

# The environmental, economic and social impacts of climate change in Greece



**BANK OF GREECE**  
EUROSYSTEM

# The CCISC

- \* a committee of scientists set up in 2009 by the Bank of Greece, to study the economic, social and environmental impacts of climate change in Greece
- \* first phase of work
  - \* “The environmental, economic and social impacts of climate change in Greece”, June 2011
  - \* “Greek tourism and climate change: adaptation policies and a new growth strategy.”, October 2014
- \* second phase of work
  - \* Climate Change National Adaptation Strategy, recently announced by the Ministry of Environment and Energy



# Environmental, economic and social impacts of climate change in Greece

- \* climate projections for Greece in detailed geographic breakdown up to 2100
- \* a series of sectoral studies on the biophysical and the direct economic impact
- \* general equilibrium model of the Greek economy
- \* cost for the Greek economy for the scenarios of:
  - \* inaction
  - \* mitigation
  - \* adaptation



# Climate change projections

- \* climate change projections
  - \* for 13 regions on the basis of climatic and geographic criteria
  - \* by model simulations to foresee by the end of the 21st century:
    - \* air temperature will rise considerably
    - \* precipitation countrywide will decrease
    - \* the intensity of heat waves and the duration of drought spells will increase with a higher risk of forest fires



# Biophysical and economic impact assessments

- \* water reserves
- \* mean sea level
- \* fisheries and aquaculture
- \* agriculture and agricultural land
- \* forests and forest habitats
- \* biodiversity and ecosystems
- \* tourism
- \* the built environment
- \* transportation
- \* health
- \* mining



# The cost of climate change

Scenario cost comparison (in billion Euros)		2011 – 2100	cost saving compared to inaction	2011 – 2100	cost saving compared to inaction
		0% discount rate		2% discount rate	
<b>inaction</b>		<b>€701</b>		€202	
<b>adaptation</b>	<b>total cost</b>	<b>€578</b>	<b>€123</b>	€177	€24
	adaptation measures	€67		€28	
	other impacts	€510		€149	
<b>mitigation</b>	<b>total cost</b>	<b>€436</b>	<b>€265</b>	€156	€46
	mitigation measures	€142		€73	
	other impacts	€294		€83	

\* Total cumulative costs at 2008 constant prices, expressed as a loss of GDP relative to base year 2008.



# The symptosis

- \* environmental crisis & economic crisis
- \* current economic crisis constrains financing of mitigation and adaptation policies
- \* adaptation policies could be an opportunity for new lines of economic activity and growth, part of the strategy for an exit from the crisis



# Sustainable Development Goals





# Closing the loop

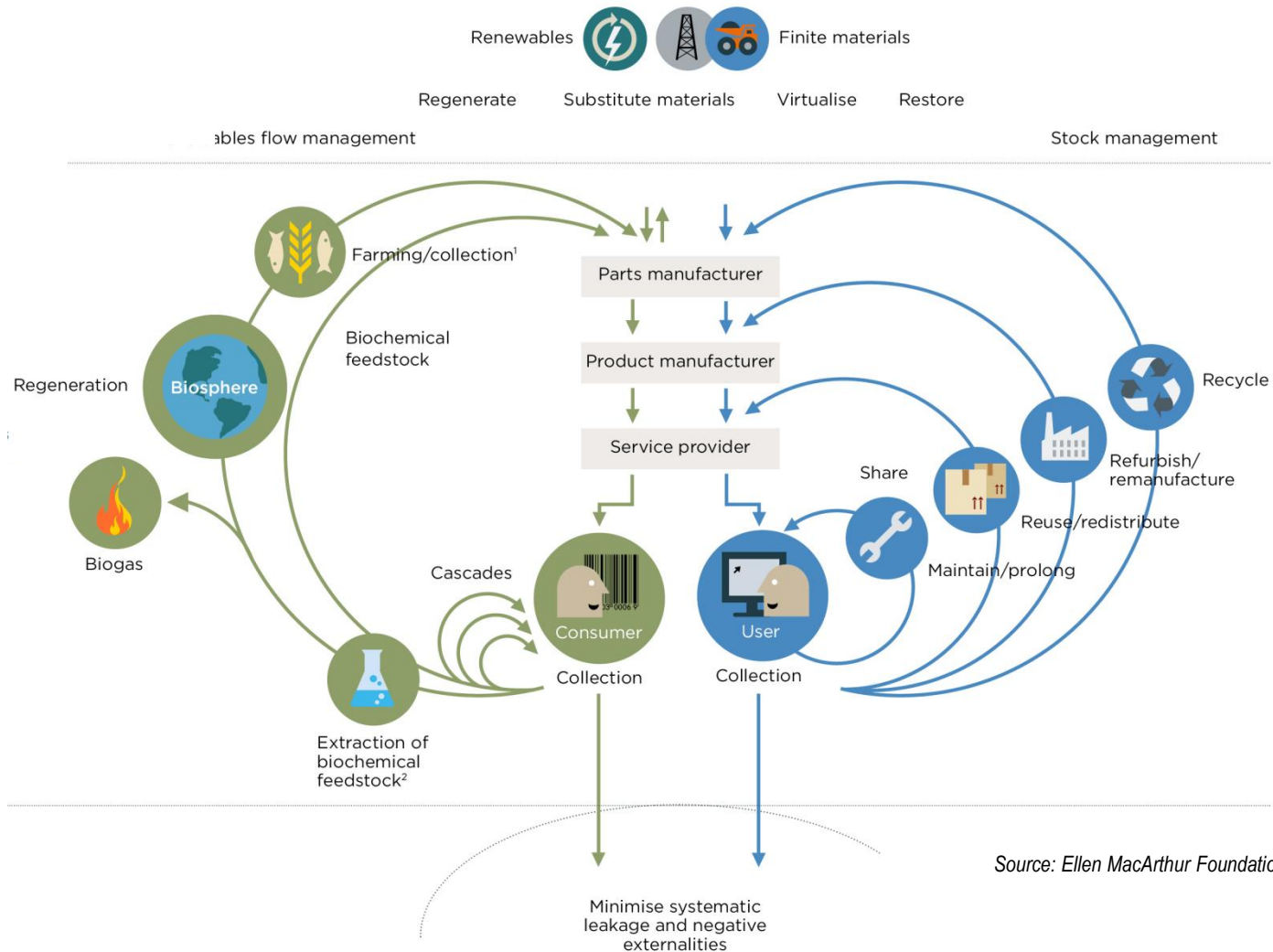
## LINEAR ECONOMY



## CIRCULAR ECONOMY

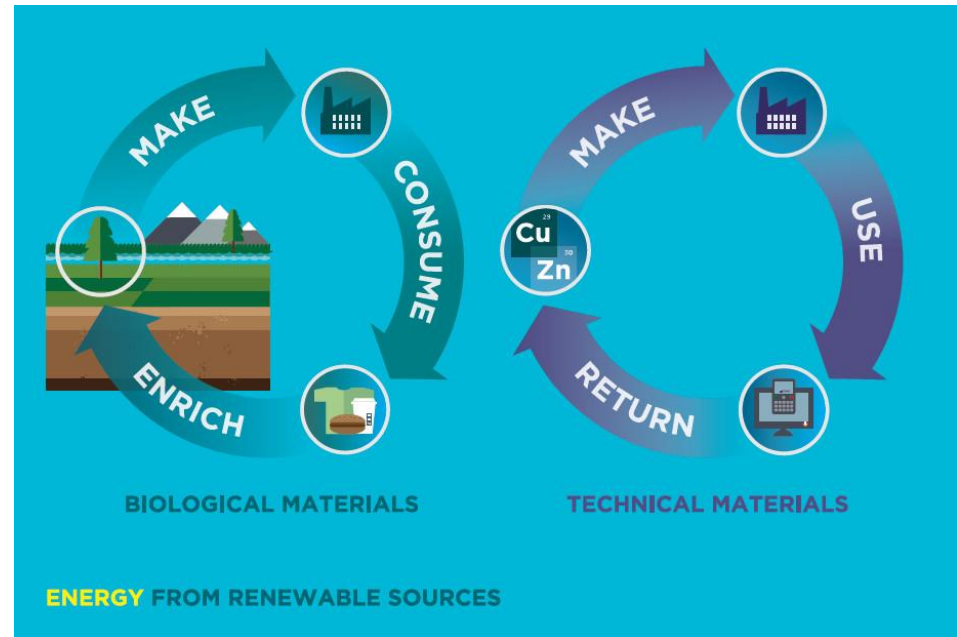


# Circular Economy



# Circular Economy Principles

- \* Preserve and enhance natural capital (control finite stocks and balance renewable resources flows)
- \* Optimise resource yields (circulate products, components and materials in use at the highest utility)
- \* Foster system effectiveness (reveal and design out negative externalities)



Source: Ellen MacArthur Foundation



# Current and future work

- \* Climate change adaptation
  - \* Supporting and driving adaptation policy implementation in Greece through the Climate Change Adaptation Observatory
- \* Economic policy and climate change
  - \* Research on the effects of climate change on economic policy, including monetary policy
- \* Circular economy
  - \* Public event on the 24<sup>th</sup> November



# The CCISC on the web

- \* Thank you!
- \* CCISC webpage  
<http://www.bankofgreece.gr/pages/en/klima>  
(*shortcut banner on [www.bankofgreece.gr](http://www.bankofgreece.gr)*)
- \* for more information and copies of the reports please contact us at:  
[climatechange@bankofgreece.gr](mailto:climatechange@bankofgreece.gr)

