THE CIRCULAR ECONOMY
Pathway for Pursuing 1.5˚C

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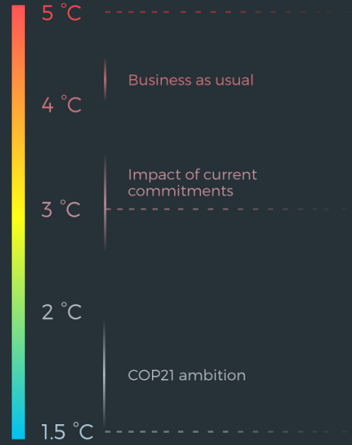
Harald Friedl,
CEO Circle Economy

The circular economy can make a **major contribution** to mitigating climate change

Download the report:
http://www.circle-economy.com/case/circular-economy-a-key-lever-in-bridging-the-emissions-gap-to-a-1-5-c-pathway

THE SITUATION

Under a business as usual scenario, the global temperature by 2100 will be more than 4˚C above pre-industrial levels

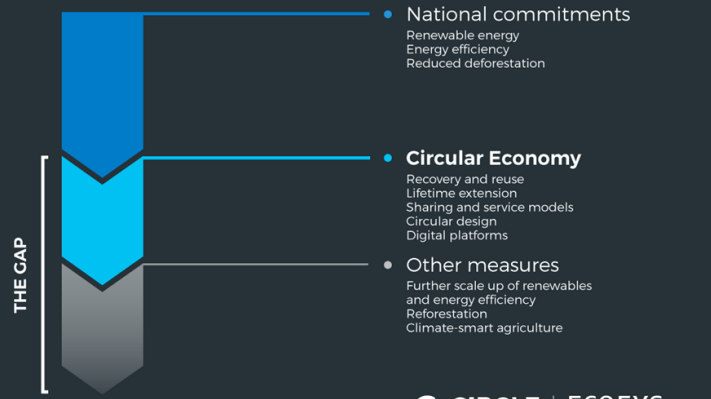


THE END GOAL

To limit temperature rise to 1.5˚C, we need to cut greenhouse gas emissions from 65 to 39 billion tonnes CO_2e per annum by 2030

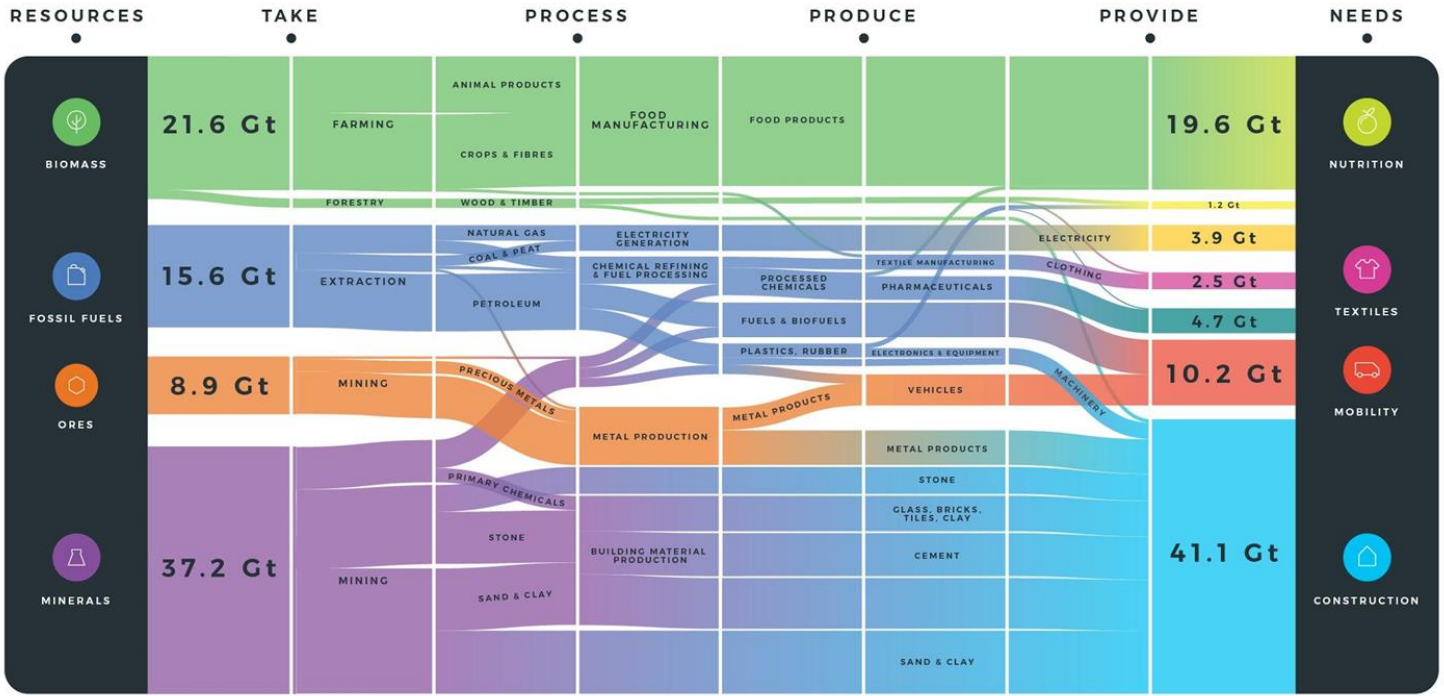
THE SOLUTION

Current national commitments achieve about half of the required emissions cuts. Circular economy may fill about half of the remaining gap



CIRCLE ECONOMY | ECOFYS

We extract over **80 billion tonnes** of materials per year to meet the functional needs of society...



(draft analysis)

Sources: Circle Economy team analysis based on Exiobase (2011); Tukker et al., EXIOPOL - Development and illustrative analyses of a detailed global MR EE SUT/IOT (2013) Economic Systems Research, 25 (1), pp. 50-70.; Wood et al., Global sustainability accounting-developing EXIOBASE for multi-regional footprint analysis (2015) Sustainability (Switzerland), 7 (1), pp. 138-163.

Finding systematic mitigation options requires mapping **the full metabolism** of a jurisdiction, industry or industrial cluster

The metabolism of Albania, mapping:

Food
Water
Energy
Tourists

Source: www.behance.net/gallery/40339307/The-Metabolism-of-Albania

It offers Lao PDR an **alternative development perspective** which steps away from devastating resource extraction and its short-term rents

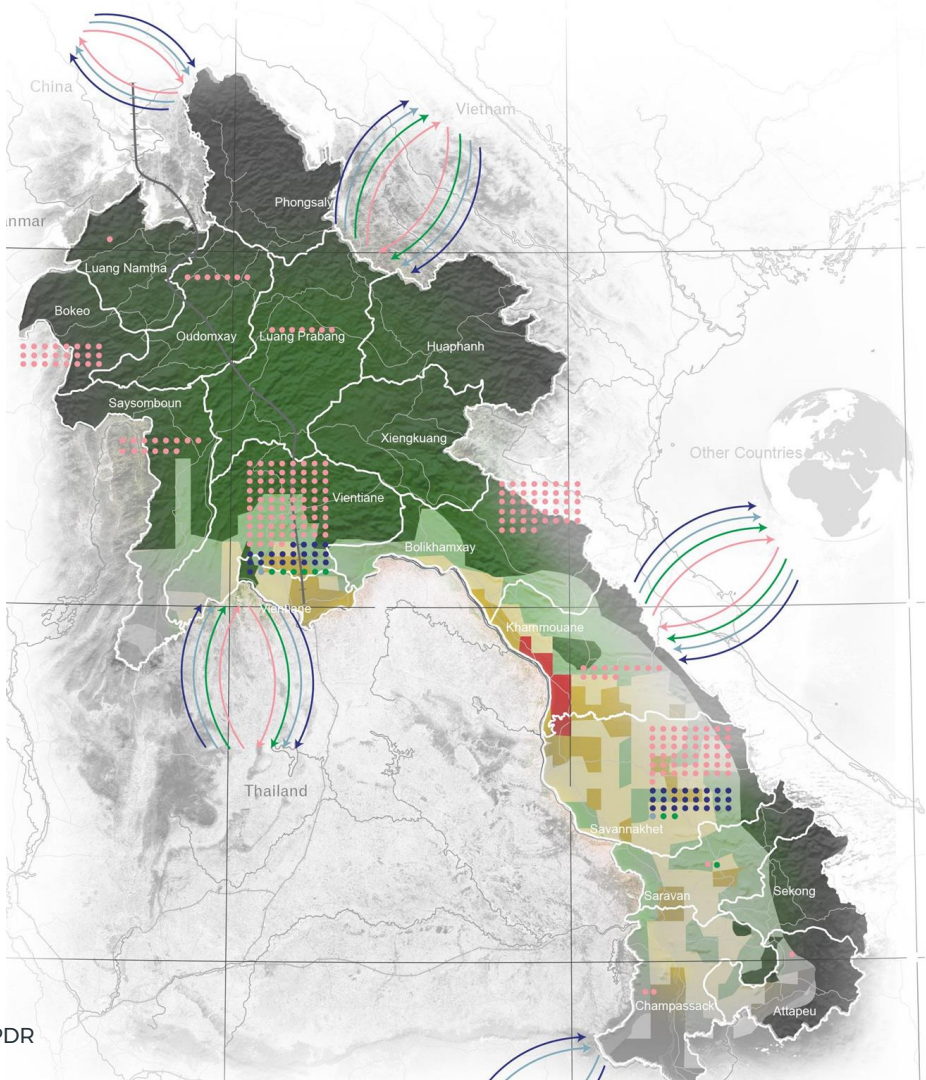
Initiative with UNDP

Mapping stocks and flows of:

- Agriculture and forestry
- Energy
- Metals
- Tourism

Opportunities

- Aquaculture in hydropower reservoirs
- Cross laminated timber
- Vehicle remanufacturing
- Nutrients recovery



Source: J.A.hoogzaad and others (unpublished draft), Circular economy strategies for Lao PDR

Circular economy opportunities to mitigate climate change are **overlooked and underfinanced**

~67%
share of global climate finance going to energy efficiency and renewables

67%
global energy use related to material management

13%
share of global emissions related to agriculture

1%
share of global climate finance directed to land-use

15%
share of global emissions related to construction

Sources:
UNFCCC, 2016 Biennial Assessment and Overview of Climate Finance Flows.
J.A.hoogzaad and others (unpublished draft), Circular economy strategies for Lao PDR
http://www.wri.org/blog/2014/05/everything-you-need-know-about-agricultural-emissions
B. Bajželj, J.M. Allwood and J.M. Cullen, "Designing Climate Change Mitigation Plans That Add Up", *Environmental Science & Technology*, 47(14): 8062–8069, July 2013
Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3797518

A growing body of evidence suggests **the circular economy is a promising pathway** to reduce emissions

- A FUNDAMENTAL SHIFT IS NEEDED IN THE WAY WE DELIVER ON SOCIETAL NEEDS AND MITIGATEEMISSIONS.
- The extraction, processing and disposalof materials are a large source of greenhouse gasemissions. Closing material cycles and improvingasset use offer a large mitigation opportunity which isinsuf ciently tapped into by climate policies. Climatechange mitigation and the circular economy aremutually reinforcing objectives and policy makers inbothelds should join forces.

- THERE IS A POSITIVE DYNAMIC BEHIND LOW-CARBON CIRCULAR POLICY.The EU and front-running member states are taking importantrststeps and best practices lay the foundation for a morecomprehensive and integrated policy framework. It isessential to consolidate policies along the entire valuechain, building on existing policies such as ecodesign,extended producer responsibility and greenprocurement, while addressingawed policies suchas the current approach to waste, which promotesincremental improvements rather than tackling morefundamental issues with material use.

- THE CONSTRUCTION AND MOBILITY VALUE CHAINSARE WELL POSITIONED TO LEAD THE TRANSITION.In both sectors, policies should aim to reducematerial and greenhouse gas footprints across theentire value chain: in construction by promotingsecondary material use, circular design and greenprocurement; and in mobility by shifting the focustowards circular design and the functional economy.Material streams are however less speci callytargeted and require dedicated policy attention. It is also essential to integrate policies across thesesectors and material streams.

Source: Deloitte, 2016

The circular economy changes the **scope of mitigation action**

From	To
Renewables, energy efficiency and reduced deforestation	Low-carbon materials and dematerialisation
Optimising existing assets/installations	Building an efficient metabolisms and systems
Plant, city or country (scope 1 and 2 emissions)	Supply chain or cross-border Interaction (scope 3 emissions)
Products	Services
Carbon tax	Extraction tax
Territorial emissions	Consumption-based emissions (30% tied to international trade)
Article 6 inspired by CDM and offsetting	Article 6 targeting cross-border trade of carbon- intensive products and materials