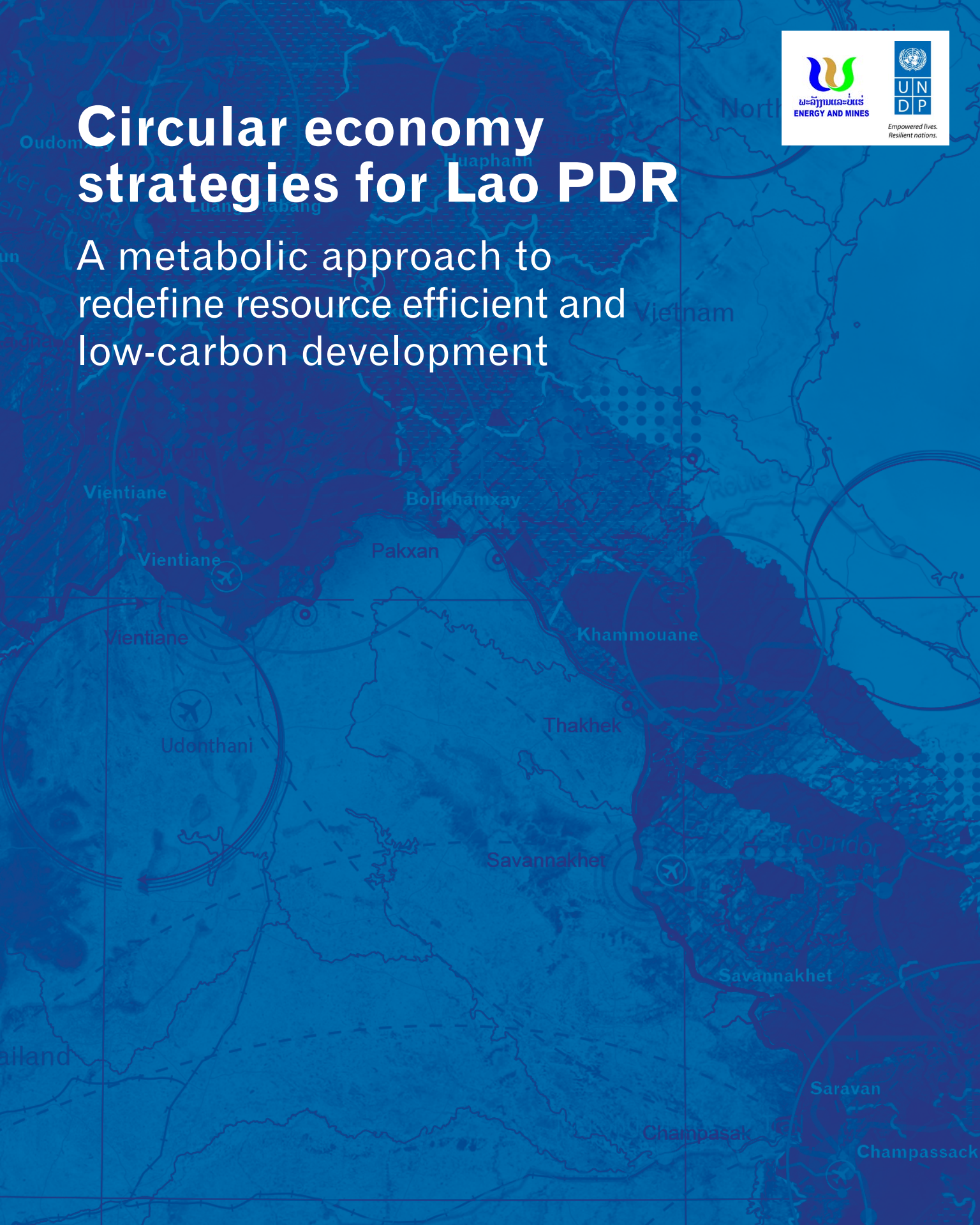


Circular economy strategies for Lao PDR

A metabolic approach to redefine resource efficient and low-carbon development



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Colophon

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Foreword

The adoption of the Paris Agreement in 2015 marks not only an historic milestone for the global effort to combat climate change but also sends an important signal for accelerated climate action and a dramatic transformation of economies as we know them.

In the strongest ever collective spirit, 195 countries came forward with Nationally Determined Contributions to outline targets for cutting greenhouse gas emissions. These national contribution targets culminated into the Paris Agreement which set the highly ambitious, but vital, global goal to limit temperature increases to well below 2°C and transition to a zero-carbon economy by the end of the century.

Reaching this ambitious goal will, however, require achieving progressively deeper cuts in greenhouse gas emissions. Since these emissions are closely related to resource use, circular economy strategies can guide us onto a low-carbon development pathway.

Therefore, Lao PDR developed a vision of a circular future which combines economic development with safeguarding the country's unique nature and culture. This requires a systems approach which looks beyond isolated challenges or attempts to optimise individual installations.

The central location of Lao PDR, its hydropower resources, a solid agricultural and forestry basis for developing a bio-based economy, the potential to expand ecotourism, its modest wages and the integration into the ASEAN Community (Association of South East Asian Nations) are all major opportunities.

The Institute of Renewable Energy Promotion under the Ministry of Energy and Mines, UNDP and Shifting Paradigms developed a study on 'Circular Economy Strategies for Lao PDR' which analyses the metabolism of Lao PDR to improve resource efficiency and asset use. For the study, a step-wise approach has been adopted which goes from priority setting based on national development ambitions and the metabolic profile of the country, to defining circular economy strategies. Priority setting and strategy formulation were guided by an ambition to optimise resource efficiency and reduce greenhouse gas emissions, seek cross-sectoral impacts and ability to inspire circular innovations across the Laotian economy.

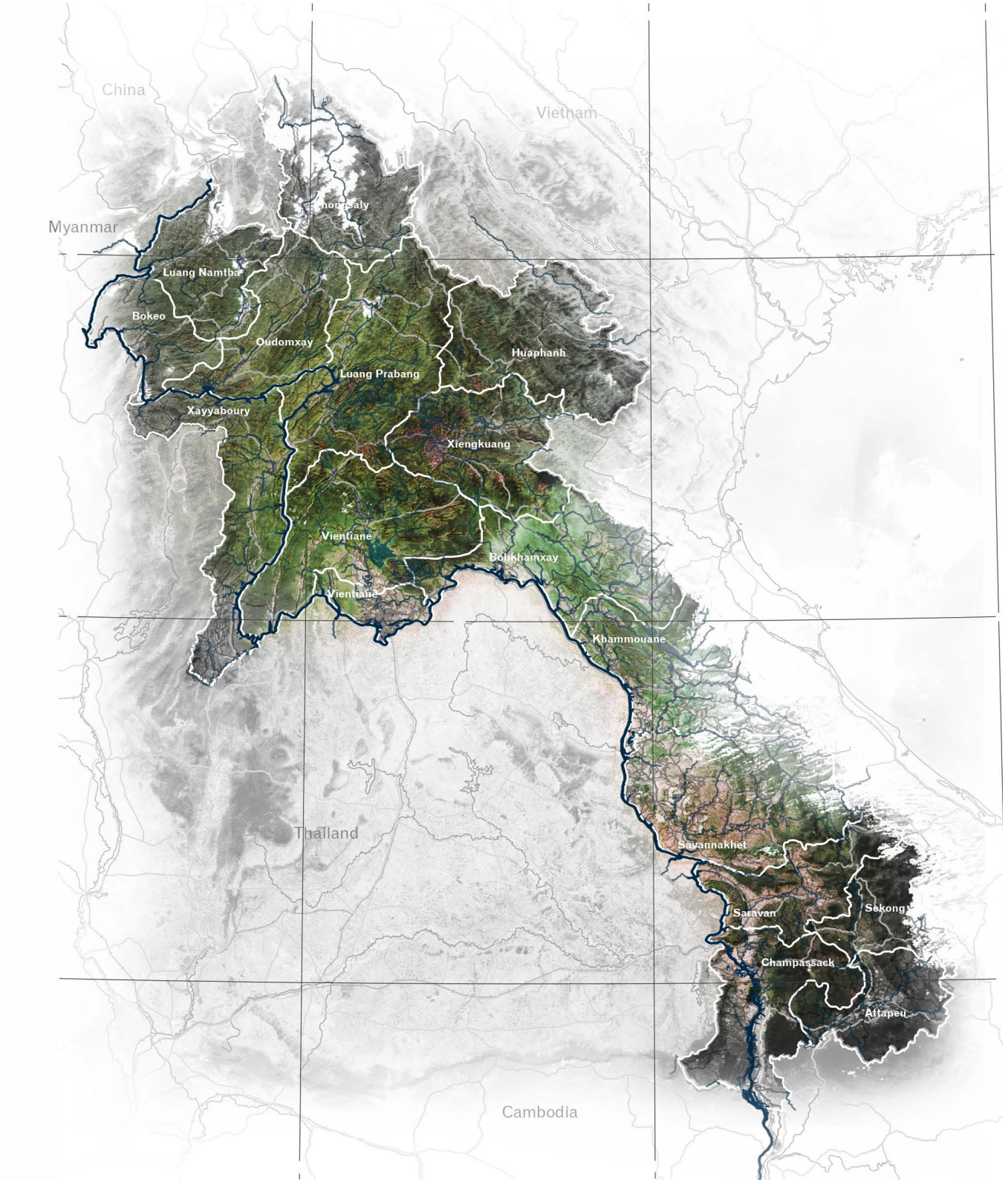
The government of Lao PDR has embraced this approach to redefine a development perspective for the country. It looks forward to continuing its effort to further decouple economic development, from the expansion of the national resource and carbon footprint.

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Summary

Lao PDR is strategically located in the heart of Southeast Asia and a vital organ in the regional economic tissue. It supplies its own industries and consumers with food and resources, while also exporting large volumes of crucial supplies to surrounding countries. The country has an opportunity to leapfrog into a circular future, where economic activities and resource use are regenerative by design and safeguard the natural and cultural beauty which are unique to the country. Analyzing the flows, conversions and stocks of materials and energy which constitute the metabolism of Lao PDR, bring the most promising circular economy strategies to the surface.

The analytical approach looks at Lao PDR as a system and combines resource efficiency with low-carbon development. These two development goals go well together, since 67 per cent of global greenhouse gas emissions are related to materials management. The opportunities build on circular economy strategies, which reduce the input of raw materials, improve the use of existing assets and reduce the output of harmful waste, including greenhouse gasses.

For developing countries, this approach represents a unique opportunity to redefine development and growth, through the lens of metabolic efficiency. For Lao PDR it is an opportunity to skip the catching-up phase and leapfrog into a postindustrial society, where the living organism, rather than the machine from the industrial age, is the main source of inspiration.

Development opportunities and challenges

Between 1990 and 2015 the domestic extraction of resources in Lao PDR increased from 10 to 71 million tons per year. Increased extraction and exports of wood, metal ores and refined copper were the main drivers of economic growth. This is a short-term growth strategy suppresses the growth potential of non-extractive national industries.

The central location of Lao PDR in between the large economies of southeast Asia, and on existing and planned international transport arteries, is a major opportunity. Other competitive advantages are its access to hydropower resources, a solid agricultural and forestry basis for developing a bio-based economy and its modest wages. The critical development challenges for Lao PDR are the heavy reliance on:

1. temporary resource rents to stimulate economic growth;
2. raw material exports which prevents the growth of local industry; and
3. the import of construction materials and fuels which can also be sourced locally.

1. **A regional recycling and remanufacturing hub:** Lao PDR can position itself as a recycling and remanufacturing hub in which material cycles are closed. The country can take full advantage of its location on major regional transport arteries like the newly built transit railroads and the

Mekong river. It could function as a resource hub, through which resources can be renewed and redistributed.

For example, by importing end-of-life motorcycles and cores, Lao PDR can replace the region's need to import motorcycle parts, produced from newly extracted raw materials. Similarly, the import of synthetic materials can be substituted with local, bio-based alternatives. Additionally, a new technology to sort fibres from waste textiles opens an opportunity to replace the import of new fibres and fabric for the textiles industry, with end-of-life textiles of regional origin. Where the stream of textiles residues is insufficient to meet national demand, organic fibres like hemp can close the gap.

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