

## Section 1

# Advancing a Green Economy: Rationale and Context

# 5

## Learning Unit

# Global Projections Developed through Modeling

Global models inform policy-makers of the benefits and challenges associated with the green transition. This unit highlights some key findings of macroeconomic modeling carried out, such as a comparison between Green Economy and business as usual scenario, investments needed to realize the green transition, and expected job benefits.

PAGE Green Economy Introductory Learning Materials



# Global Green Economy Models and Projections

**Key findings from the global green economy modelling**  
(GER, 2011)



## Speaker's Notes:

- This slide presents the main results from the global green economy modelling undertaken by UNEP for the Green Economy Report (GER) in 2011.
- The report used macroeconomic modelling to demonstrate the benefits of green economy, as compared to business-as-usual economic scenario.
- The modelling in the GER used the Threshold 21 (T21) models, which is one of the most advanced in terms of considering the economic, social and environmental variables that influence sustainable development in an integrated manner.
- Key findings include:
  - Greening generates increases in wealth (particularly in natural capital), and also would produce a higher rate of GDP growth over a period of several years
  - Green economy benefits the poor, due to the better management of the ecological commons, thus contributing to poverty alleviation
  - Green economy creates new jobs, which over time exceed the losses in “brown economy” jobs

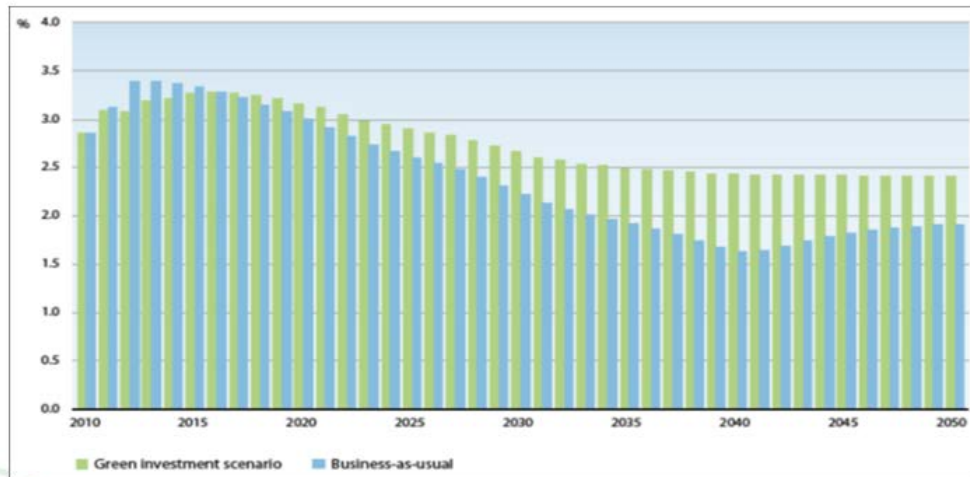
## **Key Message**

- In the long run green economy is expected to generate wealth, create jobs and benefit the poor as compared to business-as-usual.

## Further Reading:

- UNEP, Towards Green Economy - Pathways to Sustainable Development and Poverty Eradication, 2011, Section: Modelling Global Green Investment Scenarios, pp. 497-545.

# Global Growth Trends 2010–2050 and the “Green Investment Scenario”



UNEP, 2011

## Speaker's Notes:

- The graph presents a scenario projection of the effects of investing 2 % of global GDP between 2010 and 2050 in green economy key sectors (i.e. energy efficiency, renewable energy, waste management, transport, natural capital based sectors), according to the UNEP Green Economy Report, 2011.
- This is referred to as a “green investment scenario” and is compared with a “business as usual (BAU) scenario” where investments would replicate historical trends, assuming no fundamental policy changes.

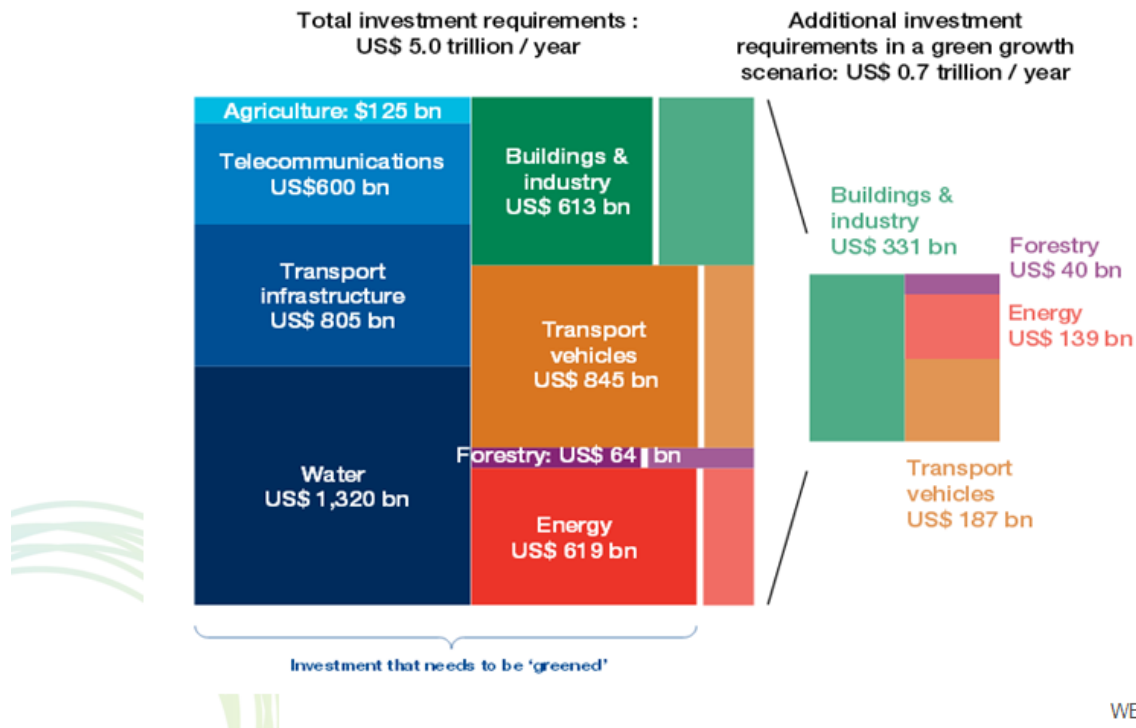
## *Key Message*

- In the green investment scenario (green bars), growth in global GDP is projected to be higher than in a business-as-usual scenario (blue bars) after ten years. A green economy would therefore grow faster than a brown economy over time, while maintaining and restoring natural capital

## Further Reading:

- UNEP, Towards Green Economy - Pathways to Sustainable Development and Poverty Eradication, 2011, Section: Modelling Global Green Investment Scenarios, pp. 497-545.
- UNEP, Towards Green Economy - Pathways to Sustainable Development and Poverty Eradication: A Synthesis for Policy Makers, 2011, p. 25.

# Green Investments Necessary for Enabling the Green Transformation



WEP, 2013

## Speaker's Notes:

- This graph presents the findings of the Green Investment Report released by the World Economic Forum, which looks into the investments needed to enable the green transformation on a global scale.
- Investments of scale are projected to a level of approximately US\$ 5 trillion per year to 2020. These investments are required for the water, agriculture, telecoms, power, transport, buildings, industrial, and forestry sectors. The projections are made under the business as usual scenario and therefore the investments will not automatically deliver stable growth
- According to the report, greening future investment of scale is a precondition for achieving sustainable growth.
- “Greening” investments means utilizing them to enable green alternatives to avoid locking in less efficient, emissions-intensive technologies.
- Besides the projected investments, there are additional, incremental investment needs of at least US\$ 0.7 trillion per year, which is needed for clean energy infrastructure, low-carbon transport, energy efficiency and forestry to limit the global average temperature increase to 2°C above pre-industrial levels.
- Increasing “green” public funding from its current level could mobilize private capital. This would address the US\$ 700 billion in investment required to put the world on a climate-resilient path towards green growth.

## Key Message

- Greening future investment of scale (projected at 5 trillion per year) is a precondition for achieving sustainable growth, however additional “green” investments of at least US\$ 0.7 trillion per year

will be needed if the global average temperature should not increase with more than 2°C above pre-industrial levels.

**Further Reading:**

- World Economic Forum (WEF). The Green Investment Report: The Ways and Means to Unlock Private Finance for Green Growth, 2013

# Green Jobs Creation



## Speaker's Notes:

- This slide presents the jobs creation potential under a green economy, according to the report by the ILO: Working towards Sustainable Development, 2013.
- The Global Economic Linkages (GEL) model is a macroeconomic model developed by the International Institute for Labour Studies to study the functioning of the labour market and to identify the factors affecting employment, wages and the informal sector. This instrument is also serves to assess the impacts of different forms of labour, social and fiscal policies.
- Estimates based on the ILO GEL model suggest that the resource intensive development model of the past will lead to rising costs, loss of productivity and disruption of economic activity.
- In a business-as-usual scenario, productivity levels in 2030 would be 2.4 per cent lower than today and 7.2 per cent lower by 2050. This is in line with studies assessing economic damages due to environmental degradation and loss of basic ecosystem services
- The current economic model also fails to create sufficient possibilities for decent jobs and will exacerbate problems such as poverty and inequality as well as malnutrition and food in security
- A greener economy and more sustainable enterprises have created tens of millions of green jobs. In Brazil, for example, 2.9 million green jobs (6.6 percent of formal employment) were recorded in 2010 in sectors aimed at reducing environmental harms
- Studies indicate that GE can create net employment gains in the order of 0.5–2 percent, which would translate into 15–60 million additional jobs globally
- GEL model shows that if an eco-tax is combined with employment-support measures, by 2020 multi-factor productivity would be 1.5 per cent higher than if green taxes are not used to support employment, and by 2050, it would be 5 per cent higher.

## **Key Message**

- According to the ILO, a shift to green economy would create 15 – 60 million jobs annually, and increase labour productivity.

### Further Reading:

- ILO. Working Towards Sustainable Development: Opportunities for Decent Work and Social Inclusion in a Green Economy, 2013
- ILO. Green Economy Academy, 2014