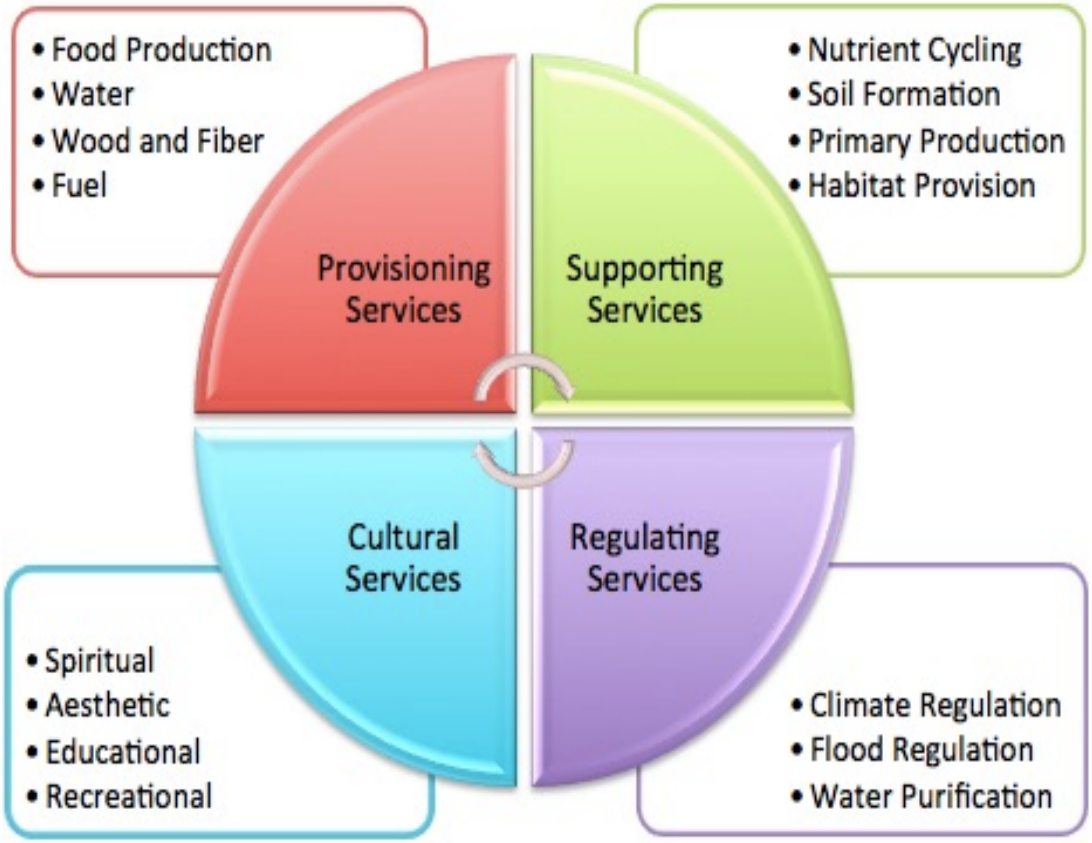


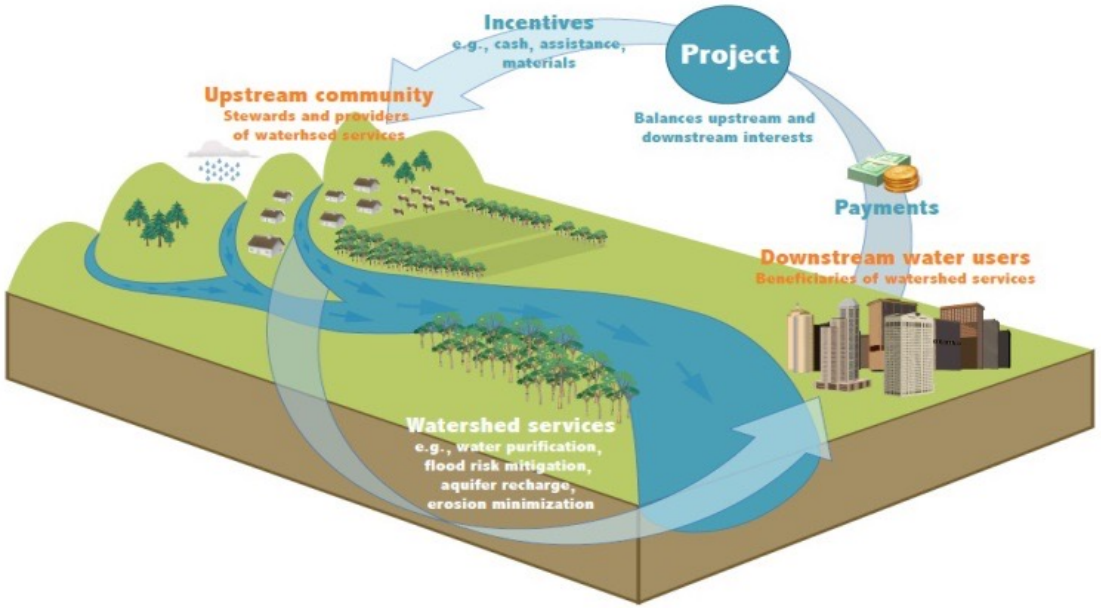
Source: Millenium Ecosystem Assessment, 2005.

THE ECONOMICS OF ECOSYSTEMS AND BIODIVERSITY

Launched to develop a global study in the economics of biodiversity loss

Has found that businesses cause economic damage amounting to trillions of USD by destrying biodiversity and ecosystem services

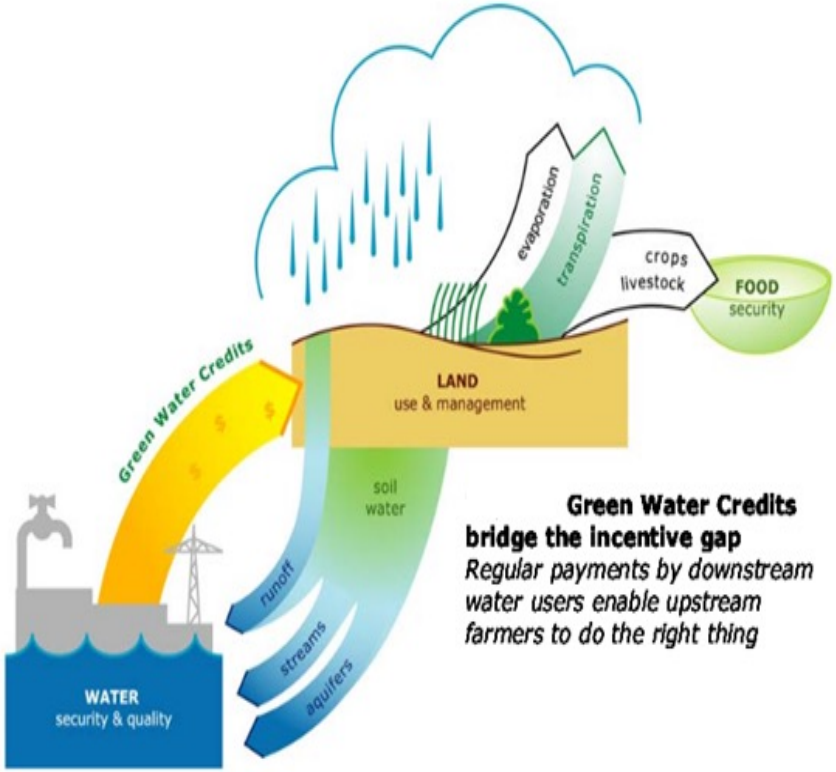
PAYMENT FOR ECOSYSTEM SERVICES: WATERSHED MANAGEMENT



PES is a mechanism that puts a price on the services provided by the ecosystem

The revenue generated can be used for ecosystem conservation

EXAMPLE: GREEN WATER CREDITS (GWC) IN KENYA



Green Water Credits
bridge the incentive gap
Regular payments by downstream water users enable upstream farmers to do the right thing

Before and After!

PAGE

8. RESOURCE EFFICIENCY

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WHAT IS RESOURCE EFFICIENCY

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Measures to achieve resource efficiency

- Reduction in the material intensity
- Reduction in the energy intensity
- Reduced dispersion of toxic materials
- Improved recyclability
- Maximum use of renewable resources
- Greater durability of products
- Increased service intensity of goods and services.

ec.europa.eu

Creating more goods and services while using fewer resources and creating less waste and pollution

EXAMPLES FOR RESOURCE EFFICIENCY MEASURES

	Approach	Examples of resource efficiency measures
	On-site reuse	Capturing waste water for raw material recovery and clean water recirculation.
	Change in inputs	Switching from fossil fuel to coconut shells.
	Good housekeeping	Training employees in the hotel industry to segregate solid waste and use be resource and energy efficient

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9. CLIMATE CHANGE AND GREEN ECONOMY

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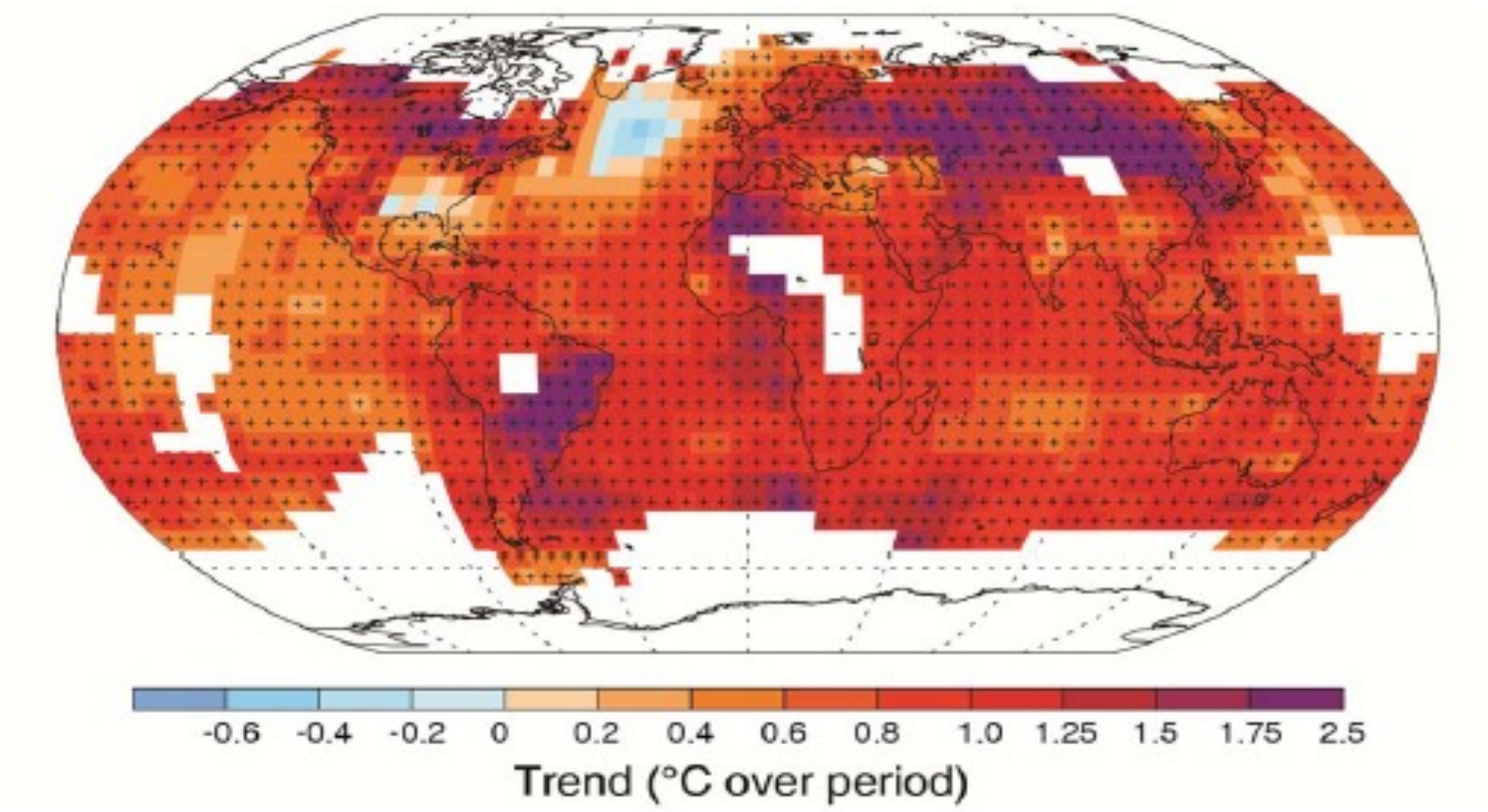
OBSERVED EFFECTS OF CLIMATE CHANGE



IPCC, 2013

CLIMATE CHANGE HAS AN IMPACT ON:

PAGE

Ecosystems	Biodiversity, carbon storage, habitats, …
Human systems	Agriculture, fresh water, health, …
Urban systems	Transport, buildings, lifestyle, …
Economic systems	Energy, manufacturing, natural capital industries, …
Social systems	Equity, migration, peace and conflict, …

UNCC: Learn, 2013

ADVANCING CLIMATE RESILIENT LOW-CARBON DEVELOPMENT

PAGE

Mitigation

Actions taken to cut net emissions of greenhouse gases to reduce climate change and to preserve and enhance GHG sinks and reservoirs

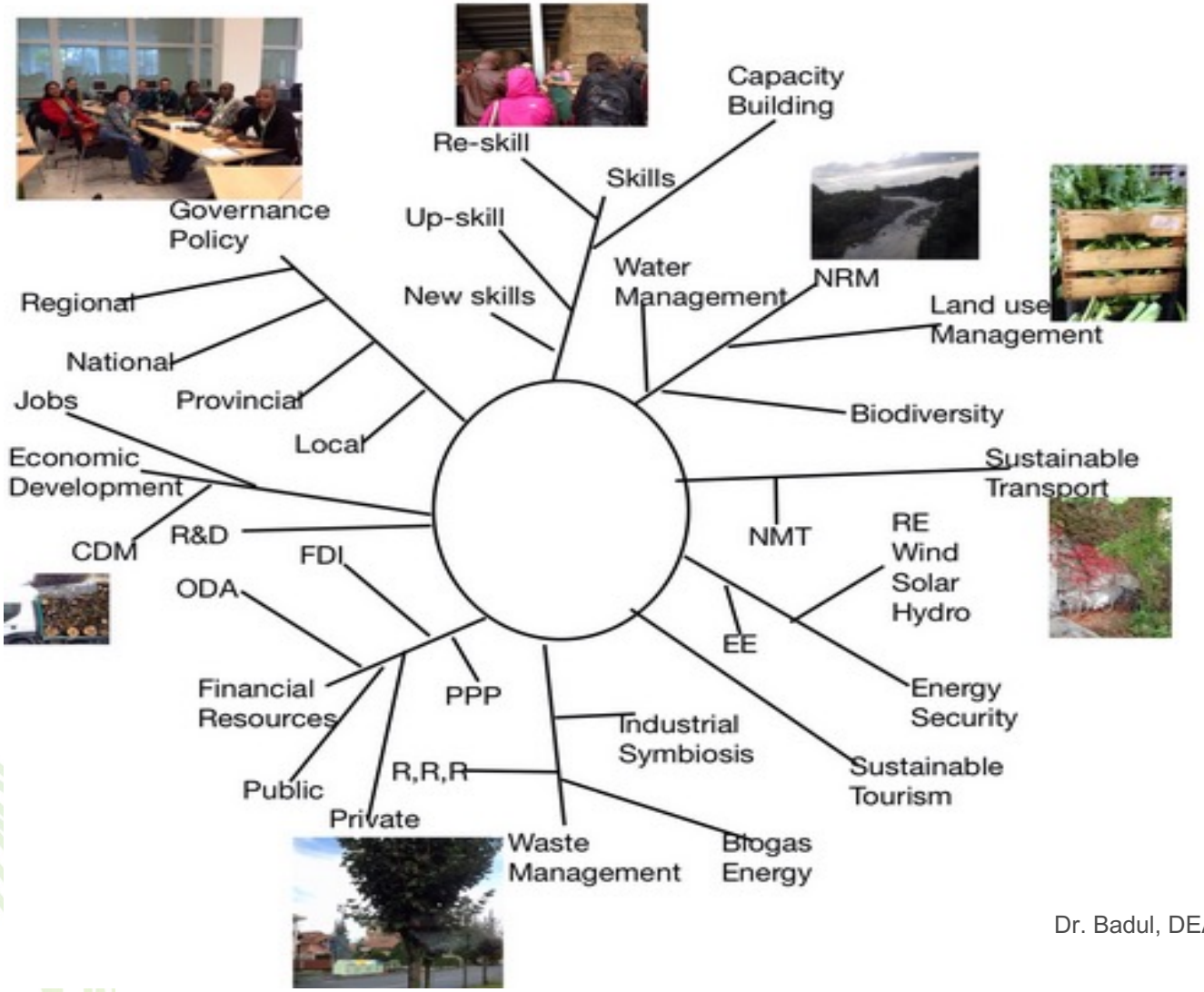
Source: UNEP

Adaptation

Actions taken to help cope with changing climate conditions and impacts

Source: UNITAR

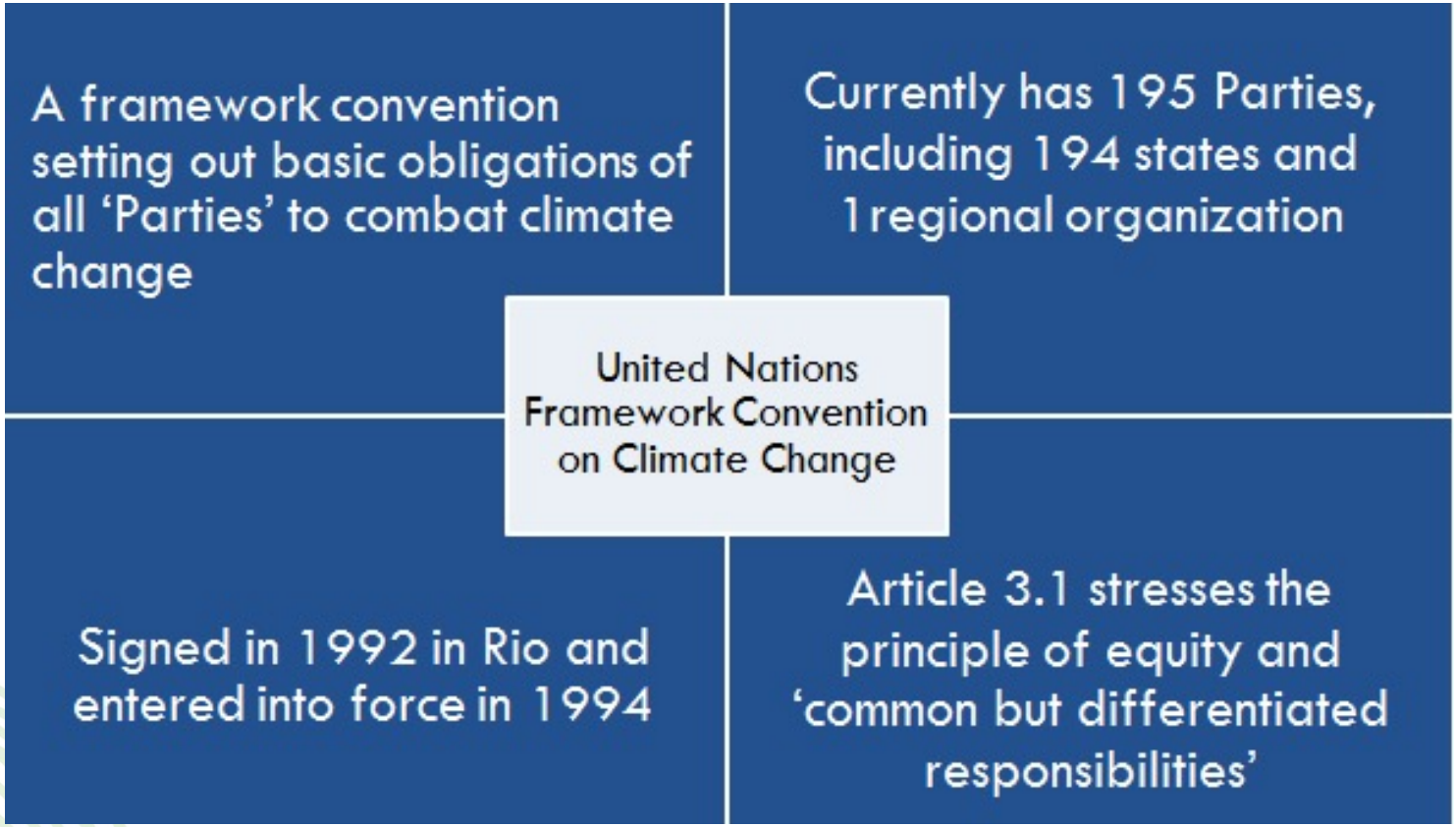
SOUTH AFRICA: CLIMATE CHANGE RESPONSE



Dr. Badul, DEA, 2014

WHAT IS THE ROLE OF THE UNFCCC IN THE GLOBAL RESPONSE TO CLIMATE CHANGE

PAGE



UN CC: Learn, 2013

INTERNATIONAL ACTION FOR CLIMATE CHANGE

PAGE

Peru 2014

Working draft of binding global climactic agreement

LIMA COP20 | CMP10
UN CLIMATE CHANGE CONFERENCE 2014

Paris 2015

Adoption of a legally-binding agreement with subsequent pledges by all countries

SOLUTIONS COP21 PARIS 2015

?

UNFCCC, 2014

PAGE

10. GREEN INDUSTRY

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WHAT IS GREEN INDUSTRY?

PAGE

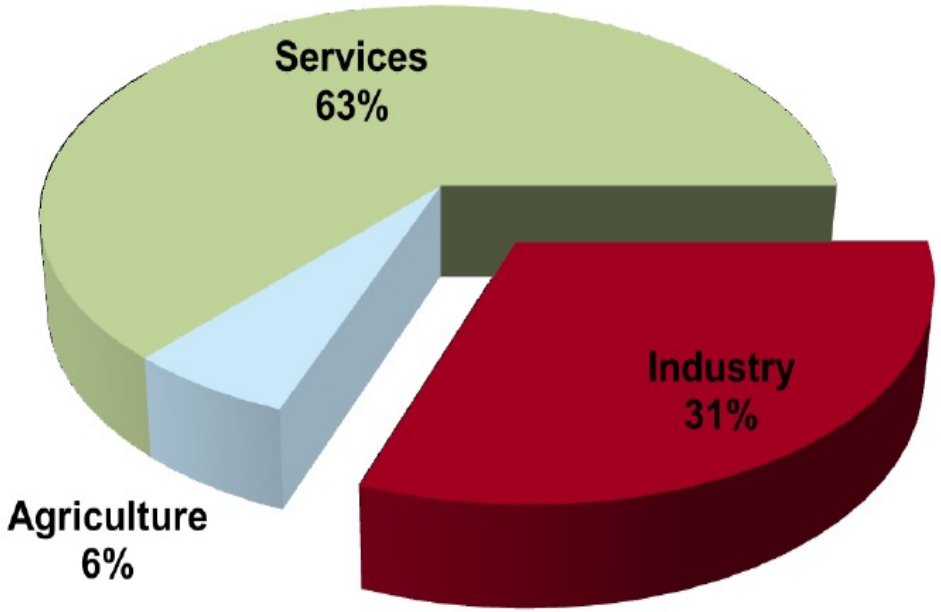
Green Industry promotes industrial production and development that does not come at the expense of the health of natural systems or lead to adverse human health outcomes

UNIDO
2009

GLOBAL CONTEXT OF INDUSTRIAL DEVELOPMENT

- Industrialization is integral to economic development
- Greening the industry will result in triple bottom line development benefits

Global GDP composition



CIA, 2013

GREENING EXISTING AND CREATING NEW GREEN INDUSTRIES

PAGE

Greening Existing Industry *Improve the environmental performance of existing industries*	***Creating New Green Industries*** *Support creation of industries delivering environmental goods and services*
▪ Efficient use of materials, energy and water ▪ Reduction of wastes and emissions ▪ Safe management of chemicals ▪ Phasing out toxic substances ▪ Switching to renewable energy sources ▪ Product and process redesign ▪ etc...	▪ Reduce, reuse and recycle (3R) industries ▪ Pollution control technology and equipment ▪ Renewable and energy-efficient technologies ▪ Waste management and resource recovery ▪ Environmental advisory and analytical services ▪ etc...

3 Rs AND THE CONCEPT OF CIRCULAR ECONOMY

REDUCES THE CONSUMPTION OF RESOURCES AND THE GENERATION OF WASTE

REUSES AND RECYCLES WASTE AND OTHER RESOURCES THROUGHOUT THE PRODUCTION, DISTRIBUTION AND CONSUMPTION PROCESSES

NATIONAL EXAMPLES

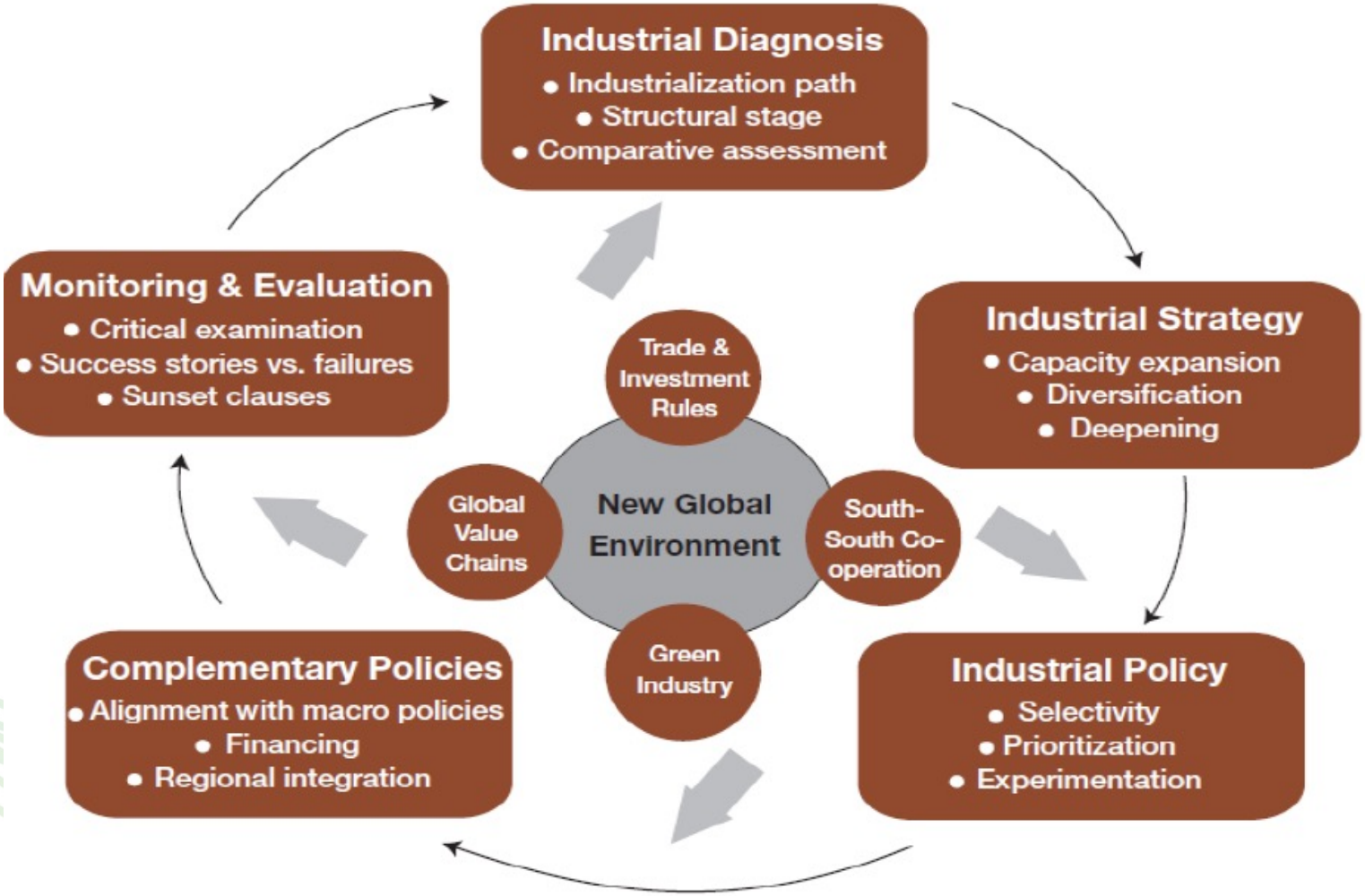
- Circular economy legislation in China
- « 3R » concept in Japan

OPPORTUNITIES AND RISKS ASSOCIATED WITH GREENING THE INDUSTRY

PAGE

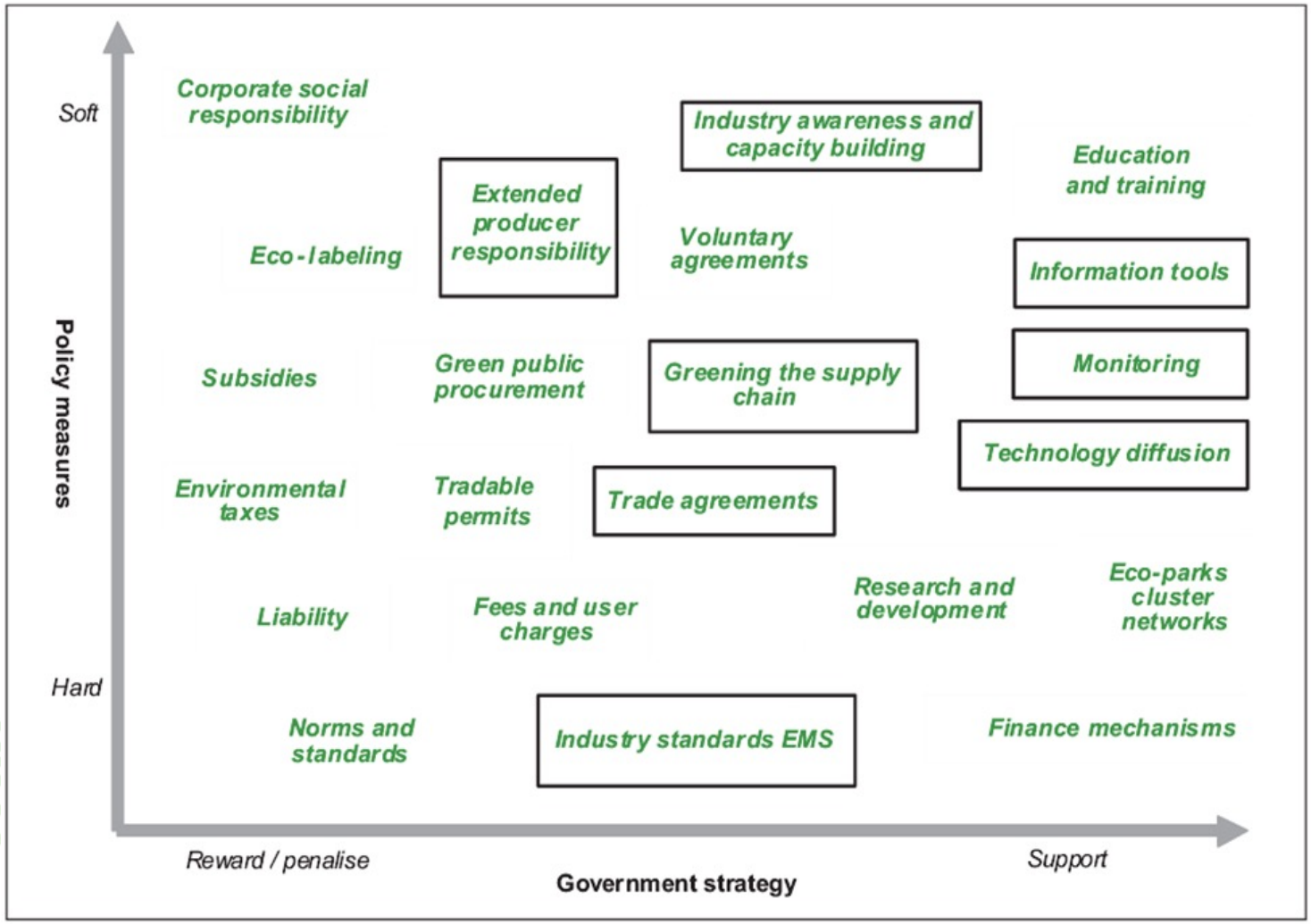
Opportunities	Risks
• *Economic:* More Innovation and Growth; Increased Resilience; Competitiveness of production • *Social:* More Employment, Rising Incomes and Empowerment • *Environmental:* More Efficient Resource Use; Less Waste and Pollution • Avoiding Lock-In	• Holistic System of Development is Hard to Design and Implement • Difficulty of Rent Management • Risk of Misallocation/Political Capture • Financing Green Industries: Fiscal Commitments

DESIGNING AND IMPLEMENTING A GREEN INDUSTRY STRATEGY



UNIDO, 2014

POLICY MATRIX FOR THE GREENING OF INDUSTRIES



UNEP, 2013

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11. KEY SECTORS FOR AN INCLUSIVE GREEN ECONOMY

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GREENING SECTORAL PLANNING

PAGE

Sector-level policies, programmes and investments « operationalize » green vision

Key areas for inclusive green economy transformation in developing countres include:

- AGRICULTURE
- FORESTRY
- WASTE
- WATER
- TRANSPORT
- TOURISM
- FISHERIES
- ENERGY
- BUILDINGS
- MANUFACTURING

KEY SECTORS FOR INVESTING IN NATURAL CAPITAL

Ecosystems and natural capacity considerations are particularly important for:

- Agriculture
- Water
- Forestry
- Fisheries
- Tourism

UNEP

KEY SECTORS FOR INVESTING IN ENERGY AND RESOURCE EFFICIENCY

Efficiency and environmental quality considerations are particularly relevant for:

- (Renewable) Energy
- Manufacturing
- Waste
- Buildings
- Transport
- Tourism

UNEP

A FEW EXAMPLES OF GREENING KEY ECONOMIC SECTORS

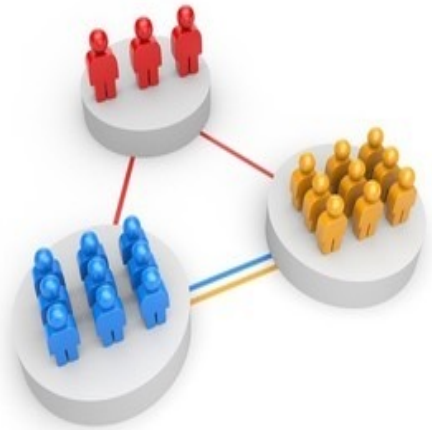
SECTORS	EXAMPLES OF GREENING
RENEWABLE ENERGY	Electricity production from hydro, wind, solar power and biofuels, as well as traditional biomass
BUILDINGS	Energy and water efficiency construction, green products and building materials
TRANSPORTATION	Electric and hybrid vehicles, public transportation, car share, biking
WATER AND SANITATION	Water recycling, low water landscaping, water demand management, smart irrigation
WASTE MANAGEMENT	Reuse, recycle, toxics remediation, brownfield clean-up, sustainable packaging, zero waste
AGRICULTURE	Organic agriculture, sustainable forestry products
TOURISM	Sustainable tourism, eco-tourism
MANUFACTURING	Recycling industry, remanufacturing

CROSS-CUTTING/THEMATIC AREAS

Some topics are cross-sectoral in nature
(e.g. biodiversity, tourism)

Mainstream cross-cutting issues in sectoral strategies

Cross-sectoral national strategy
(e.g. National Biodiversity Strategy)



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12. POLICY AND REGULATORY TOOLS

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« COMMAND AND CONTROL » TOOLS: RATIONALE AND TYPES

- Regulatory instruments establish bans or limits, introduce product or process norms and standards to affect production and consumption patterns.

- Regulatory tools may be, for example:
  - Environmental quality standards
  - Technical/emissions standards
  - Restrictions and bans
  - Property laws and access rights

STRENGTHS AND LIMITATIONS OF POLICY AND REGULATORY TOOLS

Strengths	Limitations
Easy to set	Enforcement/monitoring costs might be high
Effective in achieving a target	Industry is reluctant to submit to regulation
Address visible causes of damage/pollution	Provides little incentive for improvement beyond the target
Regulatory tools are most effective when used in combination with other tools!	

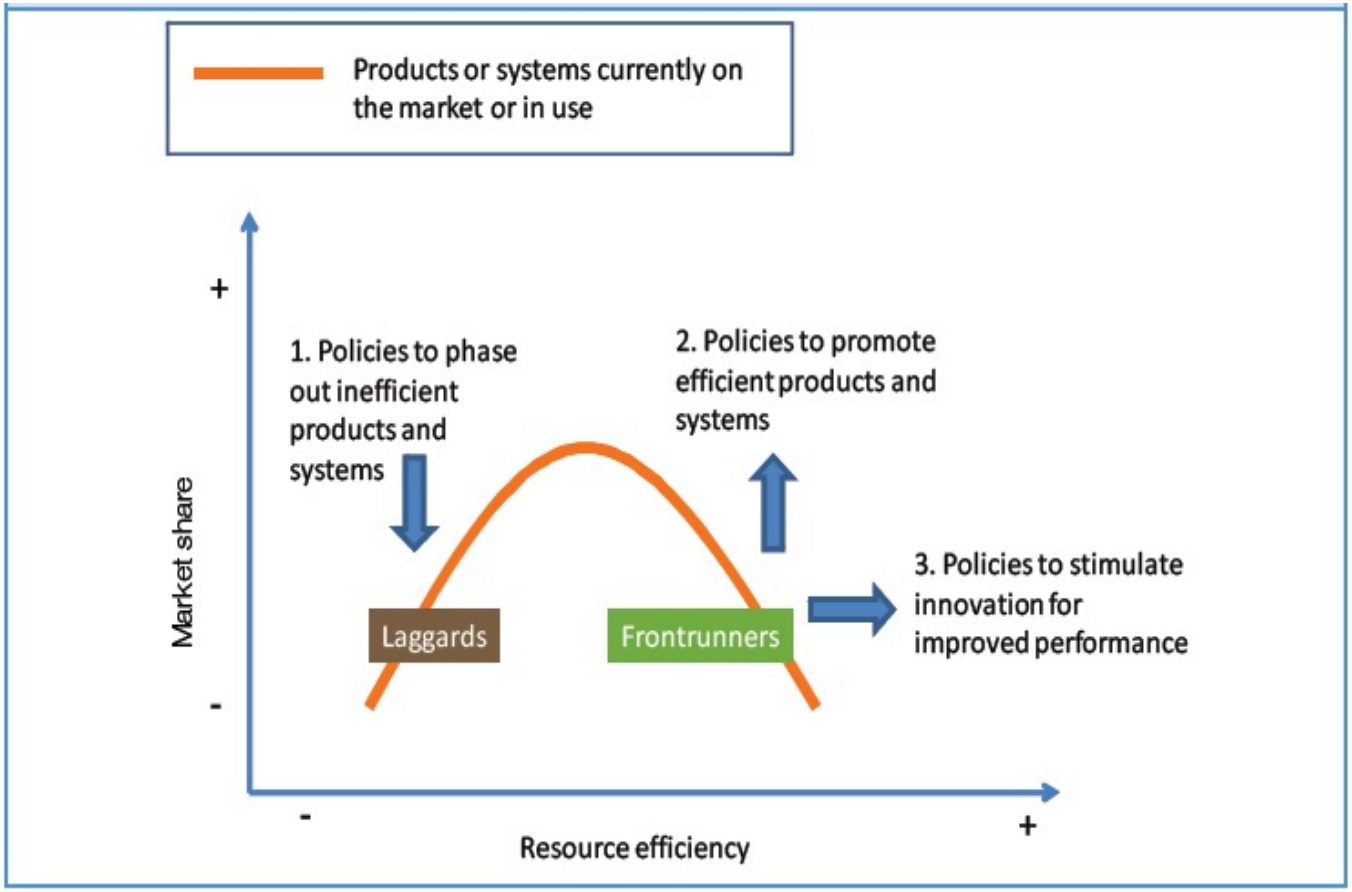
EXAMPLE: INTRODUCING FUEL AND VEHICLE STANDARDS

Worldwide Automobile Efficiency/GHG Standards

Country/Region	Regulated metric	Program details, reduction in CO_2-per-distance emissions
European Union	CO_2 emissions (CO_2/km)	40% reduction, MY 2008-2020 EU NEDC
United States	Fuel economy (mi/gal)	20% reduction, MY 2011-2016 U.S. FTP
	GHG emissions (CO_2e/mi)	
Japan	Fuel economy (km/L)	19% reduction, MY 2010-2015 Japan JC08
China	Fuel consumption (L/100km)	12 % reduction, MY2008-2015 EU NEDC cycle
Canada	GHG emissions (CO_2e/mi)	20% reduction, MY 2011-2016 U.S. FTP
Australia	Fuel consumption (L/100km)	10% reduction, MY 2004-2010 EU NEDC
South Korea	Fuel economy (km/L)	13% reduction, MY 2012-2015 U.S. FTP
	CO2 emissions (CO_2/km)	

International Council on Clean Transportation, 2010

APPLYING REGULATORY TOOLS IN COMBINATION WITH OTHER MEASURES



UNEP, 2012

Three Types of Policy Interventions for Resource Efficiency

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13. GREEN ENTREPRENEURSHIP AND THE ROLE OF THE PRIVATE SECTOR

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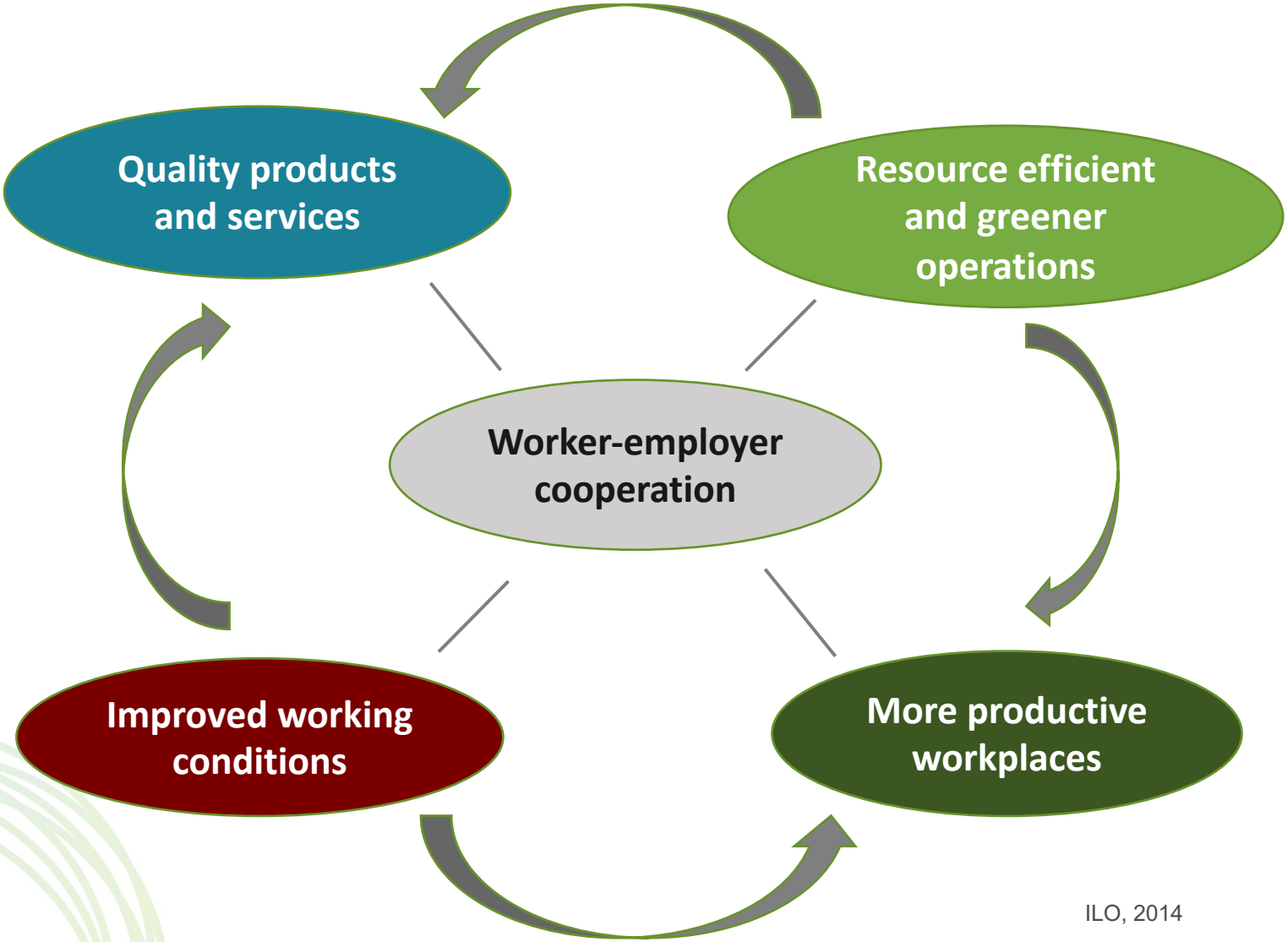
WHAT MAKES A GREEN BUSINESS?



ILO, 2014

POLICIES AND INITIATIVES TO STIMULATE GREEN ENTREPRENEURSHIP

As ILO experience in Indonesia and China has demonstrated, green entrepreneurship can be stimulated by:

- Entrepreneurship training in universities and colleges
- Targeting the youth
- Preferential tax policy
- Tax breaks (administrative fees)
- Restrictions on traditional enterprises
- Coordinated action across public institutions
- Enabling access to finance (micro-credits, grants)

ILO, 2014

ENTREPRENEURSHIP EXAMPLE: YOUNG INDONESIAN ENTREPENEUR GOES GREEN

Ilham Rhamanda

Indonesia

- Owner of a sportswear SME, 12 employees
- Installed a filter to prevent untreated waste water
- Contemplates additional measures to increase resource efficiency

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14. KEY GREEN ECONOMY PROGRAMMES AND INITIATIVES WITHIN THE UN SYSTEM

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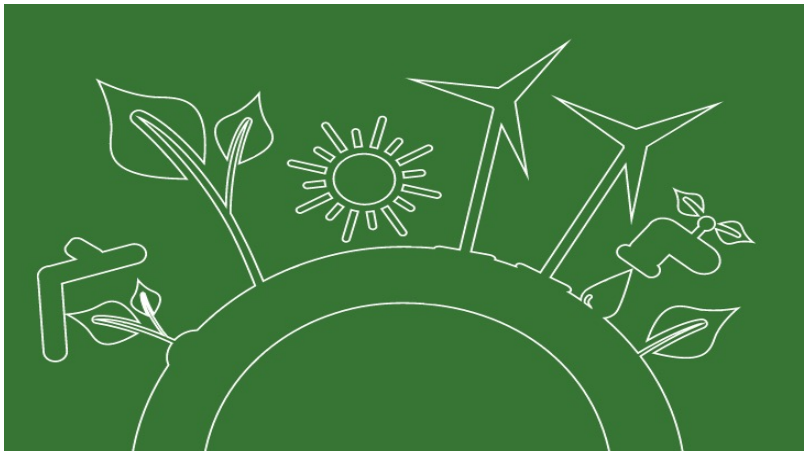
GREEN ECONOMY INITIATIVE (UNEP)

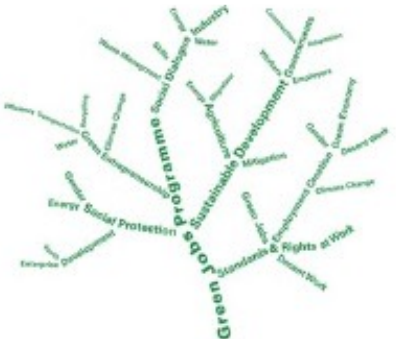
PAGE

- Launched in 2008
- Provide analysis and policy support for a transition to a green economy
- Key activities:
  - Production of the Green Economy Report (2011)
  - Advisory services on country level
  - Partnering with NGOs, academia, UN institutions, and the private sector



GREEN JOBS PROGRAMME (ILO)

- Promotion of policy coherence through research and advocacy
- Support on national level through advisory services
- Capacity development of constituents and partners



GREEN INDUSTRY INITIATIVE (UNIDO)

PAGE

- Promotes the switch to clean technologies and the implementation of environmental agreements
- Works with industrial institutions in countries, who in turn provide assistance to enterprises and entrepreneurs
- Contributes to building awareness, knowledge, and capacities

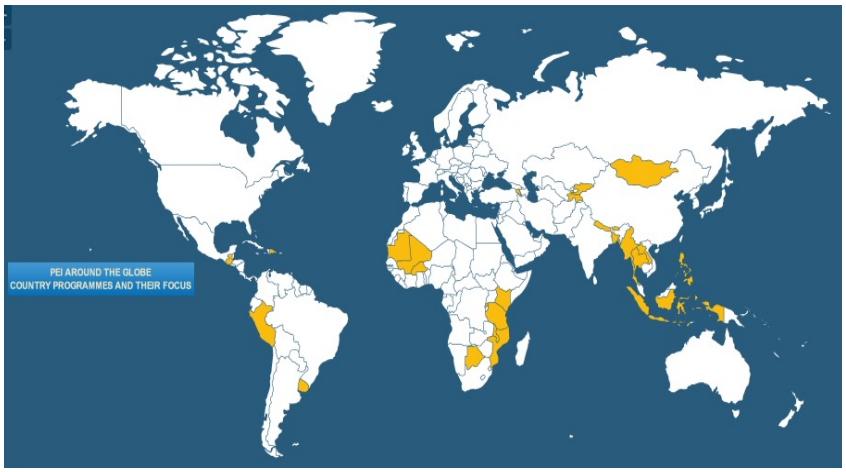
PARTNERSHIP FOR ACTION ON GREEN ECONOMY - PAGE

- A multiyear programme responding to the Rio+20's call for action
- 5 UN agencies: UNEP, ILO, UNIDO, UNDP, UNITAR
- PAGE supports countries in building national green economy strategies that:
  - Generate new jobs and skills
  - Promote clean technologies
  - Reduce environmental risks and poverty
- PAGE partner countries include: Mongolia, Peru, Burkina Faso, Mauritius, Ghana, Senegal, South Africa, and China (regional level)

PAGE PARTNERSHIP FOR ACTION ON GREEN ECONOMY

POVERTY ENVIRONMENT INITIATIVE – PEI (UNEP, UNDP)

- UN PEI is a global programme that:
  - Supports efforts to mainstream *poverty-environment* linkages into national policy processes
  - Provides financial and technical support for pro-poor environmental management
  - Works in 24
- Supports countries across Africa, Asia, Europe, and Latin America



GREEN INDUSTRY PLATFORM (UNIDO, UNEP)

PAGE

- Multi-stakeholder partnership forum aiming to promote Green Industry
- Members include government, business and civil society organizations
- A joint initiative of UNIDO and UNEP

GIP GREEN INDUSTRY PLATFORM

10-YEAR FRAMEWORK OF PROGRAMMES ON SUSTAINABLE CONSUMPTION AND PRODUCTION

Adopted at the Rio+20 Conference:

- 10YFP: a flexible, and non-exhaustive list of programmes
- The 10YFP aims at:
  - Scaling up SCP and resource efficiency
  - Decoupling environmental degradation and resource use from economic growth
  - Poverty eradication and social development
- Global SCP Clearinghouse - knowledge platform for SCP

"The 10YFP is a global framework of action to enhance international cooperation to accelerate the shift towards SCP in both developed and developing countries."

UNEP

Global Action for Sustainable Consumption and Production

CLIMATE INFORMATION PLATFORM (UNDP)

- Facilitates access to information and knowledge on climate change
- 5 climate change platforms managed by the UNDP
  - Adaptation Learning Mechanism
  - ClimateTechWiki
  - Climate Finance Options
  - Voluntary REDD+ Database
  - Energy Dashboard

UN SUSTAINABLE DEVELOPMENT KNOWLEDGE PLATFORM (UN DESA)

- Established in 2012 coordinated by UNDESA
- The goals of the platform:
  - Provide a central hub for resources and information
  - Coordinating the intergovernmental process
  - Follow-up from major conferences
- A series of green economy guidebooks has been published!

GREEN GROWTH CAPACITY DEVELOPMENT SUPPORT (UNESCAP)

The ESCAP Secretariat provides:

- Regional platform to support Green Growth
- Country support for mainstreaming Green Growth into national plans
- Training of Trainers for policy-makers and other stakeholders
- Capacity building platform

WIPO GREEN – THE SUSTAINABLE TECHNOLOGY MARKETPLACE (WIPO)

- Pilot initiative of WIPO
- Interactive marketplace
- Promotes innovation and diffusion of green technologies
- Connects the supply and demand ends of technological solutions

WIPO | GREEN
The Sustainable Technology Marketplace

PAGE

ANY QUESTION?