CERTIFIED EXECUTIVE TRAINING ON GREEN ECONOMY

WGEO EXECUTIVE TRAINING COURSE
ON SCALING UP TRANSITION TO
A GREEN ECONOMY ON A PATH TOWARDS
IMPLEMENTING THE UNITED NATIONS
2030 SUSTAINABLE DEVELOPMENT AGENDA

MODULE DELIVERED BY

WGEO
WORLD GREEN ECONOMY ORGANIZATION

GREEN INVESTMENT PROMOTION

MODULE "GI"

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COHORT Five
8-10 July 2019
Tashkent, Uzbekistan

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Agenda

REGIONAL MINISTERIAL CONFERENCES ON GREEN ECONOMY

1 Green Economy in a Nutshell
2 Global Green Investment Trends
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4 Sustainable Water Use
5 Sustainable Agriculture
6 Sustainable Forest Management
7 Sustainable Fisheries
8 Green Industry
9 Agroindustry
10 Ecotourism
11 Sustainable Cities
12 Green Buildings
13 Green Transport systems
14 Integrated Waste Management
15 Sustainable Finance

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Green Economy in a Nutshell

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- Traditional development patterns during the last decades have prioritized investments in *physical capital* (e.g. infrastructure) with the aim to increase economic growth as opposed to *human & natural capital*
- The considerable accumulation of *financial capital*, reached well beyond the real value of assets, has generated considerable economic growth, but resulted in the worst global economic recession since the Great Depression of the 1930s
- It was estimated that due to the *economic & financial crisis* every 1% fall in growth in developing economies could translate into an additional 20 million people consigned to poverty (MGI 2009)
- The financial sector crisis & the subsequent *global economic slow down*, wiped out US$ 28.8 trillion in global wealth captured in equity & real estate values between the 2008 & mid 2009
- In 2008 the total value of the *world's financial assets* fell by US$ 16 trillion to US$ 178 trillion from the worldwide store of financial assets that stood at US$ 194 trillion pre crisis (MGI 2009)

Financial & Economic Crisis

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- 20% of the planet's *green land* is less productive than 20 years ago
- 20 million hectares of *tropical forests* are cleared each year for agriculture & other uses
- *Species* abundance is down by 60% since 1970 harming human health, development & even security
- 1/3 of the *fish stock* are overfished & a further 60% are overfished beyond sustainable limits
- Current level of *greenhouse gases (CO2)* in the atmosphere is 405.5 ppm in 2017
- 39 million people suffered *acute food insecurity* because of climate-related disasters in 2017
- Cost of *environmental degradation in Egypt* estimated at 4.8% of GDP (WB, 2002)

Environmental Degradation

- *Richest 1%* of the population owns *half of the world's wealth*
- Almost *1/2* of the world lives on less than *US$ 5.5/day*
- At least *80%* of humanity lives on less than US$ 10/day
- Though *700 million* people were reduced from extreme poverty decades (mainly in China & India), *1.2 billion* remain in a state of destitution

Social Justice - Poverty

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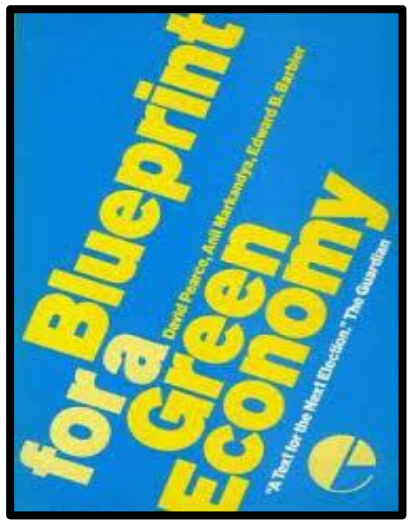
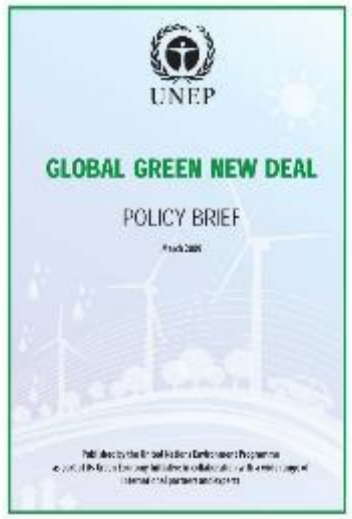


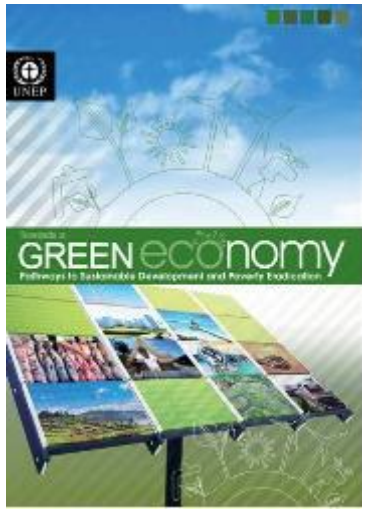
1989

The term “green economy” appeared in a publication entitled “Blueprint for a Green Economy” (Pearce et al. 1989)



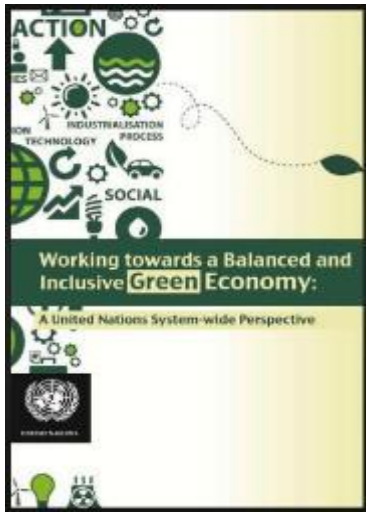
2009

A Global Green New Deal: Rethinking the Economic Recovery”, commissioned by UNEP (Barbier 2010)



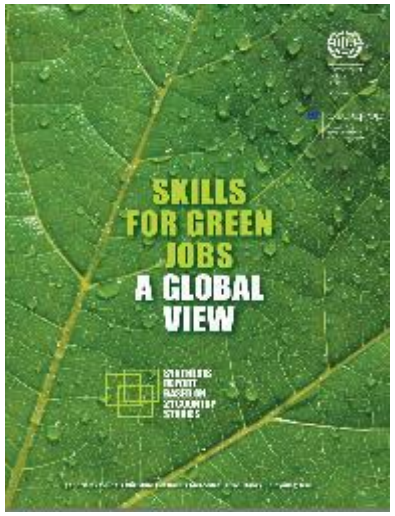
2011

Towards a Green Economy: Pathways to Sustainable Development & Poverty Eradication UNEP 2011



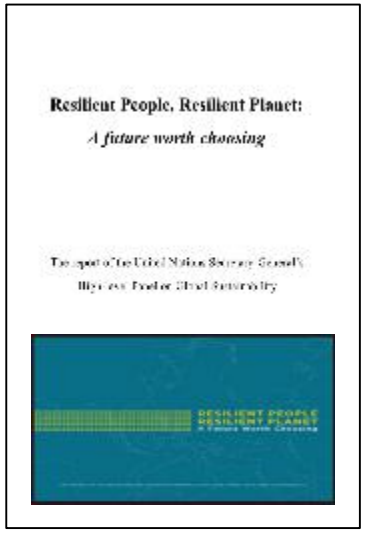
2011

Working Towards a Balanced and Inclusive Green Economy - A United Nations System-wide Perspective”, developed under the United Nations Environment Management Group (EMG 2011)



2011

“Skills for Green Jobs – A Global View”, a study by ILO (ILO 2011)



2012

“Resilient People, Resilient Planet: A Future Worth Choosing”, a report by the Secretary-General’s High Level Panel on Global Sustainability (2012)

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"A green economy is one that results in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities" (UNEP 2010)

The Green Sustainable Economy is one in which the vital linkages among the economy, society, & the environment are taken into account & in which adopting sustainable consumption & production patterns while contributing to resource efficiency, reduction of waste, pollution, & use of resources (energy, water, material input) will revitalize & diversify the economy, create decent employment opportunities, promote sustainable trade, reduce poverty, & improve equity & income distribution & human welfare

What does Green Economy help achieve

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Economic Resilience

- Revitalize & diversify the economy
- Enhance competitiveness & create new market niches
- Generate new investment opportunities
- Contribute to Gross National Product

Promote Equity, Social Integrity & inclusiveness

- Human capital development
- Poverty reduction
- Intergenerational equity
- Intragenerational equity
- Gender equality
- Create genuine prosperity & wellbeing (education, health…
- Right to development for all

Ecological Sustainability

- Maintenance of eosystem services & natural capital
- Biodiversity conservation
- Sustainable consumption & production
- Resource efficiency
- Waste avoidance, reduction, recycle, recovery, reuse
- Address climate change concerns

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The Rio+20 Conference held in 2012 had two main themes firstly, a green economy in the context of sustainable development and poverty eradication; and, secondly, the institutional framework for SD

“

We affirm that there are *different approaches, visions, models and tools available to each country*, in accordance with its national circumstances and priorities, to achieve sustainable development in its three dimensions which is our overarching goal. In this regard, we consider green economy in the context of *sustainable development and poverty eradication as one of the important tools available for achieving sustainable development* and that it could provide options for policymaking but should not be a rigid set of rules. We emphasize that it should contribute to *eradicating poverty* as well as *sustained economic growth*, *enhancing social inclusion*, *improving human welfare* and *creating opportunities for employment* and decent work for all, while *maintaining the healthy functioning of the Earth’s ecosystems*.”

Rio+20 Conference held in 2012

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Global Investment Trends

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Global new investment in renewable power & fuels reached $ 279.8 billion in 2017

The global market for organic food reached $ 97 billion in 2017

Global sales of electric cars increased by 54% in 2017

The renewable energy sector now employs over 8.1 million people

Since 1990s ecotourism has been growing between 10%-30%/year

The transformation to a greener and low-carbon economy could generate up to 60 million additional jobs across economic sectors

Global Trends

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Cost of Renewable Energy

- According to IRENA cost of generating power from onshore wind has fallen by around 23% since 2010, while the cost of solar photovoltaic (PV) electricity has fallen by 73% in that time
- Further price falls expected for these and other green energy options with all renewable energy technologies are expected to be competitive on price with fossil fuels by 2020
- Onshore wind schemes are now costing an average of $0.06 /kWh although some schemes are coming in at $0.04 per KwH
- Cost of solar PV is down to $0.10 per KwH
- Cost of electricity generation based on fossil fuels falls in a range of $0.05 to $0.17/ KwH

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Guiding Principles for Achieving Sustainable Development

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- ✓ Safety & security
- ✓ Stable macroeconomic environment
- ✓ Social justice & cohesion
- ✓ Intergenerational equity
- ✓ Intragenerational equity
- ✓ Good governance (Transparent, accountable,…
- ✓ Participatory & inclusive (civil society, youth..
- ✓ Integrated policymaking
- ✓ Collaborative & synergistic
- ✓ Diversification & revitalization of the economy
- ✓ Regulatory framework
- ✓ Market based instruments
- ✓ Practicality & flexibility
- ✓ Sustainable consumption & production
- ✓ Resource efficiency
- ✓ Decoupling
- ✓ Competitiveness
- ✓ Sustainable trade policy
- ✓ Sustainable finance policy
- ✓ Job creation
- ✓ Research & development
- ✓ Education & capacity development
- ✓ Public awareness & training
- ✓ Follow up, monitoring & assessment

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The Future Economy

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1 Knowledge-based	2 Technology-based	3 Innovation-based	4 Digital	5 4th Generation industrial Rev.	6 Green Economy
7 Circular Economy	8 Regenerative	9 Nature-Based	10 Bioeconomy	11 Investment-based	12 Production-based
12 Social Economy	14 Collaborative	15 Integrative	16 Service Economy	17 Sharing Economy	The Future Economy

The Future Economy

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What induces private sector invest in green sectors

What induces private sector invest in green sectors

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- ✓ Growing emerging market
- ✓ Contributes to producers responsibility
- ✓ Contributes to consumers responsibility
- ✓ Improves Image
- ✓ Effective marketing tool
- ✓ Increases workers productivity
- ✓ Efficiency gains & reduced costs
- ✓ Promotes market access
- ✓ Reduces environmental risks
- ✓ Reduces litigations & potential financial costs
- ✓ Good business as it increases profits
- ✓ Enhances stakeholders satisfaction

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Investment Opportunities

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- Renewable sources of energy (solar, hydro, wind, bio-energy, & thermal)
- Investments include extending *existing grids* to non-served areas, based on energy efficient & renewable sources of energy
- In remote locations, *off-grid & mini-grid options* tend to be more cost effective than expanding existing electricity grids
- *Solar household systems* have the potential to alleviate rural energy poverty & displace costly diesel-based power generation
- *Energy efficiency & renewable energy use* in industry, tourism, agriculture, cities, buildings, transportation, municipalities & services




Renewable Energy

- Investing in *water efficiency* saves costs & supports local economic growth & enhances resilience to climate change
- Investing in *wastewater treatment and reuse*
- *Seawater desalination* using renewable energy
- Investing in *biodiversity & ecosystem services* promotes water supply
- Invest in *rainwater harvesting & water condensation* techniques
- Adequate *sanitation & drinking water supply* & contributes to improved health, poverty reduction, & human wellbeing

Sustainable Water Use

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- Investing *in organic & sustainable farming*
- Investing in *draught resistant & water saving cash crops*
- Soil & water management systems
- Strengthening the *supply chains for green products & farm inputs*
- *Mechanization & post-harvest storage & cooling facilities* to enhance efficiency
- Manufacturing of *water & energy saving equipment*
- *Recycling of agricultural waste* into compost & biogas
- Applications of *precision agriculture* & innovative technologies




Sustainable Agriculture

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- Green investment to *reverse loss of forests by conserving existing areas* & promoting expansion through regeneration & reforestation
- Improving management in existing forests & agroforestry systems to ensure continued *provision of ecosystem services*
- Investment in *agroforestry* provides win-win solution: conserves forests & promotes sustainable agriculture
- Investment in *conservation & restoration of forests* in accordance with principles of sustainable forest management
- Investment in the production of forest plantations *using treated wastewater*




Sustainable Forests

- Investment options include maintenance & decommissioning of vessels & improved fish stock management practices
- Investing in aquaculture (one of the fastest growing sectors), while overcoming sanitary & biodiversity challenges resulting from high production & trade volumes
- Fish processing plants, recycling of fish waste & production of fish fodder
- Public awareness, re-training & education programs for fishermen in order to improve fishing practices, including waste reduction
- Effective management practices, such as individual transferable quotas (ITQs), could lead to improvement & rebuilding of fish stocks
- Creating alternative employment opportunities in order to reduce pressure on fisheries, especially in artisanal fishing locations





Sustainable Fisheries

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- Investing in innovative & efficient technologies & processes that result in reduced energy & material use & waste generation, & promote recycling of used products

- Redesign products & business models so that the same functionality can be delivered with less energy & material use, & with an increase in recyclable products

- Introduce cleaner technologies & improve the efficiency of existing processes to establish new modes of production marked by higher material & energy efficiency

- Substitute green inputs for brown inputs wherever possible, recycle generated wastes, including wastewater

Green Industry

- Investing in drying & canning agriculture produce such as tomato paste, production of jam, dried fruits,….
- Investing in processing of meat, poultry & fish products
- Investing in medicinal plants
- Textile industry (cotton, silk, jute, etc…,)
- Production of oil & biofuel from plants (Jejoba, Jatrova,..
- Production of sugarcane & sugar beet
- Production of paper, manufacturing of wood products, furniture,….

Agroindustry

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- Sustainable tourism offers a wide range of opportunities including generating significant returns while reducing environmental impacts
- Investment opportunities include green airports, green hotels, national parks & reserves, recreational areas,…
- Environmental & biodiversity conservation, natural attractions, beaches, mountains, rivers, & natural parks
- Education & capacity building (labor force skills, including the greening of the skills base), sustainable management systems & technology development
- Investing in artisanal traditional products




Eco tourism

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- Green infrastructure – roads, transport systems, buildings, energy, water, sanitation, waste recycling, as well as investing in urban form, size, density & configuration
- Application of AI & innovative technologies for efficient design & layout of urban structures, efficiency in the use of energy & water & other factor inputs & the use of renewable energy & water & recycled material
- Enhanced resource efficiency as green cities benefit from synergies between their constituent parts: energy & water systems & between different economic sectors & resource flows, where outputs of one sector is an input for another
- Promote urban agriculture, including green roofs
- Electricity generation from biogas produced from municipal waste



Sustainable Cities

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- Opportunities for greening the building sector in developed countries, are found mainly in *retrofitting existing buildings*
- The greatest potential to reduce energy demand will come from a new generation of *green buildings* with more efficient design & higher performance standards
- *Two paradigms* for greening the sector that can be applied to new buildings as well as retrofitting existing building stock
- The 1st is based on the concept of "*passive" design* where buildings respond to their local site context by using natural elements (such as air-flow & sunlight) to limit the effect of external conditions
- The 2nd is based on an *"active" approach* that uses state-of-the-art technologies & building management systems that reduces resource & material consumption & generates energy




Green Buildings

- *Avoiding* or reducing the number of journeys taken; *Shifting* to more environmentally efficient forms of transport, & *Improving* vehicle & fuel technology to reduce adverse environmental effects

- Enacting the *Avoid, Shift & Improve* strategy requires adequate investmentin *R&D, production & operation & management of infrastructure* (such as tracks for buses & rail, pedestrian & cycle routes & park-&-ride facilities)

- *Greener vehicles & transport modes* including green public transport systems, *cleaner fuel, telecommunication technology* e.g. GPS, smart transport systems, green logistics

Green Transport Systems

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- Three central components in the waste minimization hierarchy are Reduce, Reuse & Recycle. Investment opportunities exist for these three areas of interventions
- Waste avoidance & minimization through innovative technologies & sustainable practices, waste recovery & recycling & treatment
- Formalizing the currently highly informal waste sector with the objective of improving working, living, & environmental & health conditions of workers
- Investing in source separation, municipal solid waste management & production of compost, biogas, bio diesel from agriculture & municipal organic waste

Integrated Solid Waste Management

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Green & Sustainable Finance

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The Addis Ababa Action Agenda clearly reaffirms the need to mobilize all available funding – public and private – to achieve the ambitious 2030 Agenda for Sustainable Development.

According to UNCTAD, achieving the SDGs requires between $5 to $7 trillion annually, with an investment gap in developing countries of about $2.5 trillion out of the global GDP of $ 115 trillion.

Moreover, according to the OECD, around $6.3 trillion annually is needed on a global scale for investing in clean & resilient infrastructure between 2016 & 2030, without taking into account climate concerns.

Green & Sustainable Finance

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- ✓ Integrate sustainability risk factors into credit analysis
- ✓ Create green investment funds & banks
- ✓ Introduce requirements for reporting on sustainability performance annually
- ✓ Enhance sustainability capabilities of policymakers & financial regulators
- ✓ Introduce requirements to disclose policies on sustainability
- ✓ Develop financial literacy programs to include sustainability considerations
- ✓ Incorporate sustainability considerations into financial markets & asset purchase programs
- ✓ Integrate environmental & social considerations in lending operations

- ✓ Restrict financial transactions that result in social & environmental costs
- ✓ Facilitate lending for priority sectors, green investment
- ✓ Facilitate lending for private sector, including SMEs
- ✓ Align fiscal incentives for savings, lending, investment, & insurance with sustainability
- ✓ Introduce standards & regulations to facilitate capital raising such as green bonds
- ✓ Promote diversity of financial institutions in terms of geographical coverage, size & business model
- ✓ Promote knowledge & training on sustainability to undertake fiduciary responsibility

Source: UNEP Inquiry Report 2015

Tools for Mainstreaming Environmental Risks in Business

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IFC's ESP

IFC's Environmental & Social Performance Standards define IFC clients' responsibilities for managing their environmental & social risks

The Equator Principles

The Equator Principles provide a risk management framework that can be adopted by financial institutions for determining, assessing & managing environmental & social risk in projects

UNEP FI's Principles

UNEP FI's Principles for Sustainable Insurance were developed to support sustainable finance in the context of insurance industry

Sustainable Stock Exchanges

The Sustainable Stock Exchanges Initiative explores how to improve investment transparency & performance on ESG through dialogue with investors, companies & regulators & corporate disclosure

PRI

The UN Principles for Responsible Investment (PRI) aim to incorporate sustainability concerns into the investment planning of investors

Sources of Green & Sustainable Finance

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ODA

ODA amounted to $149.3 billion in 2018 down by 2.7% in real terms from 2017, but still continues to be a main source of funding

Private Sector

Remove obstacles facing private investors thru good governance, predictable & stable policies, incentives & other incentive measures

Blended Finance

The use of ODA for the mobilization of additional private finance towards sustainable development
OECD DAC members endorsed Blended Finance Principles for Unlocking Commercial Finance for SDGs

Fiscal Measures

Taxes & subsidies can play an important role in directing finance to support the implementation of the SDGs
Remittances of nationals working abroad

Innovative Finance

Unlocking the supply of finance thru innovative domestic institutions (e.g. green banks) & financing instruments (green bonds)
Revolving Fund
Energy Performance Contracting
Result-based financing
Ethical finance

Sources of Green & Sustainable Finance

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Financial Institutions

Mobilizing financial resources for SDGs requires introducing sustainability measures in the financial system regulatory frameworks along with risk mitigation mechanisms to encourage & govern lending for sustainable development projects

Public Finance &Trade

Government revenue thru taxes & subsidy reform provide a main source of funding, trade policies, properly designed can be provide a source for foreign exchange earnings needed to support sustainable development & create jobs

UN & International Conventions & Funding Mechanisms

Meeting commitments with respect to international conventions offer funding opportunities (GEF, global Strategic Plan for Biodiversity for 2011-2020, GCF, Environmental Conventions

Remittances of Nationals working abroad

Facilitate & provide financial services to nationals living & working abroad & their families the transfer of funds to their respective countries can represent a major source of green funding

Civil Society & Philanthropic Organizations

Civil society & philanthropic organizations to provide financial & technical contributions towards sustainable development & aligning their activities with government policies, plans & programs

Green Finance Delivery Instruments

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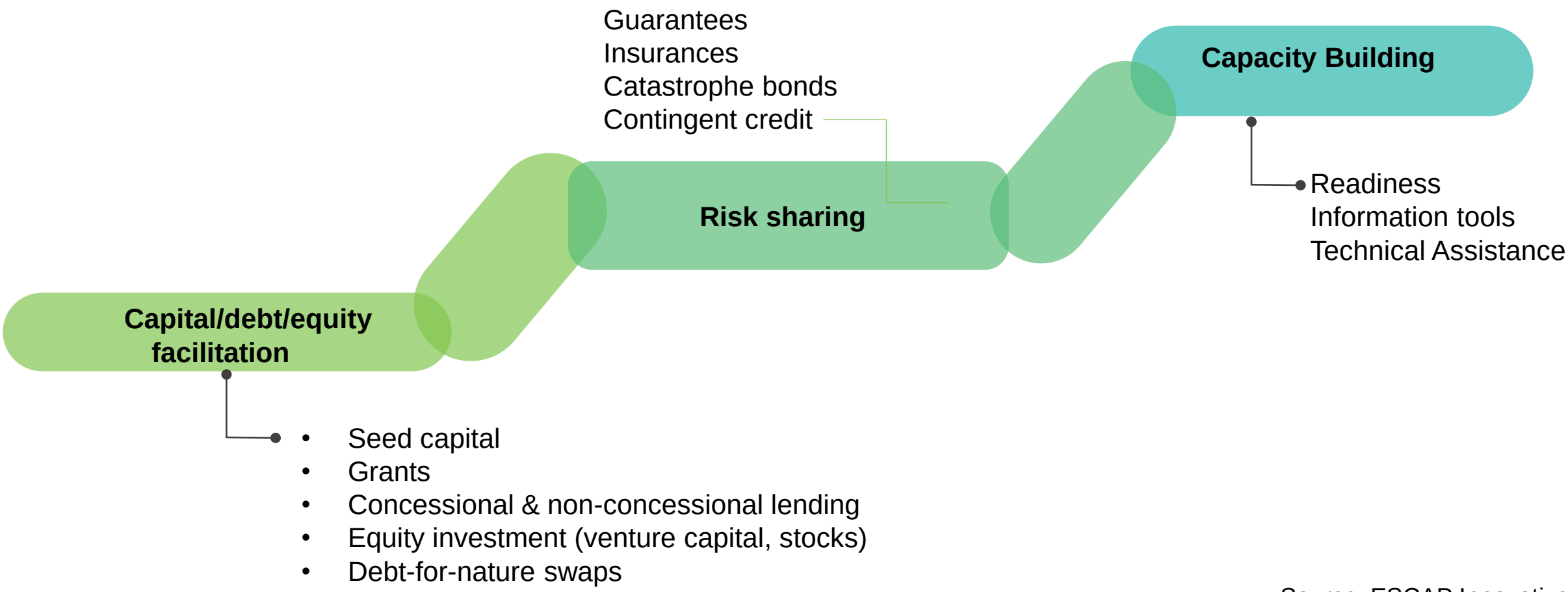

Source: ESCAP Innovative instruments for Green Finance

Innovation Tools for Green Investment

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- Disclosure Requirements
- Accepting Carbon Certificates as part of Commercial Banks Legal Reserves
- Directed Green Credit Policy Instruments
- Green Differentiated Reserve Requirements
- Differentiated Capital Requirements
- Green Macroprudential Regulation & Climate-related Stress Testing
- Green Quantitative Easing & Reserve
- Green Finance Guidelines & Frameworks

Source: ESCAP Innovative instruments for Green Finance

Innovation Tools for Green Investment

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Disclosure Requirements

Improved transparency of climate-related risks helps a more appropriate pricing of risks & allocation of capital, & provides the basis for green macro-prudential regulation & climate-related stress testing

Carbon Certificates as part Banks Reserves

Carbon certificates can be distributed to low- carbon projects and make them exchangeable for concessional loans. This would reduce the capital costs for low-carbon projects.

Green Macroprudential Regulation & Climate- related Stress Testing

Address climate risk include countercyclical capital buffers; higher risk weights for either carbon-intensive and dependent sectors (such as transport, mining & energy) or for particularly carbon-intensive & dependent companies within these sectors. take into account externalities that may give rise to financial instability & identify the ecological imbalances that may cause material financial risks.

Green Differentiated Reserve Requirements

The reserve requirement ratio is the share of deposits that banks & other depository institutions must hold in reserve and not lend out

Allowing lower reserve rates on privileged green assets would be a way of favoring green investments over conventional investments

Directed Green Credit Policy Instruments

To incentivize commercial banks to lend to priority green sectors at lower loan rates, a central bank can use differential rediscount rates where banks extending credit to green investment can rediscount bills at lower rates

Differentiated Capital Requirements

Capital requirements can be differentiated according to the type of bank and their lending. For instance, the capital requirements regulation under Basel III foresees a capital reduction factor for loans to (SMEs), which means that SMEs receive a differentiated treatment for their loans compared to large enterprises

Green Quantitative Easing & Reserve

QE is an unconventional monetary policy first employed by the Bank of Japan in the early 2000s to fight deflation when nominal interest rates already were at the zero lower bound. It consists of large-scale asset purchases from banks (mainly including government bonds) & other financial institutions via open market operations, with asset purchases could be directed toward the purchase of green financial assets such as green bonds.

Green Finance Guidelines & Frameworks

As of January 2017, 37 countries are represented in the Sustainable Banking Network (SBN), a network of banking regulators & associations established to promote the development of environmental & social risk management. In 2012, the China Banking Regulatory Commission (CBRC) issued Green Credit Guidelines & in 2014 issued a Green Credit Monitoring & Evaluation mechanism & KPI checklist

Countries reducing GHG Emissions while Growing their Economies

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COUNTRY	CHANGE IN CO_2 (2000–2014)	CHANGE IN GDP (2000–2014)
Austria	-3%	21%
Belgium	-12%	21%
Bulgaria	-5%	62%
Czech Republic	-14%	40%
Denmark	-30%	8%
Finland	-18%	18%
France	-19%	16%
Germany	-12%	16%
Hungary	-24%	29%
Ireland	-16%	47%
Netherlands	-8%	15%
Portugal	-23%	1%
Romania	-22%	65%
Slovakia	-22%	75%
Spain	-14%	20%
Sweden	-8%	31%
Switzerland	-10%	28%
Ukraine	-29%	49%
United Kingdom	-20%	27%
United States	-6%	28%
Uzbekistan	-2%	28%

Sources: BP Statistical Review of World Energy 2015; World Bank World Development Indicators

Best Performing Green Economy Countries

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Expressed as percentiles representing an aggregate result from 4 main dimensions of GGEI: Leadership & climate change, efficiency sectors, market & investment, and environment

	2018 result	*time series available*
Sweden	0.7608	2010-2018
Switzerland	0.7594	2014-2018
Iceland	0.7129	2010-2018
Norway	0.7031	2010-2018
Finland	0.6997	2010-2018
Germany	0.6890	2010-2018
Denmark	0.6800	2010-2018
Taiwan	0.6669	2014-2018
Austria	0.6479	2014-2018
France	0.6405	2010-2018
United Kingdom	0.6230	2010-2018
Colombia	0.6188	2014-2018
Singapore	0.6154	2018
Costa Rica	0.6142	2014-2018
Ireland	0.5993	2014-2018
Canada	0.5966	2010-2018
Netherlands	0.5937	2010-2018
New Zealand	0.5928	2010-2018
Japan	0.5927	2010-2018
Monaco	0.5909	2018
Kenya	0.5809	2014-2018
Uruguay	0.5784	2014-2018
Zambia	0.5740	2014-2018
Belgium	0.5737	2014-2018
Italy	0.5606	2010-2018
South Korea	0.5591	2010-2018
Thailand	0.5551	2014-2018
China	0.5531	2010-2018
Peru	0.5526	2014-2018
Greece	0.5485	2016-2018
United States	0.5471	2010-2018

Source: The GGEI is published by Dual Citizen LLC, a private U.S.-based consultancy


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Thank You