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CONFERENCE EDITION

Policy brief

A Green and Prosperous Future for Indonesia

The new approach to planning embraces sustainability, for all.

Kementerian PPN/ Bappenas

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WAVES

The new approach to planning embraces sustainability for all

Indonesia is at an important juncture. After having gained a leadership position in the regional economy and claimed an important place in the World's economy, the country has a challenge: to continue growing while improving equality.

This challenge can turn into an opportunity, if a more systemic approach is used to plan future actions. Systemic in this context means that policy interventions are assessed against dimensions of development (social, economic and environmental), across sectors, for all stakeholders, over time and in space (e.g. for different provinces).

Indonesia has several objectives, including economic growth, employment creation and emissions reduction. It has proven difficult to reach these three targets simultaneously, not only for Indonesia but for all countries worldwide. Nevertheless, there are some options that can show how the country can move towards all their target simultaneously. The goal is to increase social empowerment and economic growth while reducing resource use and emissions, leading to higher economic resilience and a more sustainable future.

(below and on cover page)
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This brief is prepared by Andrea Bassi of International Institute for Sustainable Development (IISD) with the support of WAVES Program

The Low Carbon Development Initiative, approach and results

01

The Ministry of Planning, BAPPPENAS, in cooperation with several development partners has launched the Low Carbon Development Initiative for Indonesia (LCDI). The goal is to inform the country's next five-year plan with new information, so that the next mid-term developament plan (RPJMN) will be the country's first environmentally sound program.

According to the New Climate Economy (NCE) "the low-carbon economy is part of a strategy for sustainable growth and development making the most of, and investing in, Indonesia's natural, human, social, and physical capital".

The research carried out under the LCDi builds on previous work and expands the analysis to various sectors to capture social, economic and environmental dynamics. Innovative modeling work was performed, and forecasts were created by several local and international organizations. The novelty of this work is that it uses a systemic approach. Specifically, the impact of socio-economic development on the environment is first quantified, and then the impact of environmental degradation (including resource scarcity and reduction of ecosystem services) on economic performance is estimated.

What does it mean practically?
The LCDi systemic approach takes into account the fact that economic activity requires the use of natural resources, and generates pollution. Consumption, leading to resource scarcity, results in higher commodity prices and possibly reduced access to resources. Pollution in turn, can lead to health impacts, resulting in reduced labor productivity and an increase of health costs. In both cases, both businesses and households are negatively impacted, with the latter, and especially lower income families, being affected the most.

We now better understand that our economic strategies carry costs, costs that were mostly hidden (defined externalities) until now. With the LCDi, and its underlying work, it was possible to estimate the value of externalities, specifically for resource depletion (energy) and for ecosystem services (water and air pollution). This allows for the development of a more holistic development strategy, one that generates values across sectors, economic actors (households, businesses and government), dimensions of development(social, economic and environmental), as well as over time (for the short, medium and longer term). The goal is not to

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(above)
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optimize performance for one indicator, but maximize the outcomes across all indicators of performance, in a fair a just manner.

Results of the modeling work underlying the LCDi show that externalities cost the economy 1% to 1.5% of GDP every year, and this impact will grow over time. Resources are being used already to reduce externalities (e.g. water treatment and purification), and these resources could be saved and used more effectively under a Low Carbon Development strategy. With Low Carbon interventions, particularly targeting land and energy use, GDP growth averages 6.0% between 2018 and 2050, 0.7% higher than in the baseline scenario. At the same time, net job creation is forecasted, leading to reduced unemployment. Further, emissions will decline by 31.9% and up to 44.8% in 2030 respectively in a fair and a more ambitious scenario. Finally, forest land is forecasted to expand, fish stock to remain stable and avoid decline, and peat degradation will be largely avoided. This shows that it may well be possible to design a strategy that delivers for all economic actors, present and future, in a sustainable way.

Investments are required to realize such improvements, totaling 1% of GDP in the fair scenario and 1.7% of GDP in the ambitious scenario (or 2.8% and 6.3% of total investment respectively). On the other hand, the returns are much higher, with the gain in GDP being close to 6 times higher than the investment required (taking a societal perspective) and additional government revenues reaching the same level as the investment (taking a government perspective).

The role of Natural Capital Accounting

02

Various methodologies have been employed to carried out the studies that underlie the LCDi, thanks to the support of the WAVES program, this work is that is explicitly considers natural capital. Natural capital includes all of the resources that we easily recognize and measure, like minerals, energy, timber, agricultural land, fisheries and water.

It also includes the ecosystem services that are often "invisible" to most people, such as air and water filtration, flood protection, carbon storage, pollination of crops, and habitats for wildlife. These values are not readily captured in markets, so we don't really know how much they contribute to the economy. We often take these services for granted and don't know what it would cost if we lost them. A full picture of a country's wealth – obtained through a methodology called 'wealth accounting' – includes all assets that contribute to our economic wellbeing, from buildings and factory machines, to infrastructure, human and social capital, and natural capital.

In order to estimate the contribution of natural capital to Indonesia's development researchers used environmental accounts, to classify and quantify the use of natural resource and ecosystem services; economic valuation techniques, to estimate the economic value of ecosystem services; macroeconomic models, to forecast economic performance; and systems engineering approaches were employed for the analysis of the energy sector. The key word for this work is "knowledge integration", performed through the use of Systems Thinking, and quantified with a methodology called System Dynamics. This has allowed to carry out a comprehensive assessment that, despite not being all encompassing, has allowed BAPPENAS to identify and anticipate new challenges, and uncover new opportunities.

The road ahead for Indonesia will be difficult, as it has always been. On the other hand, it is possible to choose options that balance socioeconomic and environmental performance, despite new and emerging risks and challenges. It is hoped that the LCDi can serve as a positioning system in this journey, not only showing the direction (e.g. north), but allowing decision makers to visualize the path, obtain precise instructions on what turns to take, considering desired targets and making use of reliable forecasts for the outcomes of our actions. This considers all, performance across dimensions of development, economic sectors, economic actors, time and space.

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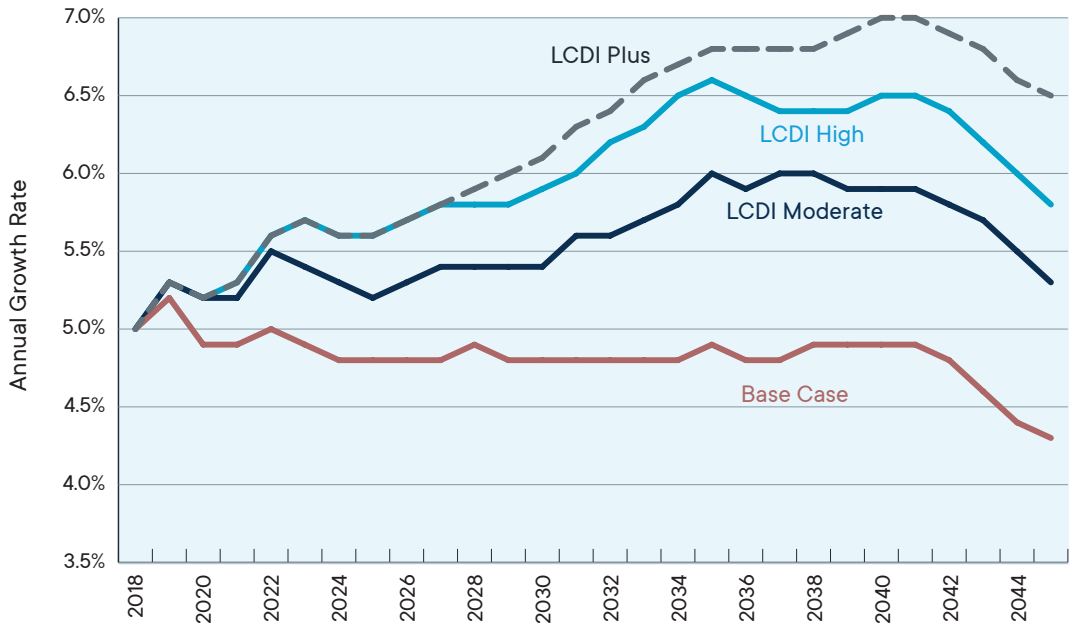
Figure 2. GDP Growth Trajectories for Scenario Modeled for This Report (2018–2045)



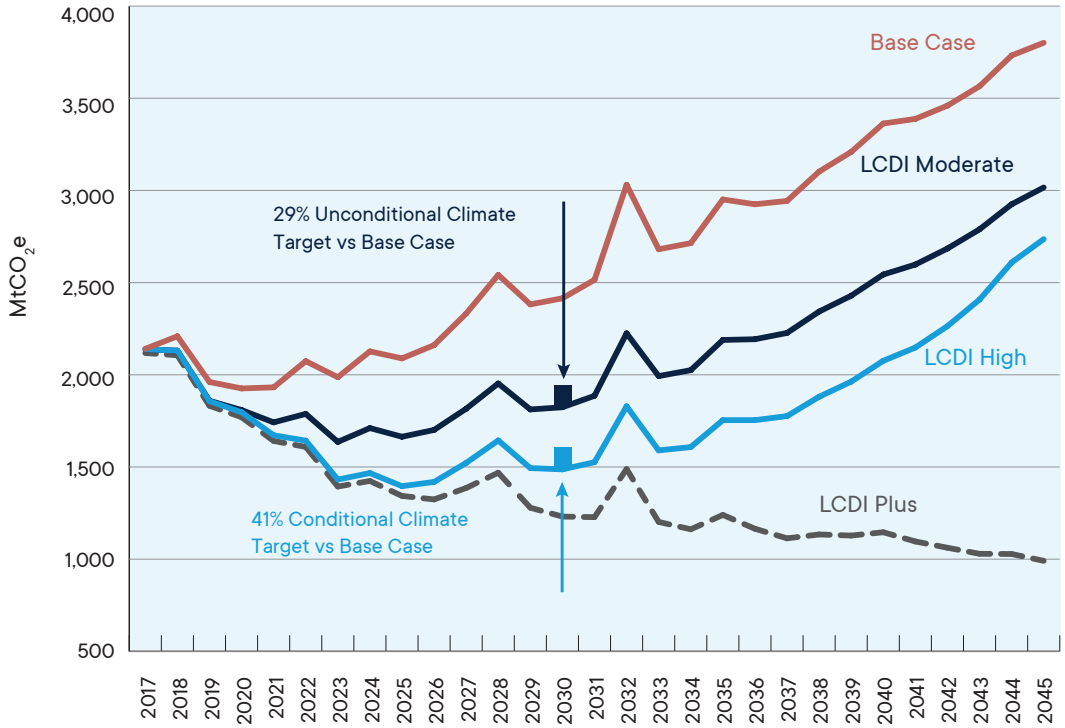
LCDI Plus: Reflects LCDI High for 2020–24 and additional, more ambitious policy measures thereafter

LCDI High: Includes more ambitious policy measures than LCDI Moderate for 2020–45; achieves the conditional NDC target

LCDI Moderate: Includes new low carbon policy measures for 2020–45; achieves the unconditional NDC target

Base Case: no new policies but reflects environmental degradation

Figure 3. Emission Trajectories for Scenario Modeled for This Report (2018–2045)



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LCDI High: Includes more ambitious policy measures than LCDI Moderate for 2020-45; achieves the conditional NDC target

LCDI Plus: Reflects LCDI High for 2020-24 and additional, more ambitious policy measures thereafter

Figure 1. Paradigm Change: The benefits of Indonesia's New Low Carbon Growth Path (LCDI High Scenario compared with Base Case)

Comprehensive analysis of prospects of a low carbon economy allowed Indonesia's Government to understand ways to grow sustainably and reduce pressure to natural capital. Bappenas, in cooperation with several development partners, including the World Bank, introduced the Low Carbon Development Initiative for Indonesia (LCDI) to explicitly incorporate GHG emissions reduction targets into the country's RPJMN 2020–2025, along with other interventions for preserving and restoring natural resources.6 The research carried out under the LCDI built on previous work and expanded the analysis to develop forecasts using a systems approach.7 Technical assistance under WAVES contributed to this approach and overall modelling exercise through development of natural capital methodologies, protocols, models and SEEA compliant data that were particularly useful to introduce and analyze carrying capacity, which is a concept that helps understand how growth could be constrained by the limits of natural capital stocks to provide ecosystem services (i.e. provisioning, regulating and cultural services). Arguably this represents one of the main contributions in terms of policy uptake, as this work underpins decisions that will be made in the next five-year policy cycle.

Wealth Accounting and the Valuation of Ecosystem Services

WAVES is a World Bank-led global partnership that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts.

www.wavespartnership.org

This policy brief was prepared as part of the LCDI program in which several institutions have participated including: