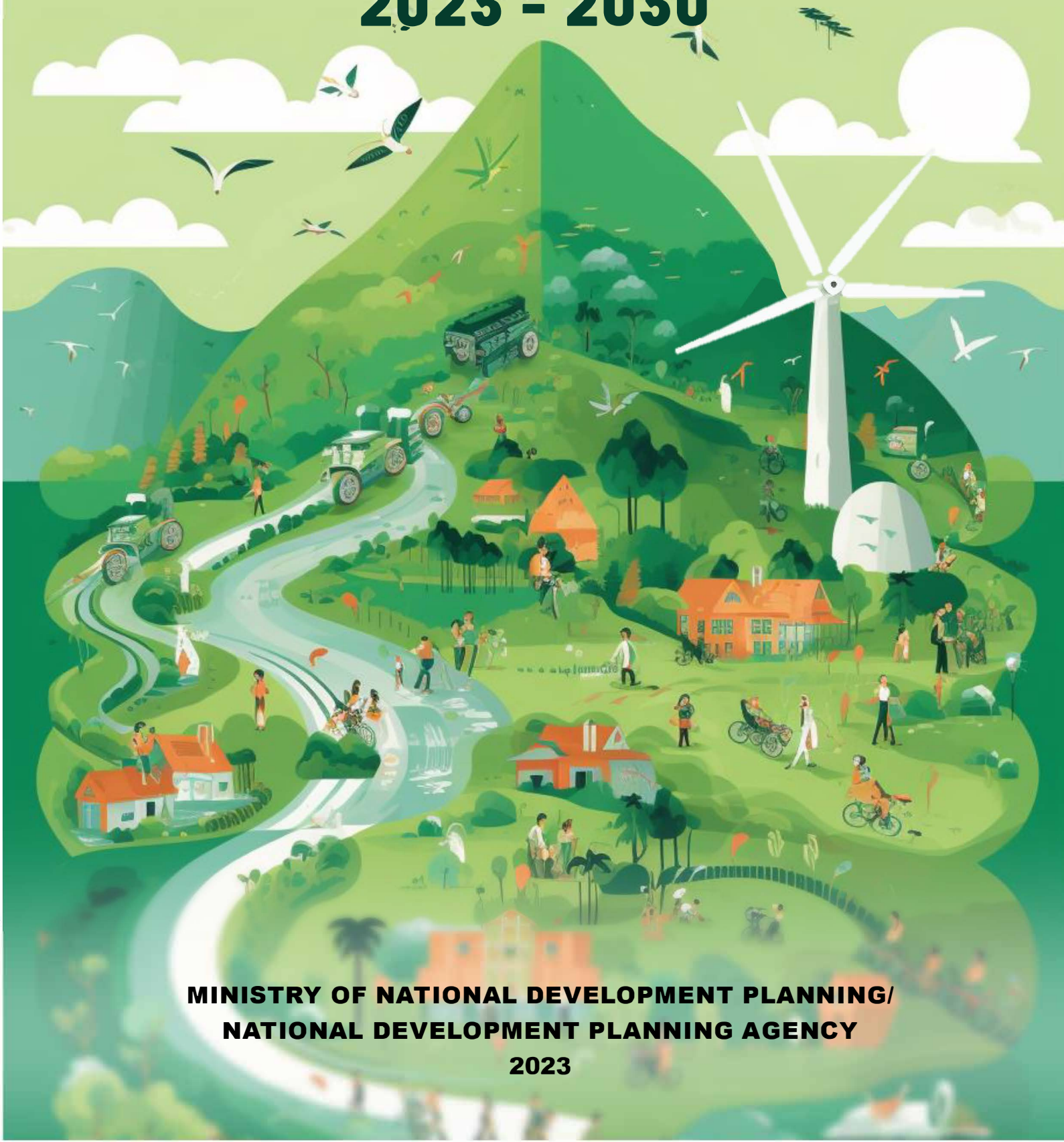
Ministry of National
Development Planning/Bappenas
Republic of Indonesia

ROADMAP OF
SUSTAINABLE DEVELOPMENT GOALS
2023 - 2030



MINISTRY OF NATIONAL DEVELOPMENT PLANNING/
NATIONAL DEVELOPMENT PLANNING AGENCY
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FOREWORD

As a country committed to achieving the Sustainable Development Goals (TPB/SDGs), Indonesia needs to pursue various strategies to accelerate the achievement of SDGs targets. Various progress in implementing the SDGs has been disrupted during the long Covid-19 pandemic, plus several global crises that accompanied the recovery period from the pandemic.

In the global crisis from which it has not yet fully recovered, Indonesia has proven to be able to survive and continue to rise to strive for future development transformation. To ensure sustainable and resilient development, the Government is preparing inclusive and sustainable structural reforms in the National Long Term Development Plan (RPJPN) 2025-2045. Development for the next 20 years is outlined in 8 (eight) development missions (agenda), namely Social Transformation; Economic Transformation; Governance Transformation; Rule of Law, Stability and Toughness of Diplomacy; Socio-Cultural and Ecological Resilience; Equitable and Quality Regional Development; Quality and Environmentally Friendly Facilities and Infrastructure; and Sustainability of Development. Through these various transformations, Indonesia is expected to achieve its Sustainable Development Goals commitment by 2030, as well as other global commitments, namely achieving Net Zero Emissions by 2060 or sooner.

Efforts to accelerate the achievement of the SDGs over the next 7 years certainly require strategic elaboration that can become a benchmark and reference for various stakeholders. For this reason, the Ministry of National Development Planning/Bappenas took the initiative to revise the previous SDGs Roadmap. Through collaboration with the SDGs Center at Padjadjaran University, supported by the Asian Development Bank, KfW and the European Union, as well as through a series of inclusive preparation processes, the 2023-2030 SDGs Roadmap has been prepared. This Roadmap is: i) a global SDGs agreement translated at the National level; ii) National Targets and Strategy for achieving SGDs until 2030; and iii) Reference in preparing National and Regional Development Plans. In accordance with the mandate of Presidential Decree no. 111/2022 concerning Implementation of the Achievement of Sustainable Development Goals, the SDGs Roadmap 2023-2030 was determined by the Minister of National Development Planning/Head of Bappenas.

The 2023-2030 SDGs Roadmap has been established by the Minister of National Development Planning/Head of Bappenas Number Kep. No. 118/M.PPN/HK/08/2023 and this document is the complete version with a more in-depth explanation regarding the methodology and includes more complete indicator projections. On this occasion I would like to express my highest appreciation and appreciation to all parties involved in preparing the 2023-2030 SDGs Roadmap. Hopefully all of these collaborative efforts will receive blessings from Allah SWT, as well as inspire and strengthen the commitment of all stakeholders to achieve the Sustainable Development Goals in Indonesia.

Jakarta, Oktober 2023

Suharso Monoarfa
Minister of National Development Planning/
Head of the National Development Planning Agency

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A. SDGs in the Context of Indonesia's Development Planning Path

Seven years have passed since the launch of Sustainable Development Goals (SDGs) as a sustainable global framework in 2016. Indonesia has achieved much as shown by a number of positive SDGs indicators, yet other SDGs indicators still underperformed and have even stagnated. As reported by the UN in 2022, Indonesia and almost all other countries around the world achieved lower-than-targeted SDGs indicators due to the unprecedented COVID-19 pandemic.

Not only that, Indonesia's development path also lost a lot in terms of achievements targeted in the long-term development plan, medium-term development plan, and Indonesia 2045 Vision and Missions. The 2020–2024 National Medium-Term Development Plan (RPJMN/*Rencana Pembangunan Jangka Menengah Nasional*) has essentially mainstreamed SDGs in its documents, and even implemented SDGs in the form of annual Government Work Plans (RKP/*Rencana Kerja Pemerintah*). Thus, we have to continue pushing for a developmental transformation and balancing the social, economic, health, and environmental dimensions to achieve sustained development and well-being, not just for the current generation, but also for future generations. SDGs are a global commitment that can be leveraged to bring about a development framework that is inclusive, equitable, and sustainable.

Indonesia's development transformation for the future is outlined in the 2025–2045 National Long-Term Development Plan (RPJPN/*Rencana Pembangunan Jangka Panjang Nasional*), containing the Golden Indonesia 2045 vision. Indonesia is expected to become a high-income country by 2045 with a per capita income of more than USD23,000, which means that we have to grow 6–7% annually for the next 20 years. Achieving SDGs targets by 2030 will catalyze the realization of Golden Indonesia 2045 vision through the following transformation agenda: 1) Social Transformation; 2) Economic Transformation; 3) Governance Transformation; 4) Rule of Law, Stability, and Diplomatic Prowess; 5) Social, Cultural, and Ecological Resilience; 6) Fair and Equitable Subnational Development; 7) High-Quality and Environmentally Friendly Facilities and Infrastructure; and 8) Sustained Development.

B. Challenges in attaining 2030 SDGs targets

1. COVID-19 Pandemic

Indonesia is no different from the rest of the world in facing enormous challenges during the COVID-19 pandemic. As of the writing of this document, COVID-19 has infected 6.42 million people in Indonesia with 158,000 deaths. Indonesia has successfully controlled the pandemic with a large amount of vaccine doses (432 million doses) already provided. Even though COVID-19 has yet to be eradicated, it is now under control.

Nevertheless, COVID-19 pandemic has impacted SDGs achievements, on both global and country levels, including Indonesia. The UN's 2022 SDGs Report pointed out that multiple and interconnected crises that come one after another in short succession have jeopardized the 2030 SDGs agenda, as well as humanity's continued survival. The report showed the scale and enormity of challenges that lie ahead. The COVID-19 pandemic, in addition to climate change and global conflicts, have affected food security and nutrition, health, education, environment, peace and security, and affected all SDGs performance. The report also showed a slowdown in target achievements for eradicating poverty and hunger, as well as for health, education, and other basic services. Other studies from UNPAD's SDGs Center and ERIA (Komarulzaman et al, 2021) concerning

COVID-19 impacts against SDGs achievements of ASEAN countries, indicated lags (delays in getting to the achievements) and gaps (target indicators not being met) in achieving SDGs targets. Indonesia counts among countries with significant lags and gaps in achieving SDGs targets.

2. Global Economic Situation

As the COVID-19 pandemic receded, global economic situation remained bleak and full of uncertainties. Although the availability of COVID-19 vaccines has facilitated the management of COVID-19 transmission, vigilance is still needed as new COVID-19 variants emerge. Furthermore, World Economic Outlook from the IMF, as well as the World Bank (2022), have stated that the war between Ukraine and Russia is causing a humanitarian crisis that requires peaceful resolutions. The conflict has caused a significant slowdown in global economic growth, along with rising inflation, especially in energy, fertilizer, and food prices. These have directly impacted the vulnerable in developing and low-income countries.

Rising inflation in the United States and Europe has triggered a global economic tightening. Growth across the world is projected to slow. The war has caused an upsurge in commodity prices and widening price pressures, leading to projected inflations of 5.7% in advanced economies and 8.7% in emerging markets for 2022. Multilateral efforts are therefore needed to end the pandemic, respond to humanitarian crises, prevent further economic fragmentation, maintain global liquidity, manage debt pressure, and overcome climate change. These issues pose tremendous challenges in achieving Indonesia and global SDGs targets by 2030.

3. Socio-Demographics

The 2022 Human Development Index (HDI) Report also showed that global uncertainties have impacted human development quality. The pandemic and ongoing global war that caused wider social and economic dislocations, polarization, plus the impact of climate change and disasters, mean that for the first time in 32 years, the Human Development Index (HDI) that measures achievements in health, education, and living standards of a country has dropped for two years straight. HDI went back to levels recorded in 2016. This has undoubtedly affected global SDGs achievements. More than 90% of countries experienced lower HDI scores in 2020 or 2021, and more than 40% have lower HDI in both years. This is an indication of the depth of the crisis.

Indonesia's lowered HDI ranking in 2020 is, of course, connected to the dynamics from previous years. Yet, any possibility for the trend to increase was wiped out by a structural break due to the pandemic in the last two years. Despite remaining in the high development position, Indonesia HDI ranking dropped from 107 to 114. Life expectancy fell significantly from 71.7 to 67.6. Furthermore, marginal increases in education and GDP per capita indicators did not help in preventing the drop in Indonesia's HDI.

Another challenge related to SDGs targets' achievement is population growth, which is a double-edged situation. On one hand, population growth will become a demographic bonus. At the moment, the number of productive age population (between 15–64 years) is larger than the number of non-productive age population (under 15 years and over 64 years). Based on the 2020 Population Census, out of the total population of 270.2 million people, 70.72% are in the productive age. The large difference between productive and non-productive age groups, as well as the accelerating growth of the older population, indicated that the Demographic Bonus will peak sooner. As part of the demographic bonus, the youth are expected to be the engine that spurs high-quality development and economic growth. The Youth Development Index Report (2021)

explained that the abundance of productive age population, especially the youth, does not automatically become a bonus if Indonesia does not increase the quality of their education, skills, and capabilities to navigate the labor open market. SDGs targets can only be achieved if the demographic bonus comes from high-quality human resources.

4. Structural Transformation (Stalled Industrialization)

The United Nations University (2022) in its report stated that since the 1990s, many developing and middle-income countries have been undergoing a de-industrialization process or premature de-industrialization. This refers to the situation in a number of countries which have reached "peak manufacturing" in employment and GDP share at a lower level than previous industrialists. In other words, manufacturing opportunities in economic development, as well as job creation, are being exhausted much sooner and thus reducing the benefits gained compared to other countries which have industrialized earlier. Such trend may worsen the global economy, increase inequality between countries, reduce growth, and weaken low and medium skill employment generation, thereby influencing inequality in developing countries.

Indonesia itself has been undergoing a premature deindustrialization, where industrialization has stagnated at an income level that is too low. Labor from the agriculture sector is not absorbed by the industrial sector, but instead goes into low-technology service sector. Therefore, another strategy is needed besides industrialization so that economic growth momentum can remain high. Professor Joseph Stiglitz said that the era of relying only on industrialization is now over as the momentum has weakened. A multi-pronged strategy is needed, where all sectors, not just the industrial sector, are developed in a balanced manner by combining and coordinating all sectors.

5. New Technology Trends (AI, Industry 5.0, Digitalization, and Future of Work)

Challenges against SDGs achievement by 2030 will also be connected with technology development today and in the future. Industry 5.0 is the answer for the need to keep the growth machine going while maintaining welfare. Through digital transition and green growth, the Industry 5.0 approach encourages a vision for the industrial sector that is more productive and efficient, pushing for roles and contributions to the public, placing workers at the center of production processes and using new technologies, as well as taking care to not exceed the limit of Earth's production capacity. Industry 5.0 complements the concept of Industry 4.0, by putting research and innovation towards transition into sustainable, human-centric, and resilient industries (EU, 2022).

Technology development towards digitalization, as well as Artificial Intelligence (AI), will also change the pattern of work in the future. Some jobs will disappear as they are replaced by technology. On the other hand, new kinds of jobs will emerge as employment opportunities blossom in newly developed sectors. The work place will change and the COVID-19 pandemic has accelerated these changes, requiring us to re-evaluate many aspects of work.

C. The Urgency to Revise Indonesia's SDGs Roadmap

The 2030 Agenda, with 17 Sustainable Development Goals and 169 targets, is a way for a more prosperous, equitable, and sustainable future. This is an agenda for humanity, Earth, and prosperity. Indonesia plays a critical role to achieve these global targets. Back in 2018, Indonesia already prepared an SDGs implementation roadmap intended to provide guidance for stakeholders on how best to navigate the complex tasks of achieving the 2030 Agenda. The roadmap is developed to strengthen target achievements, based on reliable data, and also the financing strategies. It also includes various aspects, such as SDGs indicators for which progress

can be tracked and projected, as well as interlinkages analysis as a tool to prioritize key indicators. The roadmap is used to communicate SDGs implementation issues with every stakeholder, such as policy makers, academics, civil society, businesses, and the media.

With the COVID-19 pandemic and various crises that came along, as well as global dynamics, such as polarization and technology changes, implementation strategies to achieve SDGs need to be strengthened. Thus, there is a strong need to revise SDGs Roadmap to become more agile and to accommodate the latest development issues.

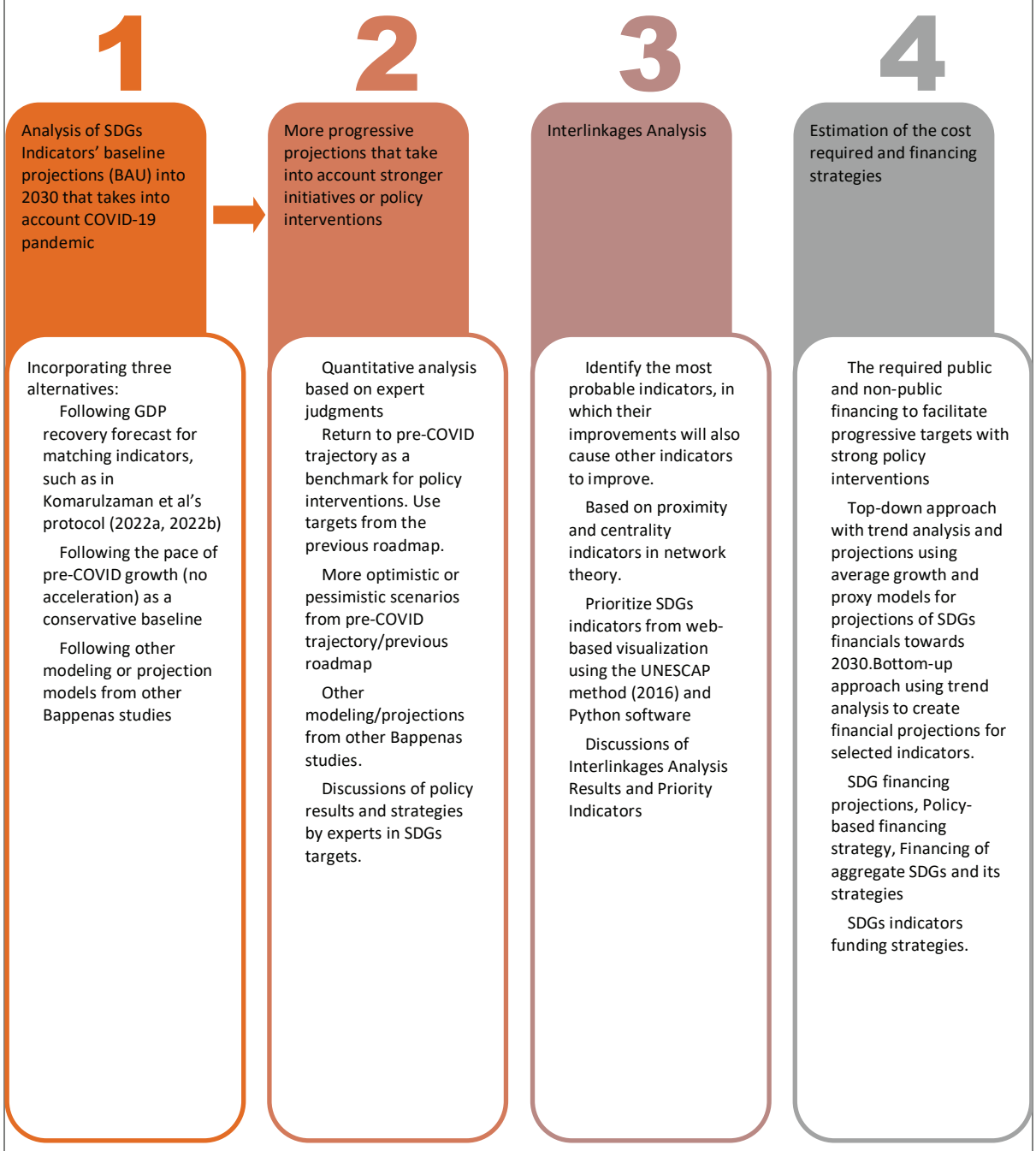
D. Roadmap Preparation Method

The steps to prepare the roadmap are as follows:

1. Develop a detailed work plan, including the methodology and time frame in formulating revisions to Indonesia's roadmap.
2. Develop situational analysis and projections for Indonesia's 2023–2030 SDGs Roadmap from selected indicators, based on baseline and intervention scenarios.
3. Analyze interlinkages between SDGs indicators to determine priority indicators.
4. Analyze funding strategies to implement SDGs.
5. Formulate policy recommendations based on SDGs indicators projections for 2020–2024 National Medium-Term Development Plan (RPJMN) and 2025–2045 National Long-Term Development Plan (RPJPN).
6. Conduct discussions and FGDs related to SDGs indicators projections.
7. Prepare SDGs roadmap and policy strategies.
8. Conduct workshops and public disseminations of SDGs roadmap.

In general, the method in this study consists of four steps, as shown in Figure 1.1 below

Figure 1.1 Steps in the Preparation Method for Indonesia's SDGs Roadmap



E. Baseline Projection Method

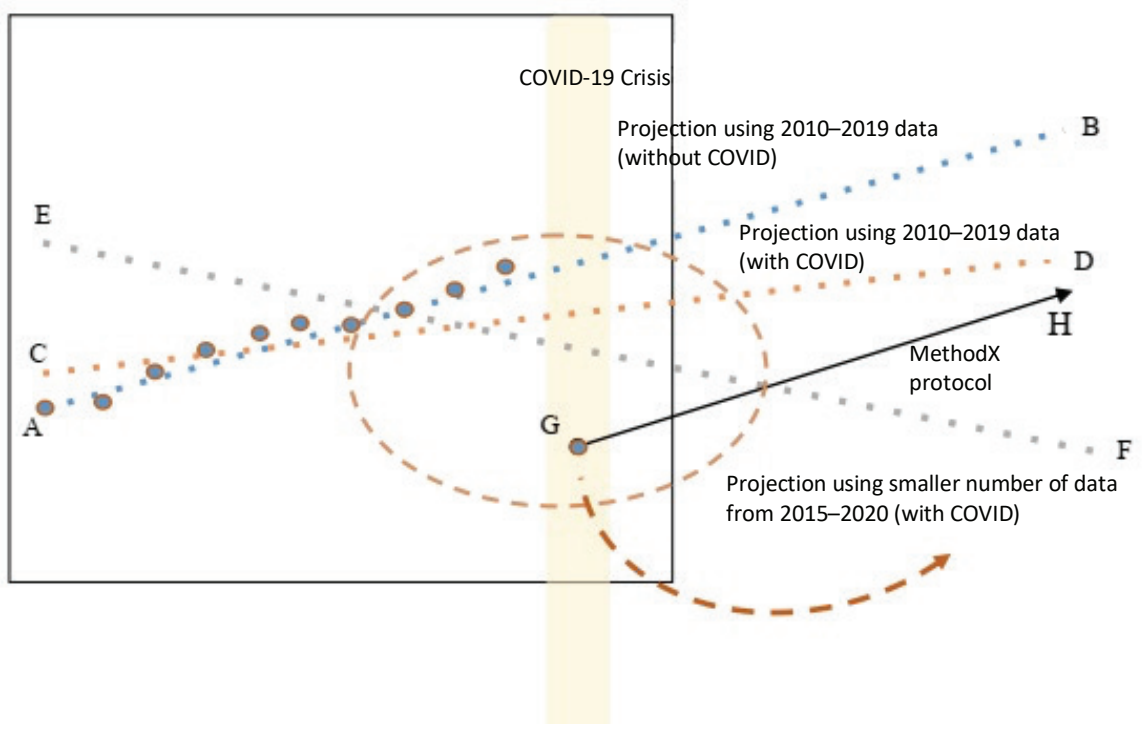
There are five methods of projections for each series of indicators (the best method will later be selected), the MethodX protocol (Komarulzaman et al., 2022) and four methods based on historical trends (Linear, Logarithm, Power, and Exponential). However, there are some indicators which were projected using other methods by the directorate in charge of such indicators, including those carried out by the Indonesia Economic Transformation Team.

Baseline projections using historical trend are carried out under the following four models:

1. Linear: $y_i(t) = \alpha_i + \beta_i t$
2. Exponential: $y_i(t) = \alpha_i e^{\beta_i t}$
3. Logarithm: $y_i(t) = \alpha_i + \beta_i ln(t)$
4. Power: $Y_i(t) = \alpha_i t^{\beta_i}$

Where $Y_i(t)$ is the series value i in year t. The α_i and β_i parameters are estimated using the OLS method (after linear transformation to enable the use of OLS) using data that is available to the latest year, including years during COVID-19 (2020) and 2021. Estimates from these models will produce adequate projections, provided that there is enough number of data (the years) or that the data does not fluctuate too much. A fundamental weakness of the historical trend approach is the non-robustness of the projections if there are outliers. COVID-19 in 2020 is one such outlier. How robustness is vulnerable to COVID-19 as an outlier can be seen from Figure 1.2 below.

Figure 1.2 Illustration of the weakness in baseline projection using historical trends



As we can see from the figure above, with historical data from 2010–2019 (showing a persistent and robust trend), our historical baseline projection (with linear trend) is the AB line. When we put in 2020 (COVID-19), the projection becomes the CD line, still on a rising trend albeit with a quite different slope. Issues arise if we have limited data, e.g. data is only available for six years (2015–2020). If we draw a trend using this data, the 2020 data (COVID-19), which is an outlier, will be enough to drag down the trend line and bend the projection downward (EF line). Thus, making projections using historical data (by putting in the latest data which may be an outlier) should be done very carefully.

MethodX Protocol

The MethodX protocol (Komarulzaman et al, 2022) is an alternative projection method that attempts to overcome the weaknesses of historical data-based projection methods. The advantages of the MethodX protocol are:

1. Forward-looking. The MethodX protocol is forward looking because the inputs it uses are economic growth projections produced by renowned institutions which have taken into account ongoing issues or issues that are anticipated to happen.
2. The protocol is applicable even with limited historical data because the protocol basically does not use historical data. Future projections can be generated using just the previous year's baseline data.

An illustration of the projection using the MethodX protocol is shown in Figure 1.2 on the GH line. Unfortunately, the MethodX protocol has the following weaknesses:

1. It only works for indicators that are strongly correlated with economic growth. Such correlation is tested using cross-sectional relationship between countries.
2. As it requires indicators that are elastic against income per capita estimated from data across multiple countries, the indicators are limited to those available for many countries.

Selecting the best model

To select the best model out of five estimation models (four historical trend models and the MethodX protocol), the following steps are carried out. First, check the assumption that the MethodX protocol is better than the other methods by retesting the results (intuition test). Among others, testing whether there is a strong correlation for Indonesia between the indicator in question and economic growth, especially during the COVID-19 crisis. For example, if the indicator did not worsen/only stagnated in 2020, perhaps the relationship between the indicator and economic growth may not be as strong as estimated from cross-country analysis. The shape of the projection's trajectory should also be visually checked to ensure that the trajectory is not counter-intuitive. If the checks are satisfactory, the indicator (which uses the MethodX protocol) can be selected as the best result. If the checks are not satisfactory, the indicator will be selected out of four alternative trends from models with historical data. For this Roadmap, only a few major indicators will be projected and analyzed towards 2030, while other indicators will be shown as a full report in a separate document.

F. SDGs Interlinkages Analysis Method

The roadmap adopts an SDGs interlinkages analysis approach that follows the framework used in previous researches, such as those discussed in (El-Maghrabi et al., 2018) and (UNESCAP, 2016). However, some adjustments are needed to match the context and available data. This approach referenced economic complexity analysis and network theory which have been used in previous researches by (Hartmann, et.al., 2015; Hausmann et al., 2013; Hausmann & Klinger, 2006; Hidalgo et al., 2007). Under this approach, interlinkages between various SDGs indicators can be more comprehensively understood and analyzed.

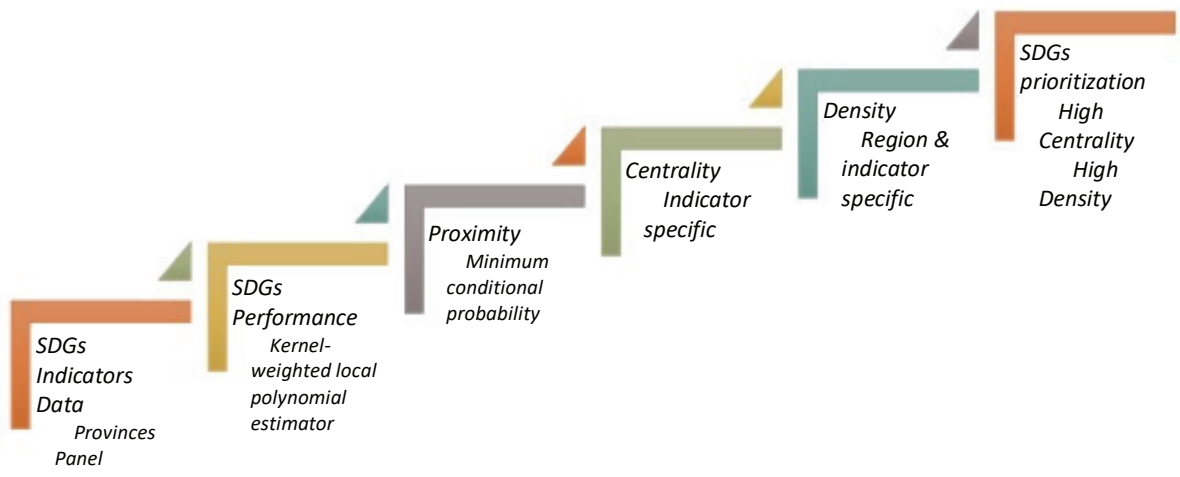
SDGs interlinkage analysis uses indicator-level data. Such an approach makes it possible to generate more specific analysis by identifying priority indicators. Instead of just using one or several indicators to represent a specific objective or target, a more detailed relationship and interaction between SDGs indicators can be found by analyzing indicator-level data. The SDGs interlinkages approach is based on empirical data analysis (data driven), without involving qualitative interlinkages determination process between indicators based on theories or

literature studies. This is relevant considering that the nature of interlinkages between SDGs indicators may be context specific. As such, determining SDGs interlinkages based on Indonesia's latest achievement data is expected to capture the uniqueness and complexity of SDGs achievement in Indonesia. On the other hand, the method is very transparent and can be replicated by other parties.

However, just like other interlinkages analysis based on empirical data, how closely-linked indicators to one another will very much depend on the availability and thoroughness of the indicators being researched. Ideally, we should be able to include all SDGs indicators in such analysis to draw up a full SDGs network. In reality, however, this is difficult to pull off due to limitations in data availability and resource constraints. This approach is expected to uncover a deeper interlinkages pattern among SDGs indicators to provide better guidance in formulating sustainable development strategies and policies in Indonesia.

Steps for SDGs interlinkages analysis are as follows: (1) Gather historical data of SDGs indicators for all provinces in Indonesia; (2) Measure SDGs indicators performance based on Revealed Comparative Advantage (RCA); Calculate (3) proximity, (4) centrality, and (5) density; and (6) Select priority SDGs indicators (see Figure 1.3). The interlinkages analyzed 208 SDGs indicator-dimensions in 34 provinces in Indonesia. The data being used is obtained from the National SDGs Secretariat (26 August 2022). To ensure validity and quality of the data, availability of data for provinces has been ensured.

Figure 1.3 Flow of SDGs interlinkages analysis



Following Gable et. al. (2015), El-Maghrabi et. al. (2018) & UNESCAP (2016), SDGs indicators performance is measured based on the capacity of a province as proxied by its expenditure per capita, which is a part of Indonesia's Human Development Index (HDI). For every combination of provinces and SDGs indicators, a province is classified as an overperformer if data on its SDGs indicator achievement is statistically better than the expected performance based on the capacity of the province in question.

Such classification is formally measured using the concept of Revealed Comparative Advantage (RCA). RCA consists of binary numbers (zeros and ones), representing the comparative advantage of each indicator calculated as follows:

$$RCA(i,c) = \{1,0. \frac{x_{i,c} > Z_{\alpha=0.05} + E(x_{i,c})}{otherwise}$$

Where RCA (*i, c*) is the RCA value for an SDGs indicator (*i*) and a province (*c*), which is valued at 1 if the value of the SDGs indicator is above 95% confidence interval from the mean, and valued at 0 if otherwise.

Next, SDGs proximity is conceptualized as the ease of using a region's capacity among various SDGs indicators depending on the degree of similarity between these indicators. Technically, the proximity between two SDG indicators A and B is defined as the minimum of two conditional probabilities: the conditional probability of finding A given B; and the probability of finding B given A; since conditional probabilities are not symmetrical, as shown in the following equation.

$$P(B) = \frac{P(B)}{P(B)} \neq P(A) = \frac{P(A)}{P(A)}$$

Once SDGs proximity is calculated, SDGs centrality can then be calculated as the sum of all estimated SDGs proximity pairs. Centrality is used as a measure of connectedness, in which a high centrality indicates that a particular SDG has high proximity with other SDGs. In other words, if a region is successful in one SDG, that region is likely to be successful in other indicators. SDGs with high centrality are strongly recommended to be re-implemented and enhanced to achieve the overall SDGs agenda.

$$Centrality_j = \sum_i \quad Proximity_{ij}$$

When preparing this roadmap, priority indicators are identified based on high centrality (interlinkages between indicators) values. Further, there are 191 indicators in the study that form a network using a concept adopted from UNESCAP (2016).

The SDGs network is built by taking into consideration the calculated proximity and centrality values. Each indicator is connected to other indicators in the network with weighted relationships determined by its proximity value. The network skeleton is built using a Maximum Spanning Tree (MST) algorithm, which connects each indicator with its "partner indicator(s)" at the closest distance. A detailed explanation about this algorithm can be found in articles by Hidalgo, C.A. Hausmann (2007) and UNESCAP (2016).

Subsequently, all links with proximity values above a certain threshold (0.7) are added into the MST frame that was previously built. Such filtering process makes it possible to discover connections between "more significant" indicators, those that have high proximity values. Lastly, the network is visualized using the Kamada Kawai algorithm. The method arranges an optimal network layout to help understand interlinkages between indicators in the formed SDGs network.

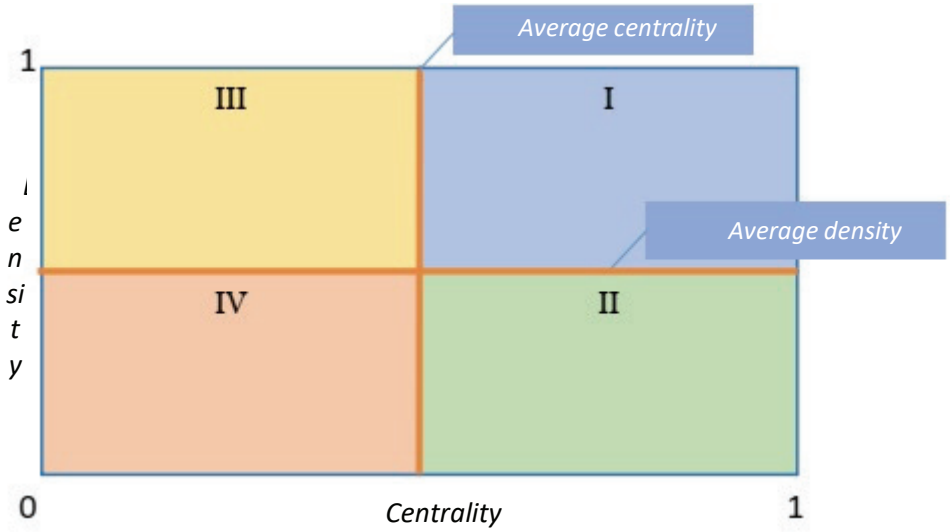
The last metric to be calculated is SDGs density, which is defined based on estimation in one SDG against other SDGs that have been achieved. Formally, the density for province c in SDGs indicator j, which performed poorly, is the sum of proximity between SDG j and all other achieved SDGs, divided by the sum of all estimates that points to SDG j (scale based on centrality).

$$Density_{cj} = \frac{\sum_i \quad Proximity_{ij} RCA_{cj}}{\sum_i \quad Proximity_{ij}}$$

The three metrics above can then be used to identify priority indicators at the provincial level. A few criteria can be used to determine priority indicators, among others:

- Indicators with high density mean that they have better potential to be achieved (to overperform) because the provinces have the required capacity to achieve such indicators.
- Indicators with high centrality mean that achieving those indicators may positively impact the achievement of other indicators. Provinces that successfully achieve indicators with high centrality have a better chance to achieve other indicators because high-centrality indicators generally have higher influence on SDGs performance compared to other indicators (Figure 1.4).

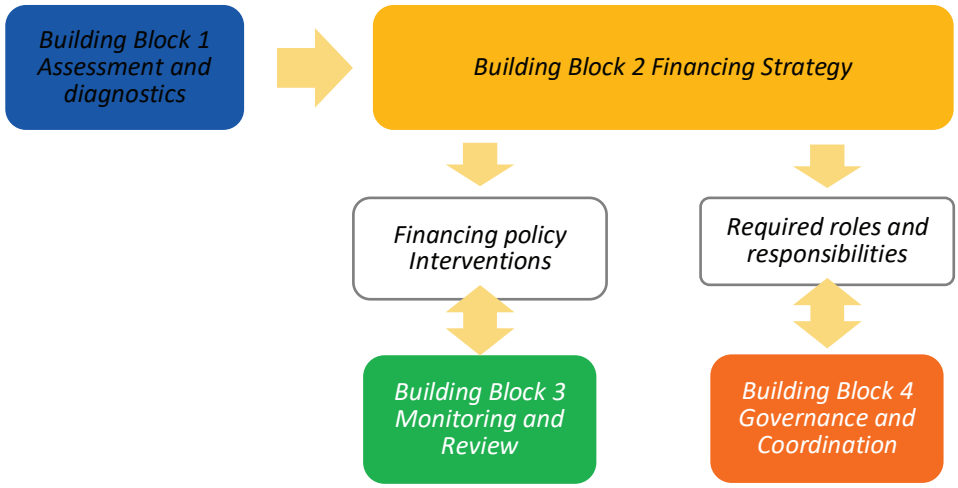
Figure 1.4 Quadrant Analysis



G. Methods for SDGs Funding Strategy

SDG financing strategies are aimed at encouraging innovative approaches and developing strategies and plans to mobilize finance, aligning financial resources (BAPPENAS, 2022). This section describes the proposed approaches for financial flow to achieve efforts and goals in line with SDGs. This study defines SDG financing in the context of a broader funding flow that includes any financial modality, which include financing and funding with and/or without concessions as long as it is meant to support achieving SDG targets by 2030.

Figure 1.5 INFF Stages in Developing Financing Strategies and Structures



Source: INFF, 2022

One of the main references in developing SDG financing strategies is the Integrated National Financing Framework (INFF). The INFF concept brings together policies and the existing institutional structure to support financing for national development strategies and plans (see Figure 1.5). The INFF concept begins with the assessment and diagnostics of existing financing strategies through literature and document reviews (see Appendix). Indonesia's INFF has already mapped out existing sustainable financing sources, including domestic, international, and private financing sources (United Nations et al., 2022). The financing framework has also developed a financing flow for national development strategies and plans based on Building Block 1 (assessment and diagnostics).

Indonesia's INFF proposed a number of priority financing strategies, such as increasing public expenditure to boost private fund mobilization, and increasing the incentives to implement SDGs at the subnational level (United Nations et al., 2022). The broader INFF concept is also supported by monitoring and review of indicators (Building Block 3). In that regard, Indonesia's INFF has also prepared guidelines for INFF monitoring and review based on UNDP's guidelines through four focus activities, which are: 1) institutionalizing INFF monitoring and review, 2) improving existing system integration, 3) connecting ongoing or planned data/statistics reform processes and leveraging information technology solutions based on the requirements, and 4) increasing insights and lessons learned from work partners and knowledge exchange platforms at the regional/global level. Then, continuing with review of realized financing flow. This is translated as an intervention towards financing policies. Governance and coordination (Building Block 4) are also further discussed to propose the required roles and responsibilities. This stage describes the required governance and coordination arrangement to implement INFF, and maps it into existing structures. SDGs financial analysis is carried out at the aggregate as well as indicator levels, to understand both the macro and the technical perspectives. Aggregate values are developed using a top-down approach (combining trend analysis and light economic modeling) and the technical perspective uses a bottom-up approach at the indicator level using unit cost method. These two methods and approaches will be explained in more details below. The two approaches are mutually exclusive. Calculation of SDG financing at the indicator level is being done for the first time and is not part of the previous SDG roadmap. In such calculation, no relationship is created among indicators to obtain maximum activity cost estimates for a particular indicator.

Top-down approach

The top-down approach uses trends and projection analysis. Baseline projections using average growth calculations leveraged existing real SDG financial data. Intervention projections will be developed based on two options: financial leverage target policies and proxy calculations for projecting SDG financing into 2030. To clarify the terms used, Box 1.1 outlines the most used definitions.

Box 1.1. Definitions used in the calculation for SDG financing strategies

- Realization cost is the annual cost incurred by the government to achieve SDG in the same year;
- Baseline cost is the cost that will be incurred by the government to achieve SDGs targets under the baseline scenario as the business-as-usual scenario;
- Intervention cost is the cost incurred by the government to achieve SDG through an intervention scenario (based on NZE in LCDI for a top-down approach and based on intervention targets for a bottom-up approach);
- Financing gap is the difference in costs which will be incurred by the government to achieve SDG targets between baseline and intervention; and
- Financing strategy is every financial scheme to mobilize financial resources to achieve SDG targets

Supporting data is obtained from Statistics Indonesia (BPS), Summary of Draft State Budget (*Nota APBN*) issued by the Ministry of Finance, and macroeconomic assumptions for this study include inflation, economic growth, exchange rate, and population number as shown in Table 1.1 below. For rupiah exchange rate, data is obtained from the Directorate of Macro Planning and Statistics Analysis (*Direktorat Perencanaan Makro dan Analisis Statistika*) at the National Development Planning Agency (*Bappenas*).

Table 1.1 Macroeconomic assumptions

Year	Macro Assumption Variables			
	Economic growth*	Inflation*	USD to IDR Exchange Rate*	Population**
2021	3.70	1.87	14,269	272,679,153
2022	5.31	5.51	15,731	275,719,905
2023	5.30	3.55	15,342	278,696,193
2024	5.35	2.24	14,440	281,603,799
2025	5.45	2.79	14,657	284,438,782
2026	5.55	2.95	14,877	287,198,383
2027	5.65	2.97	15,100	289,880,103
2028	5.85	3.00	15,326	292,480,929
2029	6.00	3.00	15,556	294,998,415
2030	6.50	3.00	15,790	297,430,679

Source: Directorate of Macro Planning and Statistics Analysis at the National Development Planning Agency (2023);
**Directorate of Population and Social Security at the National Development Planning Agency (2023)

Options for the intervention projections are developed based on several assumptions. First, Indonesia aspires to be a high-income country by 2045 (hereinafter referred to '2045 Vision'), in commemoration of the 100 years of Indonesia's independence in 1945 (Bappenas, 2019). The assumption is based on the experience of other countries in determining financing

requirements and objectives, or known as the 'proxy method'. The proxy method is adapted from previous Indonesia's SDG roadmap. The method compares the experiences of other developing countries in achieving their position as developed or high-income countries.

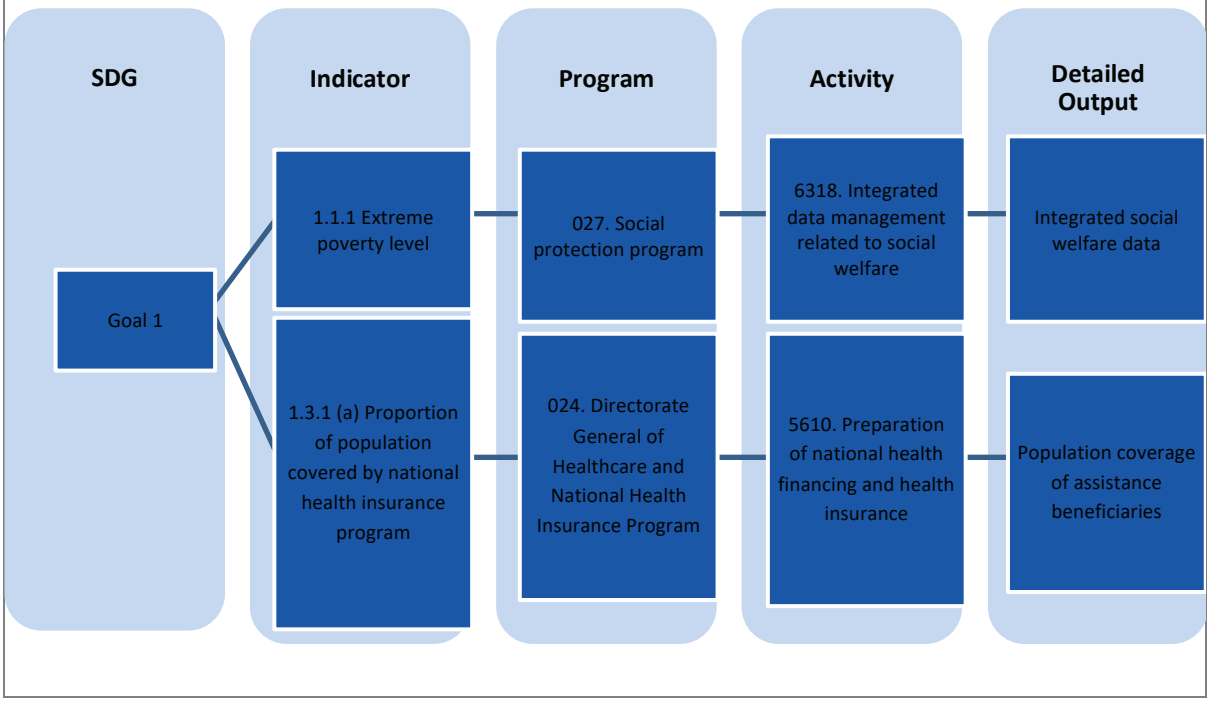
Another assumption is that domestic public budget is insufficient to achieve all target indicators, so private financing is needed to fill the gap between baseline and intervention scenarios. Experiences in financial leverage in Indonesia show that the current system is not explicitly designed for financial leverage, but public finance and private finance are both used with a ratio of 1:0.9. Using several role-based policies and interventions, public finance and private finance policies can be aligned, coordinated, and designed to increase private investment in SDGs. This can be done by increasing and replicating the blended-finance approach used by SDG Indonesia One targeted for several government infrastructure projects.

Projections were done under the assumption that the Government will continue to develop an enabling environment in line with its 2045 vision to be implemented through the 2025–2045 National Long-Term Development Plan (RPJPN) currently being developed by Bappenas (Bappenas, 2023). The enabling environment includes a number of conditions, such as supporting policies that are required to facilitate the blended-finance arrangement, monitoring the consistency of administrative requirements for investments, such as waiting time for approval, procedural streamlining, clean and transparent governance in a tendering process, as well as competitive bidding by the national and subnational governments.

Bottom-up approach

The bottom-up approach uses trend analysis to create financing projections for the selected SDG indicators. SDGs consist of 17 goals where each goal have several indicators and under each indicator, there are detailed programs, activities, and outputs (see Figure 1.9). Not all goals have specific financing data that are monitored and reported. The study is limited to calculating SDGs financing indicators in which the delivery data can be obtained from the Summary of Draft State Budget (*Nota APBN*) and calculated and presented by the Government exclusively for certain indicators. There are 11 out of 248 indicators with financial information that can be sourced from publicly available and verifiable information.

Figure 1.6 Data structure of SDGs financing



This section uses the unit cost method to calculate financing projection under the bottom-up approach at the indicator level. Unit cost for a particular indicator is obtained from the budget being disbursed for a particular objective in the government financial statements (which are fully aligned with the indicator) divided by the realized target of that indicator. Target realization of indicators is obtained from 2015 to 2022 from trusted sources, such as the website or reports from Statistics Indonesia (BPS). This section provides two calculations based on targets from two different scenarios, which are baseline and intervention. Furthermore, the cost of realization will be shown as a financial requirement graph for each selected indicator, with the aim to illustrate the trend of financing needs during the entire SDGs time frame (from 2015 to 2030). At the end of every indicator section, the study illustrates the financing gap between baseline and intervention.

CHAPTER II

TARGETS AND STRATEGIES TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS

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A. Goal 1 Zero Poverty

Goal 1 of SDGs is to End Poverty in All Its Forms Everywhere with the following targets:

- Target 1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day.
- Target 1.2: By 2030, reduce at least by half the proportion of men, women, and children of all ages living in poverty in all its dimensions according to national definitions.
- Target 1.3: Implement nationally appropriate social protection systems and measures for all, including for the poorest, and by 2030 achieve substantial coverage of the poor and the vulnerable.
- Target 1.4: By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services, including microfinance.
- Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.
- Target 1.a: Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and affordable means for developing countries, in particular least developed countries, to implement programs and policies to end poverty in all its dimensions.
- Target 1.b: Create sound policy frameworks at the national, regional, and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions.

Indicators to be discussed in the roadmap are:

a) Indicator 1.1.1* Extreme poverty rate
b) Indicator 1.2.1* Percentage of population living below the national poverty line, by sex and age
c) Indicator 1.3.1.(b) Proportion of workers covered by the social insurance for employment program: Formal Workers
d) Indicator 1.3.1.(b) Proportion of workers covered by the social insurance for employment program: Informal Workers

1. Target Achievements for Goal 1

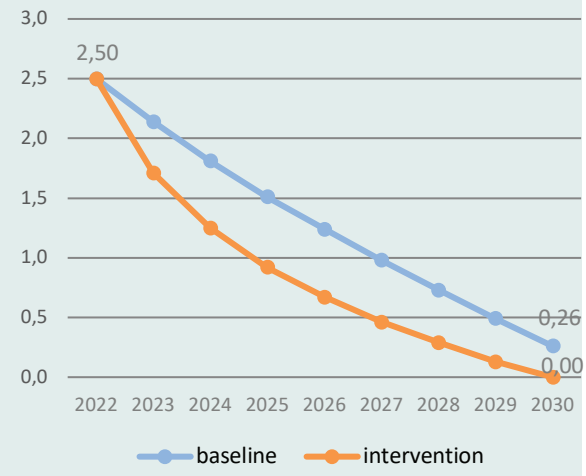
The baseline level of extreme poverty is 3.5% in 2021 and based on a business-as-usual (BAU) projection, it is expected to decrease to 0.23% by 2030 (see Figure 2.1). This means that total eradication is projected to occur after 2030 under the BAU scenario. Under the intervention scenario, the target to eradicate extreme poverty can be achieved exactly by 2030, in line with the global target of zero extreme poverty by 2030. This also takes into consideration that the lower the poverty level is, the harder it is to reduce poverty (the last mile problem). The difference between the BAU scenario and the intervention scenario is 0.23% point.

Meanwhile, the poverty level based on the national poverty line is 9.54% in 2022 (baseline) and is projected to decrease to 6.6% by 2030. Therefore, an intervention is expected to close the gap by almost 3% from the BAU projection (see Figure 2.2).

Another important indicator that will be discussed in Goal 1 is workers that are covered by employment social insurance. For that matter, an important indicator that needs to be monitored is the proportion of workers covered by the social insurance for employment program, both for formal workers and informal workers (1.3.1(b)).

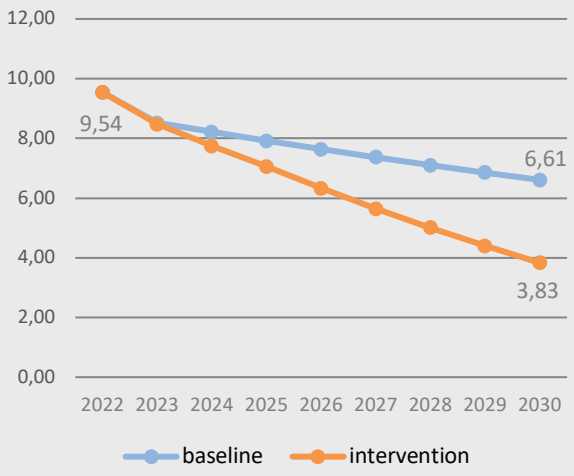
Under the BAU scenario, the proportion of formal workers covered by the social insurance for employment program is estimated at 64% by 2030, rising from about 57% in 2022. Targeted policy intervention can raise it further to 77% by 2030. Meanwhile for informal sector workers, under the BAU scenario, the proportion of informal workers covered by the social insurance for employment program is estimated to increase from 13.5% in 2022 to 22% by 2030. With policy intervention, participation is expected to increase to 57% by 2030.

Figure 2.1 Indicator 1.1.1* Extreme poverty rate (%)



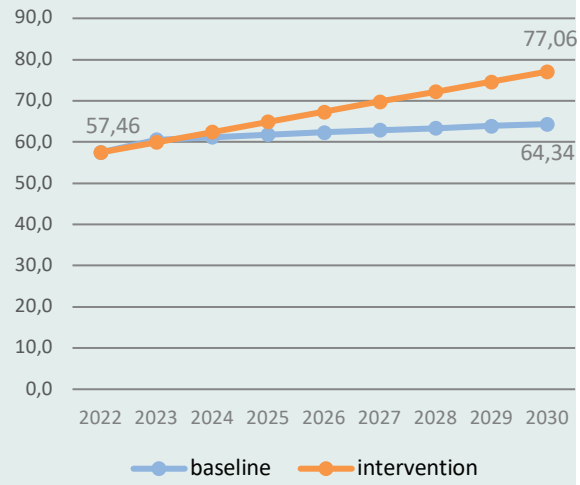
Note: Baseline projection uses the MethodX model and intervention projection refers to the logarithm model, following the global target of 0% by 2030 (PPP $2.15)

Figure 2.2 Indicator 1.2.1* Percentage of population living below the national poverty line, by sex and age (%)



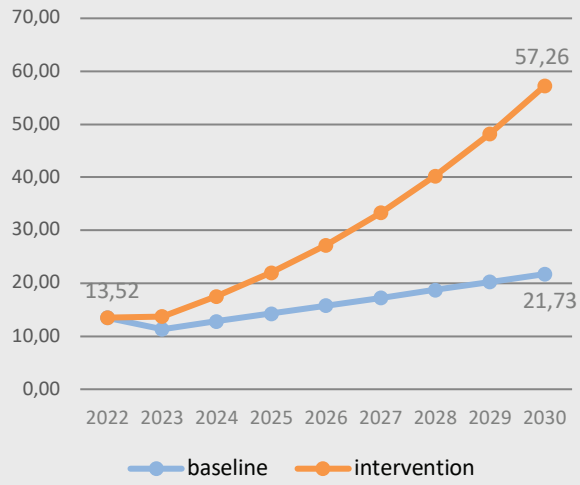
Note: Baseline projection and intervention projection refer to results from an exercise by the Indonesia Economic Transformation (TEI) Team

Figure 2.3 Indicator 1.3.1. (b) Proportion of Workers Covered by the Social Insurance for Employment Program: Formal Workers (%)



Note: Baseline projection uses the power model and baseline projection uses the power model

Figure 2.4 Indicator 1.3.1. (b) Proportion of Workers Covered by the Social Insurance for Employment Program: Informal Workers (%)



Note: Baseline projection uses the linear model and baseline projection uses the power model

2. Achievement Strategies for Goal 1

There are at least three important elements that must be met in policies to achieve poverty alleviation targets, including extreme poverty level: First, sustained and broad-based economic growth, second, investment in human development, and third, safeguarding the poor so they are not vulnerable against various risks. Besides the three elements, in the context of the last mile challenge commonly faced when trying to eradicate extreme poverty, attention must be focused on the disadvantaged or marginalized (the left behind).

Broad-based economic growth strategy

Broad-based economic growth is inclusive economic growth, both in sectoral terms and in the participation of community groups, including the poor. Good external macroeconomic conditions through high-quality economic growth are a prerequisite for poverty eradication. High-quality economic growth means inclusive economic growth, pro-poor (characterized by faster economic growth of the poor compared to the rich), and pro-jobs (characterized by increasing decent work and reduced level of job informality).

Indonesia's economic growth strategy through the Indonesia 2045 Vision and Indonesia 2045 transformation strategy promotes inclusive economic growth strategy as it seeks to shift sources of growth from being based on natural resources and cheap labor to being based on productivity. The Indonesia 2045 Vision also explicitly targets economic growth reorientation through a re-industrialization strategy. The strategy is expected to drive productivity and absorb labor as had happened in the 1980s.

Human Resources Investment

Development of human resources in the context of alleviating extreme poverty generally involves equity of access and quality of basic social services (such as education,

health, clean water, and sanitation). Human development has become the main pillar in the Indonesia 2045 Vision, particularly Human Development and Proficiency in Science and Technology. The vision is targeted at increasing the quality of Indonesian people through higher and more equitable education, a strong culture, health status, life expectancy and better quality of life, high productivity, and the ability to broadly master science and technology.

In the education sector, the strategy is Improving Access and Education Enrollment. Everyone receives high-quality education services without discrimination at all levels of education; Equity of access to education services to ensure that the Indonesian population is free from geographic and financial constraints; Increasing community involvement in educational development; improving teachers' professionalism, shifting learning approaches, among others, from expository to discovery learning approach; improving school culture; promoting a reading culture; enhancing proficiency in foreign languages and preserving local languages; improving vocational education; improving entrepreneurship education; and character education.

In the health sector, the strategies include, among others, improving life expectancy to 75.5 years by 2045; Improving access to proper, high-quality, and equitable healthcare services for all population and every age group, socio-economic group, and all regions of Indonesia;

Increasing domestic production of medicines and medical devices; Guaranteed continuity of National Health Insurance; It is expected that due to various programs, the stunting rate will be down to just 5% by 2045. Specifically for stunting, the government has a national strategy to reduce stunting, consisting of 5 pillars (leadership commitment and vision, national campaign and behavior change communication, Convergence, Coordination, and Consolidation of National, Subnational, and Village Programs; Food and Nutrition Resilience; Monitoring and Evaluation). The interventions conducted are, among others, specific nutritional interventions (for pregnant women, breastfeeding mothers, and babies 0–23 months, adolescents, and women of reproductive age, babies 24–59 months) and sensitive nutrition (improving access to drinking water and sanitation, improving the quality of nutrition and healthcare services, as well as other educational activities). The regions also play a very important role as they are expected to have specific innovation and creativity in tackling stunting.

Social protection

Major social protection programs, which include the Smart Indonesia Program (PIP/*Program Indonesia Pintar*), Government Scholarship for Poor Students (Bidikmisi/*biaya pendidikan mahasiswa miskin berprestasi*)/Smart Indonesia Card for Higher Education (KIP Kuliah/*Kartu Indonesia Pintar Kuliah*), Conditional Cash Transfers (PKH/*Program Keluarga Harapan*), Staple Food Card Program (BPNT/*Bantuan Pangan Non-Tunai*), Government-Subsidized National Health Insurance (*PBI Jaminan Kesehatan Nasional*)/Healthy Indonesia Card (KIS/*Kartu Indonesia Sehat*), various subsidies, pre-employment card (*kartu prakerja*), job-loss insurance (*jaminan kehilangan pekerjaan*), Government-Subsidized National Health Insurance for Non-Wage Earners and Non-Workers (*Bantuan Iuran PBPU dan BP kelas III JKN*), and direct cash assistance (BLT/*bantuan langsung tunai*) for village fund. Government-Subsidized National Health Insurance (*PBI Jaminan Kesehatan*) and Conditional Cash Transfers (PKH) are among programs with the largest budget expenditures. A number of scientific literatures have proven that these programs are quite effective. For instance, one such studies showed that PKH managed to increase human capital accumulation. Other impacts include,

among others, childbirth by professional workers has increased dramatically, number of children under 15 years who is not in school has dropped by half, and stunting among children has decreased by 23%. Another study that discussed the Staple Food Card Program (BPNT/*Bantuan Pangan Non-Tunai*) showed that shifting the delivery mechanism from manual to electronic has improved program effectiveness to 46%.

No one left behind

President Jokowi issued Presidential Instruction No. 4 of 2022 on acceleration of extreme poverty eradication, which orders the relevant institutions to take the necessary steps by their respective duties, functions, and authorities to accelerate extreme poverty eradication by ensuring target accuracy and program integration among ministries/agencies by involving the public, focusing on priority locations to accelerate extreme poverty eradication. The strategies employed are (a) reducing the expenditure burden of the general public; (b) increasing the income of the general public; and (c) reducing pockets of poverty. Budgets used include the State Budget, Subnational Budgets, and other sources. The instruction is addressed to 22 ministries, 6 government agencies, and all governors and heads of districts across Indonesia. With a specific strategy targeting 0% extreme poverty by 2024, the government has prepared four main scenarios: (1) economic growth recovery; (2) price stability for staple items; (3) high accuracy on target setting; and (4) program implementation collaboration and complementarity.

Challenges, Opportunities, and Strategies for the future

In the context of economic growth which is a prerequisite for poverty eradication, the chance for reindustrialization is pretty open because China has moved up to advanced industrialization that depends on capital-intensive industries, opening the opportunity for Indonesia to become a labor-intensive manufacturing location again. Even so, the challenges will be quite huge as there are a lot of competitors, such as Vietnam.

Meanwhile, the strategy to improve human resources quality, especially related to overcoming stunting, has been working, but its success is greatly influenced by factors outside of the program, such as the financial capacity of poor families. As long as economic inequality remains high, stunting will continue to be a problem. Therefore, other efforts in the context of poverty and inequality reduction must always be carried out.

Various social protection programs are quite effective, but still need to be expanded. At the moment, the proportion of social protection programs remains relatively small compared to the state budget and GDP. A larger fiscal space for such programs is expected in the future. Further, there are potential improvements in various plans for the future, including first, ensuring that every downstream or reindustrialization strategy, especially ones based on natural resources (such as the development of electric vehicles, etc.), is broad-based, pro-poor, pro-job, and pro-productivity.

Second, in the context of alleviating extreme poverty, focusing attention on the left-behind groups, particularly the elderly, persons with disabilities, the youth, and women living in underdeveloped regions. Things that can be done: (a) come up with development statistics that accurately monitor data on the welfare of marginalized people, fully aware of the no-one-left-behind imperative; (b) monitor and protect women, the elderly, and the youth in underdeveloped or remote areas; (c) strengthen protection regulations for marginalized people and conduct more information dissemination in the field; (d) reduce stigmatization of the no-one-left-behind group

through education and; (e) advance underdeveloped regions in line with the green economy and digital economy.

B. Goal 2 Zero Hunger

Goal 2 of SDGs is to End Hunger, Achieve Food Security and Improved Nutrition, and Promote Sustainable Agriculture with the following targets:

- Target 2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.
- Target 2.2: By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons
- Target 2.3: By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
- Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
- Target 2.5: By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.
- Target 2.a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.
- Target 2.b: Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round.
- Target 2.c: Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.

Target 2.1 and 2.2 of SDG Goal 2 represent the theme of providing safe and adequate food and nutrition for society. Both targets are closely related and inseparable from one another in the context of providing food and nutrition for everyone all year round.

From these two targets for SDG Goal 2, four indicators are analyzed, which are:

a) Indicator 2.1.1* Prevalence of Undernourishment (PoU).
b) Indicator 2.1.2* Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES).
c) Indicator 2.2.1* Prevalence of stunting among children under 5 years of age.

d) Indicator 2.2.2* Prevalence of wasting (weight for height) among children under 5 years of age

1. Target Achievements for Goal 2

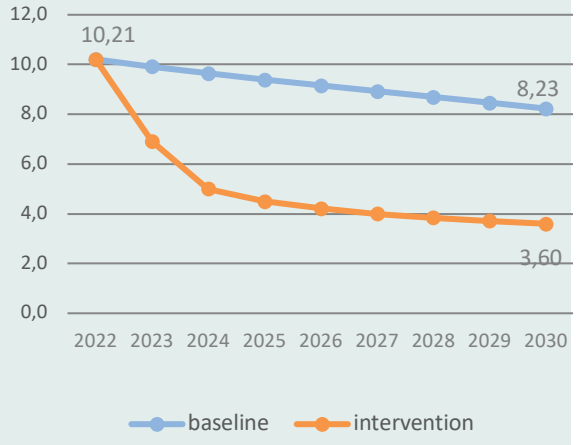
Consumption and food insecurity

Within the past five years, overall performance achievements for the four indicators of SDG Goal 2, Target 2.1 and 2.2 related to the aspects of providing food and nutrition for society have shown a positive or improving trend.

Based on Statistics Indonesia reports, PoU figures (indicator 2.1.1*) from 2017–2019 have trended down (improving), but risen again in the next two years (2020–2021). The increase is influenced by the COVID-19 pandemic which began in Indonesia in early 2020. In 2017, PoU was 8.23% and down to 7.63% by 2019, but it went up again to 10.21% in 2022.

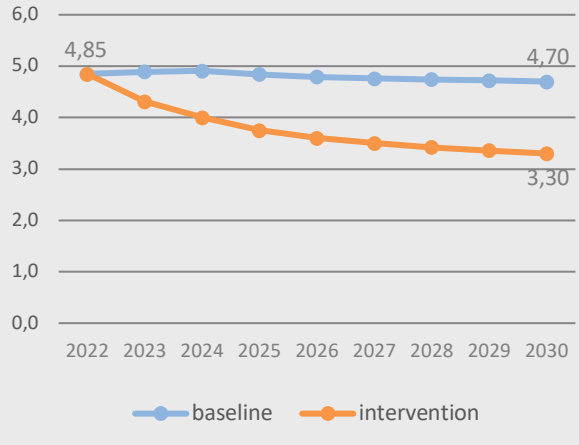
Projection for PoU indicator performance based on the baseline model is estimated to go down (improving) on a constant path. PoU for 2024 is projected to improve to 9.64% and 8.23% by 2030. In contrast with the baseline model projection, PoU based on intervention scenario model is projected to drop relatively quickly from 2022 to 2024, then go down at a slower pace and stabilize by 2030. PoU in 2024 and 2030 are respectively 5.00% and 3.60%. In contrast to PoU figures, Statistics Indonesia reported that FIES prevalence (indicator 2.1.2*) from 2017–2021 continued to decrease (improving), but COVID-19 pandemic has slowed down the decrease and by 2022, FIES is rising again. FIES prevalence was 8.66% in 2017, 4.79% in 2021, and rose to 4.85% in 2022.

Figure 2.5 Indicator 2.1.1* Prevalence of Undernourishment (PoU) (%)



Note: Baseline projection uses the MethodX model and intervention projection refers to the logarithm model.

Figure 2.6 Indicator 2.1.2* Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (%)



Note: Baseline projection and intervention projection refer to the logarithm model.

Baseline model projection estimated that FIES prevalence in 2022–2024 will increase, albeit very slowly, to 4.91% in 2024. For the 2024–2030 period, FIES prevalence will slowly decrease to 4.70% in 2030. FIES prevalence based on intervention model projection is estimated to consistently decrease every year at a slowing pace. FIES prevalence will be 4.0% in 2024 and will become 3.30% in 2030.

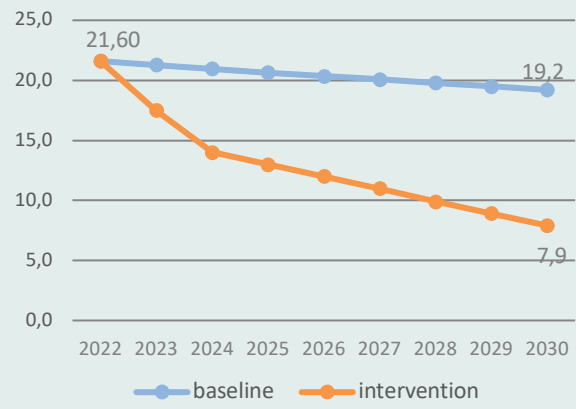
Stunting and malnutrition

According to the Ministry of Health, the prevalence of stunting among children under 5 years of age (indicator 2.2.1*) in the 2018–2022 period has quickly decreased (improving) from 30.8% in 2018 to 24.4% in 2021, and decreasing further to 21.6% in 2022, or an average annual decrease of 2.3% (Riskesdas 2018, SSGBI 2019, and SSGI 2021 & 2022). As with other SDG indicators, the COVID-19 pandemic has hampered the efforts to accelerate stunting reduction, even though the indicator has continued to improve during the period.

Baseline model projection estimated that the prevalence of stunting among children under 5 years of age in the 2022–2030 period will decrease in a slow linear fashion every year. The prevalence of stunting among children under 5 years in 2024 and 2030 is estimated to be 20.95% and 19.20%, respectively. Meanwhile, intervention model projection for the prevalence of stunting indicated a strong acceleration in stunting decrease from 2022–2024 and continuing to decrease at a slower pace from 2024–2030. By 2030, the prevalence of stunting among children under 5 years is projected to reach 7.90%, an enormous gap when compared to the baseline model projection.

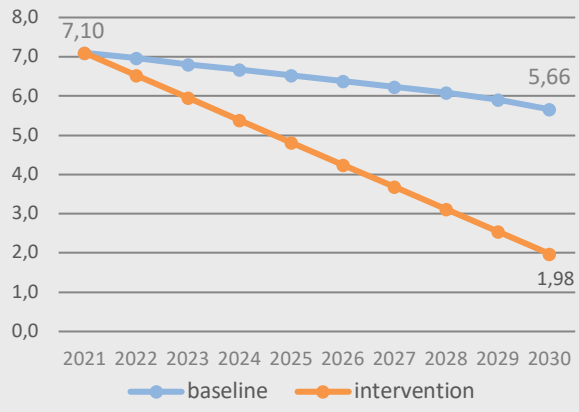
The prevalence of wasting among children under 5 years of age in the 2018–2021 period has decreased from 10.2% to 7.1% but increased again in 2022 to 7.7%. The main culprit for this increase is the COVID-19 pandemic. Based on the baseline model projection, in the 2022–2030 period, the prevalence of wasting will slowly decrease with an average of 0.15% each year, thus the figure will be 6.67% in 2024 and will become 5.66% in 2030. Using the intervention scenario model, wasting among children under 5 years is projected to decrease faster at an average of about 0.57% each year, thus by 2024 and 2030, the prevalence of wasting will reach 5.39% and 1.98%, respectively.

Figure 2.7 Indicator 2.2.1* Prevalence of stunting among children under 5 years of age (%)



Note: Baseline projection uses the MethodX model and intervention projection refers to results from an exercise by the Directorate of Public Health and Nutrition, Bappenas

Figure 2.8 Indicator 2.2.2* Prevalence of wasting (weight for height) among children under 5 years of age (%)



Note: Baseline projection and intervention projection refer to projections from the Indonesia Economic Transformation Team

2. Achievement Strategies for Goal 2

Current policy and strategy direction

SDG Goal 2 (Zero Hunger) is one of the national development priorities listed in the 2019–2024 National Medium-Term Development Plan (RPJMN). The COVID-19 pandemic that began in early 2020 resulted in slowing economic growth, even recessions, in many countries including Indonesia. The government has taken steps to recover the economy, especially for sectors and communities directly affected by the pandemic. One of the recovery priorities is to strengthen economic resilience with a focus on creating labor-intensive employment including in agriculture and fishery, strengthening the food system, restoring cooperatives and SMEs. To accelerate public nutrition improvement, the government has issued various policies, including:

a. Presidential Regulation No. 42 of 2013 on National Movement to Accelerate Nutrition Improvement; a joint effort to encourage stakeholders' participation and awareness in a planned and coordinated manner to accelerate public nutrition improvement.
b. Presidential Instruction No. 1 of 2017 on Public Movement for Healthy Living; among others, instructs the Minister of Health to improve education on balanced nutrition and exclusive breastfeeding, the Minister of Public Works and Public Housing to facilitate providing clean water and basic sanitation in public facilities, and the Minister of Agriculture to monitor fresh food safety and quality and encourage the use of home gardens for a diverse, nutritionally balanced, and safe (B2SA/*beragam, bergizi seimbang, dan aman*) food supply.
c. Presidential Decree No. 83 of 2017 on Strategic Policy on Food and Nutrition; among others, stipulates strategic policy on food supply, food affordability, food utilization, and public nutrition improvement; as well as National Action Plan on Food and Nutrition (RAN-PG/*Rencana Aksi Nasional Pangan dan Gizi*) and Subnational Action Plan on Food and Nutrition (RAD-PG/*Rencana Aksi Daerah Pangan dan Gizi*) containing programs and activities in food and nutrition to bring about high-quality and competitive human resources.
d. Presidential Regulation No. 72 of 2021 on Acceleration of Stunting Reduction; guides coordinated efforts between relevant Ministries/Agencies, multi-sector subnational governments, non-governmental organizations, and the public to carry out the five pillars of national strategy to reduce stunting and implement specific interventions and sensitive interventions in tackling the direct and indirect causes of stunting.
e. Presidential Regulation No. 66 of 2021 on National Food Agency; the main functions of the new Agency are to (a) strengthen food availability and stabilize food supply and prices, (b) control food insecurity and strengthen awareness on food and nutrition, and (c) strengthen food consumption diversity and food safety.

Implementation of strategies, policies, and programs above is outlined in the relevant Ministries/Agencies Strategic Plans. These Ministries/Agencies will implement programs and activities by involving various stakeholders with an interest in developing food systems and public health across Indonesia.

The described strategies, policies, and programs are conceptually quite strong as they are fully and comprehensively prepared to achieve SDG Goal 2, especially in connection with the efforts to sustainably meet public food and nutrition requirements. These policies, programs, and activities include the development of a resilient and sustainable food system, as well as integrated efforts for public nutrition improvement.

Challenges

The implementation is often times the weak point. Since these programs and activities are implemented by multiple relevant Ministries/Agencies, including multi-sector subnational

governments, the implementation is often partial, sectoral, and uncoordinated, thus leading to undeveloped synergy and synchronization in field implementation. This causes sub-optimal use of development resources. Furthermore, subnational governments and other stakeholders (private sector, academics, civil organizations) need to be more involved. This is important because food system development and public nutrition improvement require active and intensive participation from all stakeholders.

Future policy and strategy direction

The success of providing food and nutrition for society, down to each individual, in a sustainable manner by SDG Goal 2, is determined by the performance of three sequential and interrelated pillars of the food system, namely availability, affordability, and utilization of food. Transforming the food system to a more resilient and sustainable direction requires formulating comprehensive policies and strategies that take into account economic, social, and environmental aspects. Implementation of programs and activities to develop such a food system should involve multiple sectors and all stakeholders, namely the government, subnational governments, private sector/State-Owned Enterprises, academics, civil organizations, and farmers-fishers as well as other business actors (through public-private partnership/PPP).

Achievement of the SDG Goal 2 target indicators is also influenced by other factors outside of the food system, such as access to healthcare, clean water, and electricity services; the extent of women's participation in formal education; improvements in public knowledge and behavior, particularly women on food, nutrition, and health; and functioning institutions and good governance of food and nutrition.

Thus, the efforts to achieve SDG Goal 2 have high interlinkages with the achievement of various other SDG goals. Some SDG goals that have interlinkages with the achievement of SDG Goal 2 are, among others, Goal 1 Zero Poverty, Goal 5 Gender Equality, Goal 6 Clean Water and Sanitation, Goal 12 Responsible Consumption and Production, Goal 14 Life Below Water, and Goal 15 Life on Land.

Sources of food supply to meet people's demand for food consist of domestic production, national food reserves, and food imports carried out by national interests, including safeguarding the interests of consumers and food-producing farmers. These three sources of food need to be managed in a manner that is integrated and aligned to bring about the supply of diverse, nutritionally balanced, and safe (B2SA) food with reasonable and stable pricing at all times. Providing food to meet society's needs, down to each individual, is based on the policies of food sovereignty and food independence. Food sovereignty is the right of states and nations to independently determine food policies that guarantee the right to food for the people and that give the people the right to determine a food system that is by the potentials of local resources. Food independence is the ability of states and nations to produce a variety of food from within the country by optimally utilizing the potentials of natural, human, social, economic and local wisdom resources in a dignified manner (Law No. 18 of 2012 on Food).

Domestic food production is the main source of food supply. To meet the demand for food that continues to rise year after year due to increases in population and per capita income, the use of science and technology (IPTEK/*ilmu pengetahuan dan teknologi*) needs to be intensified, including digital technology and innovative practices gleaned from communities that are able to improve productivity, business efficiency, overcome the impact of climate change which is increasing in intensity, and are environmentally aware. Furthermore, by understanding the diversity of potential resources in various regions, the food system development can implement regionalization, where the diversity of genetic resources can be used as local food sources, including food derived from aquatic animals, plants, and algae, which are cultivated or caught in freshwater and the sea (blue food).

Another aspect of the food supply dimension is the management of national food reserves, which consist of government food reserves (national and subnational) and community food reserves, to maintain stable supply and food prices all year long. Government food reserves are also needed to provide food assistance to communities vulnerable to food insecurity, which are poor households, families with children aged 0–2 years (*keluarga 1000 hari pertama kehidupan*), the elderly, and those affected by natural and social disasters.

Economic affordability is related to people's purchasing power which is generally affected by economic growth and job opportunities. Physical affordability is determined by the smooth distribution of food and the proper functioning of logistics systems and food supply chains throughout Indonesia. Economic growth that is consistently high every year and smooth distribution systems and food supply chains will determine the performance of the food affordability dimension.

To help with food affordability for low-income groups, including vulnerable groups such as families with children aged 0–2 years (*keluarga 1000 Hari Pertama Kehidupan*), social safety net programs in the form of food assistance distribution need to be continued with better targeting and more proper delivery. To improve the quality of consumption for these groups towards B2SA food patterns and subnational economic empowerment, composition of the distributed food needs to be designed about the principles of balanced nutrition with food sources that are based on local potentials and local wisdom.

Food utilization is characterized by behavior changes among households and individuals in their patterns of food consumption and nutrition. To improve the public's food consumption quality, public knowledge and awareness should be increased towards a diverse, nutritionally balanced, and safe (B2SA) food consumption pattern. To encourage public behavior to consume diverse, nutritionally balanced, and safe (B2SA) food, there need to be public nutrition counseling activities, as well as dissemination, promotion, and education by various relevant Ministries/Agencies together with multi-sector subnational governments, and involving non-governmental organizations. Given the abundance and potential of natural resources, and varying agro-ecosystem conditions among the regions, the public's food consumption behavior should be encouraged towards a diverse, nutritionally balanced, and safe (B2SA) food consumption pattern by optimizing resource diversity and local wisdom of each region.

Specifically, to achieve the indicator in prevalence of stunting among children under five years, the Government has issued Presidential Regulation No. 72 of 2021 on Acceleration of Stunting Reduction. Any stipulated policy should be geared towards specific interventions (to tackle direct causes) or more holistic sensitive interventions (to tackle indirect causes). The challenge is the coordination efforts required to implement the five pillars of national strategy to reduce stunting as formulated in the Presidential Regulation including, among others, efforts to strengthen convergence to accelerate stunting reduction at the field level. Similarly, by their tasks and functions, the relevant Ministries/Agencies together with multi-sector subnational governments, and involving non-governmental organizations, should commit to implement specific interventions and sensitive interventions to overcome direct and indirect causes of stunting.

To achieve SDG Goal 2 by 2030 as measured by the performance of several indicators (end hunger, achieve food security and improved nutrition, and promote sustainable agriculture), policy and strategy directions are formulated in various development planning documents. Furthermore, several national and international-level meetings have produced important recommendations, among others, the UN Food Systems Summit in 2021 and G20 Meeting of Agriculture Ministers in Bali, in September 2022. By referencing these development plans and implementation documents, as well as results from the meetings, the following are the recommended policy refinements, as well as programs/activities:

a. Improve food production and develop sustainable farming:
   1) Establish a resilient and sustainable national food system, a. supported by subnational/territorial food system development by resources potential and local wisdom; implementation of climate change adaptation and mitigation technology; and natural resources management (land, water, and bodies of water), and regenerative, non-exploitative, and non-damaging genetic resources (nature positive food systems).
   2) Increase food production to be more diverse and based on local food resources, by mainstreaming specific local food in food production improvement policies and programs; developing food production centers, farmers' corporations, precision farming, family farming; and optimizing the use of home gardens, bodies of freshwater, and the sea.
   3) Develop modern farming, including accelerating the use of digital technology and innovative practices gleaned from communities to improve productivity and business efficiency, to sustainably increase food production and the income of farmers/food farming businesses.
   4) Encourage downstreaming of farms and fisheries (agroindustry) to gain added value and increase the income of food farming businesses.
   5) Accelerate the reduction of food losses by using the appropriate technology for food harvesting, processing, storage, and distribution to the retail level.
   6) Implement a 'One Health' approach to develop farming and food systems for an accelerated time frame in overcoming Antimicrobial Resistance (AMR), as well as prevent, reduce, and manage biological threats and risks against the food system and agriculture.
   7) Increase small-scale farmer accessibility to various payment instruments, technology and innovation, input and output markets, and market information.
   8) Strengthen the development of the food industry that is based on local food, especially food-related SMEs to provide safe processed food, and bolster job opportunities and the subnational economy.
   9) Encourage participation in agricultural insurance for farmers and fishers to ensure income security and production incentives.
   10) Strengthen the roles of women, the youth, and small-scale farmers by providing skills boost, business assistance, and various economic opportunities for agricultural businesses and along the food supply chains.

b. End hunger and ensure food access for all:
   1) Improve the coverage of food distribution, logistics, and trade between regions across Indonesia, including the outermost, remote, and frontier regions, to ensure sustainable and affordable food supply for all.
   2) Develop and manage government food reserves, subnational and community food reserves, to maintain stable supply and strategic food prices all year long.
   3) Accelerate the reduction of food waste by improving knowledge, awareness, and public attitude on the economic, social, and environmental value of food, including support for community movements regarding 'food rescue', 'save food', and 'food bank'.
   4) Distribute food social assistance to households that are vulnerable to food and nutrition insecurity (low-income community, families with children aged 0–3 years/*keluarga 1000 HPK*, and the elderly) and those affected by natural and social disasters, with specific food assistance packages that are properly targeted and based on local food and local wisdom.

c. End all forms of malnutrition:

1) Increase production of biofortified and fortified food, and distribute them to low-income households, families with children aged 0–3 years (*keluarga 1000 HPK*), primary school-age children, and the elderly to overcome micronutrient deficiencies and meet B2SA food consumption quality on an accelerated time frame. Criteria to select fortified food are food that are consumed everyday by most members of the public, such rice, salt, cooking oil, and wheat flour.
2) Implement nutrition supplementation by providing vitamin A capsules to babies and children under 5 years, blood-boosting tablets for pregnant women and adolescent girls, and supplemental food for children under 5 years, school-age children, and pregnant women.
3) Improve knowledge, awareness, and public and family attitudes, especially parents (mothers and fathers) on the need for all household members to consume food with a diverse, nutritionally balanced, and safe (B2SA) food consumption pattern, in accordance with each individual's need for a healthy, active, and productive life.
4) Provide counseling on public nutrition, health promotion, as well as supplying clean water and improving environmental sanitation.
5) Carry out specific interventions and sensitive interventions to accelerate stunting reduction as directed by Presidential Regulation No. 72 of 2021, along with assistance to families with children aged 0–3 years (*keluarga 1000 HPK*); increase the coverage and quality of key specific and sensitive interventions, promote a diverse, nutritionally balanced, and safe (B2SA) food consumption, increase the performance in managing malnutrition, as well as increase access to drinking water and sanitation; and provide assistance to subnational governments to strengthen convergence and develop one data.

C. Goal 3 Good Health and Well-Being

Goal 3 of SDGs is to Ensure Healthy Lives and Promote Well-Being for All at All Ages with the following targets:

- Target 3.1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.
- Target 3.2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce Neonatal Mortality to at least as low as 12 per 1,000 live births and under 5 years mortality to at least as low as 25 per 1,000 live births.
- Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
- Target 3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.
- Target 3.5: Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
- Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents.
- Target 3.7: By 2030, ensure universal access to sexual and reproductive healthcare services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs.
- Target 3.8: Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all.
- Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

- Target 3.a: Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate.
- Target 3.b: Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.
- Target 3.c: Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing states.
- Target 3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

For Goal 3, 16 indicators will be projected and discussed, grouped into 5, which are:

Maternal and Child Health, and Reproductive Health Target includes the following indicators:

a) Indicator 3.1.1* Maternal mortality ratio
b) Indicator 3.1.2* Proportion of ever-married women aged 15–49 years whose last birth process is (a) attended by skilled health workers
c) Indicator 3.1.2* Proportion of ever-married women aged 15–49 years whose last birth process was (b) at healthcare facilities
d) Indicator 3.2.1* (a) Under-five mortality rate per 1,000 live births
e) Indicator 3.2.1* (b) Infant mortality rate per 1,000 live births
f) Indicator 3.2.2* Neonatal mortality rate per 1,000 live births
g) Indicator 3.7.2* Adolescent birth rate (aged 15–19 years) per 1,000 women in that age group.
h) Indicator 3.7.2.(a) Total Fertility Rate (TFR)

Communicable Disease Target includes the following indicators:

a) Indicator 3.3.1* Number of new HIV infections per 1,000 uninfected population
b) Indicator 3.3.2* Tuberculosis incidence per 100,000 population
c) Indicator 3.3.3* Malaria incidence per 1,000 population

Non-Communicable Disease Target includes the following indicators:

Indicator 3.4.1.(a) Percentage of population aged 10–18 years who are smokers

Substance Abuse Target includes the following indicators:

Indicator 3.5.2* Alcohol consumption (in liter per capita) by the population aged 15 years and older within the last year

Universal Health Coverage Target includes the following indicators:

a) Indicator 3.8.2* Proportion of population with large household expenditures on health as a share of total household expenditure or income: Proportion of health expenditures > 10 percent
b) Indicator 3.8.2* Proportion of population with large household expenditures on health as a share of total household expenditure or income: Proportion of health expenditures > 25 percent
c) Indicator 3.8.2.(a) Coverage of National Health Insurance (JKN/*Jaminan Kesehatan Nasional*)

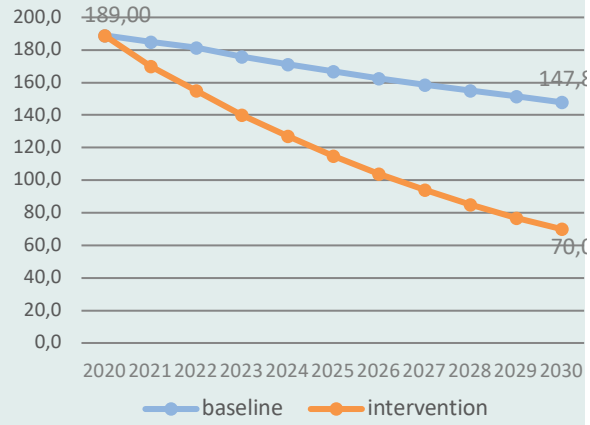
1. Target Achievements for Goal 3

Target achievements for maternal health

Three indicators being measured to assess progress in maternal health development are 1) maternal mortality ratio (AKI/*angka kematian ibu*) per 100,000 live births, 2) the proportion of ever-married women aged 15-49 years whose last birth process is (a) attended by skilled health workers and 3) the proportion of ever-married women aged 15-49 years whose last birth process was at healthcare facilities. All projection results showed that by 2030, these three indicators will improve compared to current conditions, with the intervention projections demonstrating that interventions will significantly contribute to accelerated achievements for these indicators. At the global level, the target to be achieved is set at a maternal mortality ratio of 70 per 100,000 live births by 2030.

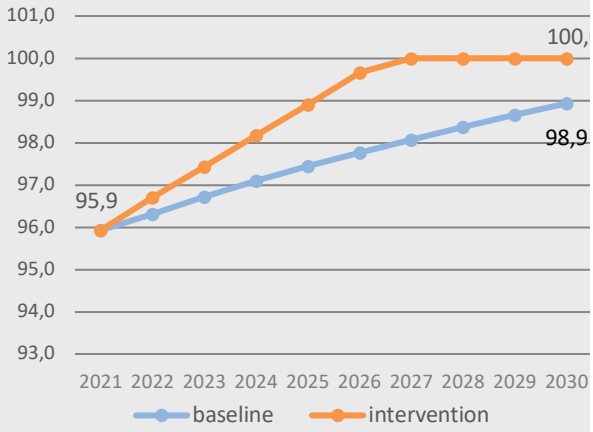
In the baseline scenario, by 2030, maternal mortality ratio is projected to decrease to 148 per 100,000 live births, while the coverage of women of reproductive age who gave birth with the help of skilled health personnel or in healthcare facilities is 98.9% and 98.2%, respectively.

Figure 2.9 Indicator 3.1.1* Maternal Mortality Ratio (Per 100,000 Live Births)



Note: Baseline projection uses the MethodX model and intervention projection uses SDGs projection (Annual Reduction Rate/ARR 9.5%)

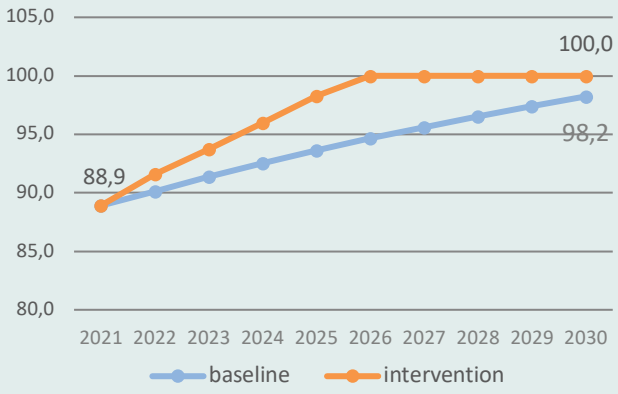
Figure 2.10 Indicator 3.1.2* Proportion of ever-married women 15–49 years whose last birth process is (a) attended by skilled health workers (%)



Note: Baseline projection uses the MethodX model and intervention projection uses exponential model.

The intervention scenario also projected improvements to all three indicators with a much better trend than the baseline scenario. The maternal mortality ratio is projected to reach 155 per 100,000 live births in 2022 and trend down linearly until it reaches 70 per 100,000 live births by 2030. Meanwhile, coverage of childbirth by health personnel and in healthcare facilities is projected to improve exponentially faster compared to the baseline scenario, with 100% of women of reproductive age projected to give birth with the help of skilled health personnel by 2027 or in healthcare facilities by 2026, about 5–6 years faster to reach 100% coverage compared to the baseline scenario.

Figure 2.11 Indicator 3.1.2* Proportion of ever-married women 15–49 years of age whose latest birth process is (b) carried out in a healthcare facility (%)



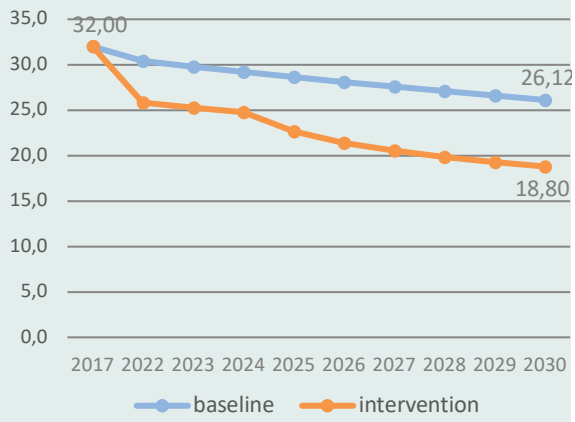
Note: Baseline projection uses the logarithm model and intervention projection refers to the exponential model.

Target achievements for child health

Under-five mortality rate per 1,000 live births, infant mortality rate (age <1 year) per 1,000 live births, and neonatal mortality rate (age 0–28 days) per 1,000 live births are three

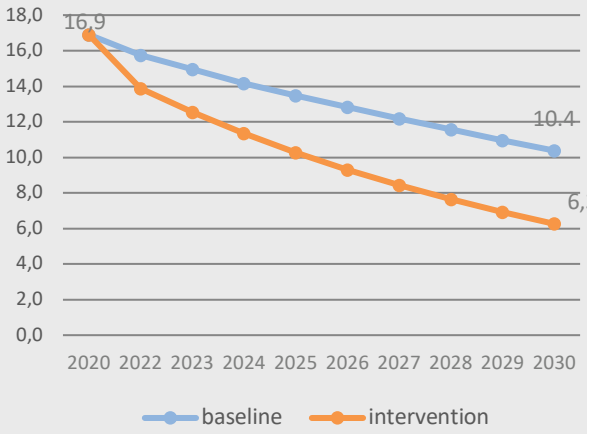
indicators being projected to assess SDG's achievements in child health in Indonesia. At the global level, the target set for 2030 is reducing under-five mortality rate to <25 per 1,000 live births and reducing neonatal mortality rate to <12 per 1,000 live births. The baseline scenario projected that these three indicators will decrease more or less linearly in the 2022–2030 period, and of the two indicators with global targets, neonatal mortality rate is estimated to reach the global target in 2022 (9 per 1,000 live births) and continuing downward to 7.6 per 1,000 live births by 2030. In contrast, the baseline scenario for under-five mortality rate is projected not to reach SDG target by 2030 (26.12 per 1,000 live births). Infant mortality rate is projected to decrease to 10.38 per 1,000 live births by 2030.

Figure 2.12 Indicator 3.2.1* (a) Under-five mortality rate per 1,000 live births



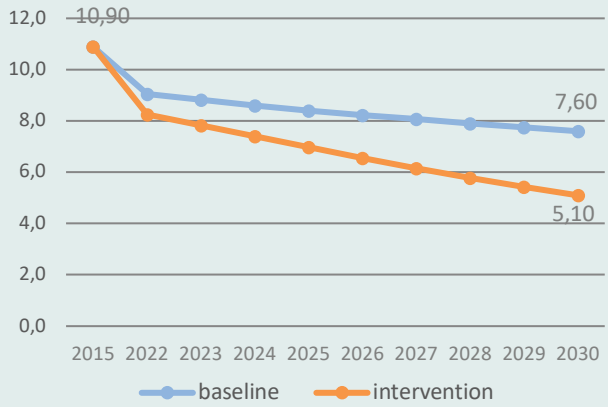
Note: Baseline projection uses the MethodX model and intervention projection refers to the logarithm model. Actual data sourced from Indonesia Demographics and Health Survey.

Figure 2.13 Indicator 3.2.1* (b) Infant mortality rate per 1,000 live births



Note: Baseline projection uses the MethodX model and intervention projection uses SDGs projection (Annual Reduction Rate/ARR 9.5%)

Figure 2.14 Indicator 3.2.2* Neonatal mortality rate per 1,000 live births



Note: Baseline and intervention projections sourced from the Indonesia Economic Transformation Team, Bappenas

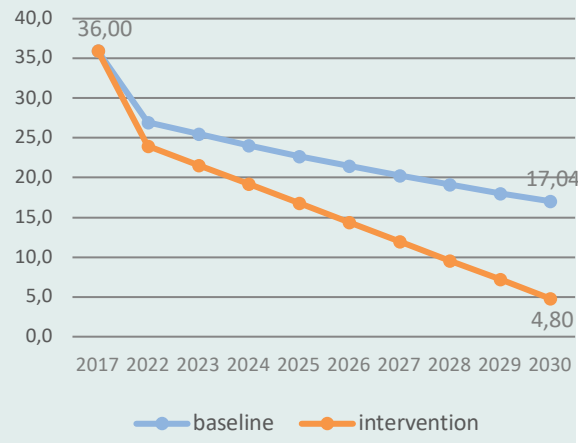
In the intervention scenario, under-five mortality rate is projected to drop logarithmically. Under the projection, the under-five mortality rate will drop to 18.8 per 1,000

live births by 2030 with the SDG target projected to be achieved in 2024 (24.8 per 1,000 live births), a significant drop compared to the baseline scenario. On the other hand, infant mortality rate and neonatal mortality rate is projected to drop with a slightly lower intercept in 2022 and a slightly steeper slope compared to the baseline scenario, reaching 6.26 infant mortality rate and 5.1 neonatal mortality rate per 1,000 live births by 2030.

Target achievements for reproductive health

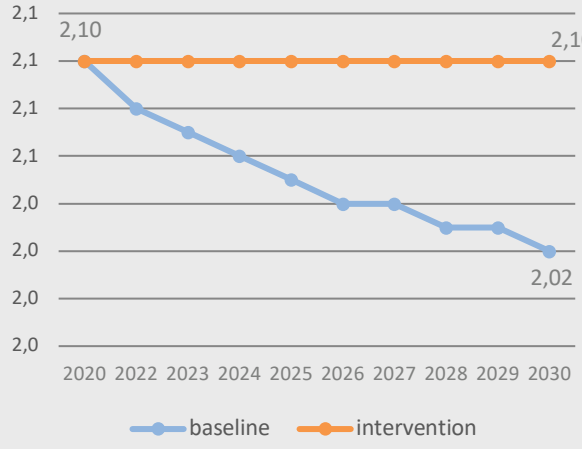
Adolescent birth rate (aged 15–19 years) per 1,000 population in that age group, age-specific fertility rate and total fertility rate, are two indicators being projected to assess health development in reproductive health. The target for 2030, which has become a global aspiration, is achieving universal access to reproductive healthcare services. The adolescent birth rate (aged 15–19 years) is projected to drop both in baseline and intervention scenarios, with a significant difference in birth rate between the scenarios by 2030 (17 vs 4.8 per 1,000 population). A decline in the age-specific fertility ratio among young women aged 15–19 years has been observed historically, which is very likely related to increasing levels of education, economic status, and women's empowerment in Indonesia, and there is a strong possibility for the trend to continue until 2030. Furthermore, the total fertility rate is also projected to decline in the baseline scenario to 2.02 children per woman of reproductive age in Indonesia, compared to 2.1 children per woman in the intervention scenario. It should be noted that a total fertility rate of 2.1 children per woman is more or less similar to the replacement fertility rate for Indonesian women or, in other words, at that level, the Indonesian population will be in a stationary condition (not increasing or decreasing and not experiencing age composition changes due to births or deaths). As a consequence, a total fertility rate that is below the replacement fertility rate will lead to long-term impacts in the form of a faster aging population, along with all of its consequences.

Figure 2.15 Indicator 3.7.2* Adolescent birth rate (aged 15–19 years) per 1,000 women in that age group



Note: Baseline projection uses the exponential model and intervention projection refers to the linear model.

Figure 2.16 Indicator 3.7.2.(a) Total Fertility Rate (Per 1,000 population)



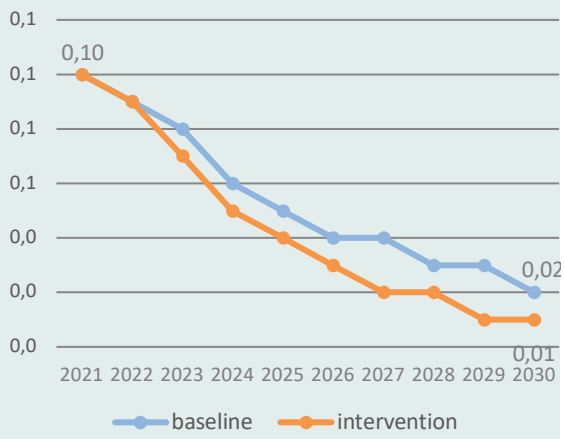
Note: Baseline and intervention projections sourced from the Indonesia Economic Transformation Team, Bappenas

Target achievements for communicable diseases

Three indicators being projected to assess success in tackling communicable diseases in Indonesia are 1) incidence of new HIV infections per 1,000 uninfected population, 2) incidence of tuberculosis per 100,000 population, and 3) incidence of malaria per 1,000 population. For these three indicators, the targets to be achieved at the global level by 2030 are declining HIV incidence to 0.025 per 1,000 uninfected population, declining malaria incidence by at least 90% compared to 2015, and declining TB incidence by at least 80% compared to 2015. At the national

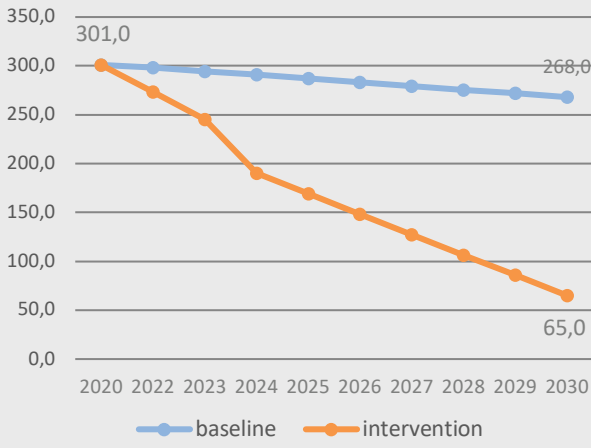
level, Indonesia also has specific targets for the three indicators by 2030, namely: 1) elimination of HIV (zero new HIV infections) 2) TB incidence of 65/100,000 population, and 3) elimination of malaria (malaria incidence of less than 1 per 1,000 population; measured in annual parasite index). These three indicators are projected to decline in the projection period, both in the baseline and intervention scenarios. By 2030, according to the baseline scenario, HIV incidence is projected to decrease by 80% compared to the incidence in 2021 (0.02 per 1,000 uninfected population), TB incidence to decline linearly to 268 per 100,000 population, and malaria incidence becomes 0.8 per 1,000 population. In other words, under baseline assumptions, malaria is projected to be eliminated by 2030, HIV may not yet be eliminated, but the global target has been reached, while TB elimination remains far from being achieved. Thus, projections in the intervention scenario to achieve HIV and malaria indicators are not much different from baseline projections, with an absolute difference of 0.01 per 1,000 for HIV incidence and 0.76 per 1,000 for malaria incidence. In contrast, the intervention scenario projected the TB control target to be achieved by 2030, with an incidence of 65 per 100,000 population, or 75% lower than TB incidence by 2030 in the baseline projection.

Figure 2.17 Indicator 3.3.1* Number of new HIV infections per 1,000 uninfected population



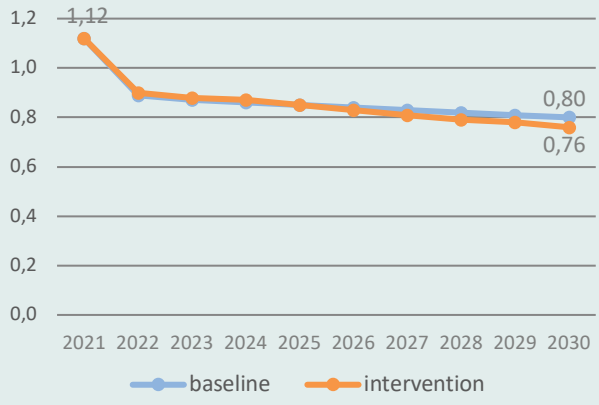
Note: Baseline projection uses the power model and intervention projection refers to the exponential model.

Figure 2.18 Indicator 3.3.2* Tuberculosis incidence per 100,000 population



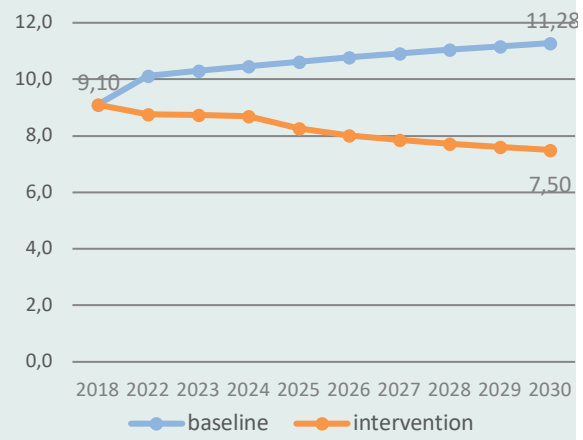
Note: Baseline projection uses the linear model and intervention projection refers to the linear model.

Figure 2.19 Indicator 3.3.3* Malaria incidence per 1,000 population



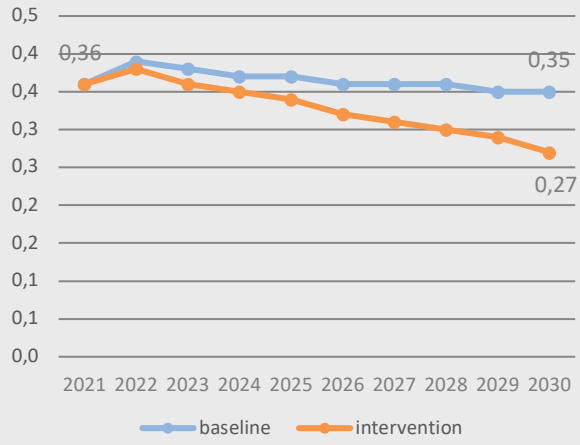
Note: Baseline projection uses the logarithm model and intervention projection refers to the linear model.

Figure 2.20 Indicator 3.4.1.(a) Percentage of smoking in the 10–18 years age group (%)



Note: Baseline projection uses the logarithm model and intervention projection refers to the logarithm model.

Figure 2.21 Indicator 3.5.2* Alcohol consumption (liter per capita) by the population aged 15 years and older within the last year



Note: Baseline projection uses the power model and intervention projection refers to the linear model.

Target achievements for non-communicable diseases

At the global level, the target expected to be achieved by 2030 is to reduce deaths from non-communicable causes to a third of the death rate in 2015, including deaths from cardiovascular disease, cancer, diabetes, and chronic respiratory tract disease. Smoking is one of the major risk factors for cardiovascular disease, cancer, and chronic lung disease; with smoking prevalence among adult men in Indonesia at almost 65%, it is an important risk factor to be controlled to reduce deaths from these diseases. Young smokers are an important target population for intervention to reduce total smoking prevalence in Indonesia and is an indicator projected in this SDG roadmap.

The projection showed a divergence between baseline and intervention scenarios, with an increase of smoking prevalence among the 10–18 years age group by 2.2% in the baseline scenario, compared to a decline of 1.6% in the intervention scenario. Even though a decline in smoking prevalence among younger people is a desirable achievement, a 2.2% reduction may not lead to significant impacts against deaths from non-communicable diseases because, in the short term, young smokers only have minimal contribution to deaths attributable to smoking. Special care should be taken when monitoring the indicator since there are some discrepancies in the operational definition of “smoking” in various existing national surveys.

Target achievements for substance abuse

Alcohol consumption per capita by the population aged 15 years and older is an indicator projected to measure success in achieving substance abuse prevention and treatment. In this regard, the baseline and intervention scenarios projected declining consumption per capita, respectively 0.01 liter per capita (baseline) and 0.09 liter per capita (intervention). Although the absolute decline projected in the intervention scenario is very small, it amounts to 25% of the consumption per capita at the beginning of the projection, which is a very significant relative decline.

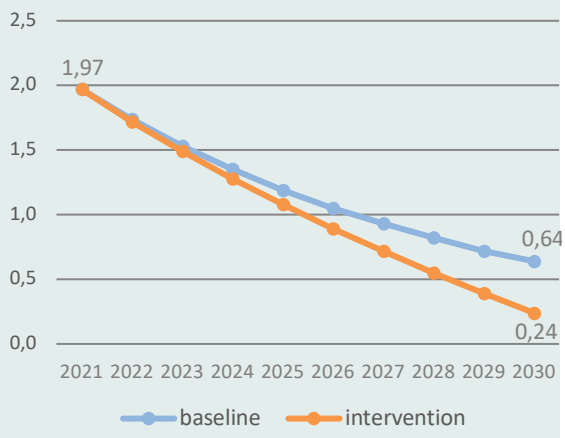
Target achievements for universal health coverage

The coverage of National Health Insurance (JKN) is an important indicator to support the achievement of universal health coverage. The success of the JKN program should also be

reflected in the declining number of the population who experienced catastrophic health expenditure (CHE), calculated as the proportion of total household expenditure. These three indicators, 1) the proportion of the population with large household expenditures on health as a share of total household expenditure or income: Proportion on health expenditures > 10% of household expenditure, 2) the proportion of the population with large household expenditures on health as a share of total household expenditure or income: Proportion on health expenditure > 25% of household expenditure, and 3) coverage of National Health Insurance (JKN), are indicators projected towards 2030.

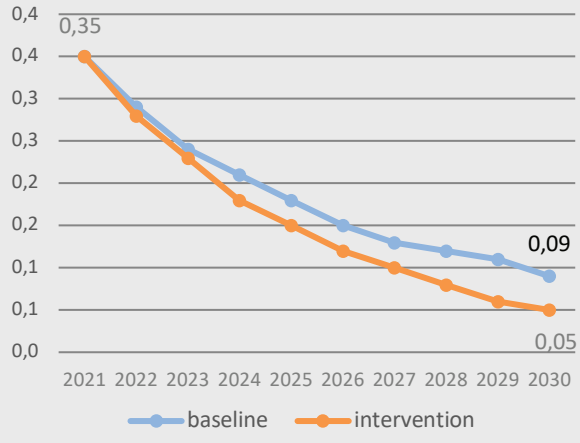
Coverage of JKN as projected in the baseline scenario does not differ much from the intervention scenario (+0.05%) by 2030. On the other hand, the proportion of the population experiencing CHE is projected to drop significantly, even in the baseline scenario. For instance, the proportion of the population large household expenditures on health as a share of total household expenditure or income: Proportion on health expenditures > 10% of household expenditure dropped from about 1.97% at the beginning of the projection to 0.64% in the baseline scenario (a 67% drop) and to 0.24% in the intervention scenario (an 87% drop). Similarly, the proportion of the population with large household expenditures on health as a share of total household expenditure or income: Proportion on health expenditures > 25% of household expenditure dropped from about 0.35% at the beginning of the projection to 0.09% in the baseline scenario (a 74% drop) and to 0.05% in the intervention scenario (an 86% drop). Although the projected decline in the proportion of the population experiencing CHE seems to be much more optimistic than the projected increase in the coverage of JKN, this is still possible as JKN utilization increases, especially for diseases that increase CHE risk, including cancer and cardiovascular disease.

Figure 2.22 Indicator 3.8.2* Proportion of population with large household expenditures on health as a share of total household expenditure or income: Proportion of health expenditures > 10%



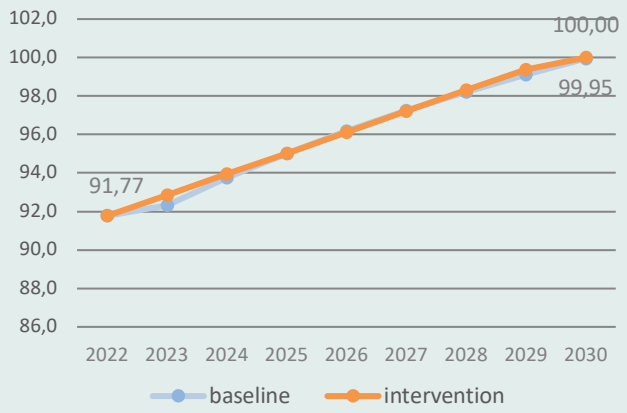
Note: Baseline projection uses the exponential model and intervention projection refers to the logarithm model.

Figure 2.23 Indicator 3.8.2* Proportion of population with large household expenditures on health as a share of total household expenditure or income: Proportion of health expenditures > 25%



Note: Baseline projection uses the power model and intervention projection refers to the exponential model.

Figure 2.24 Indicator 3.8.2.(a) Coverage of National Health Insurance (JKN) (%)



Note: Baseline projection and intervention projection follow the resulting pattern/trajectory from an exercise by the Indonesia Economic Transformation Team.

2. Achievement Strategies for Goal 3

Maternal and child health, and reproductive health

The government has set targets to reduce maternal mortality and child mortality, as well as increase access to reproductive healthcare in the RPJMN. Despite the impact of the COVID-19 pandemic, the government, particularly the Ministry of Health, has taken concrete policies to pursue targets in maternal and child health, and reproductive health. One of the policy changes which may potentially have a positive impact towards health development, and not limited to these three aspects – maternal and child health, and reproductive health, is the health transformation agenda outlined in the amendment to Presidential Regulation No. 18 of 2020 (RPJMN) on System for Child Health, Family Planning, and Reproductive Health and the 2020–2024 strategic plan of the Ministry of Health (Regulation of the Minister of Health No. 13 of 2022) which sets a more concrete policy direction to achieve health development targets.

Some of the policy directions for health transformation which may potentially have a direct impact on maternal and child health, and reproductive health, are the agenda to transform primary care, referrals, and to fulfill human resources requirements. Seven key intervention strategies for maternal and child health are:

1. Fulfill the type, redistribution, and quality improvement for Health Human Resources
2. Strengthen emergency services and referral systems
3. Improve quality and strengthen service models in accordance with subnational needs and in line with the life cycle
4. Strengthen service standards for high-risk mother and child
5. Strengthen governance and leadership at subnational governments and healthcare facilities to improve the quality of services and policies in the regions
6. Strengthen individual information systems and facility-based mortality data
7. Synchronize financing and develop innovative financing

The Ministry of Health has also committed to equip all community health facility centers (puskesmas/*pusat kesehatan masyarakat*) with ultrasound examination facilities recommended by the WHO to be carried out before 24 weeks of pregnancy, which may contribute to reducing maternal and child mortality, particularly neonatal mortality. A more

balanced distribution of health workers and strengthening the referral system through a targeted maternal and child health (KIA/*kesehatan ibu dan anak*) financing scheme, also have tremendous potential to improve maternal and child health and reproductive health.

Sampling of the 2018 registration system indicated that more than 75% of maternal mortality occurred during childbirth and more than 60% of these deaths occurred at the hospital. Thus, strengthening early screenings for pregnant women with complications, improving antenatal care (ANC) through supporting facilities and infrastructure (for example: ultrasound and medical lab), the availability of competent doctors, and a mechanism for a referral system, may potentially lower maternal mortality. Furthermore, social factors in the referral mechanism should be strengthened in connection with financing for childbirth (for example: JKN) as some social challenges such as costs due to referral (transportation), decision-making by the family, and community preference for deliveries by untrained attendants, may continue to hamper efforts in reducing maternal mortality.

For reproductive health, especially to achieve the indicator on adolescent birth rate (aged 15–19 years), a positive policy boost was provided through the enactment of Law No. 16 of 2019 on marriage as it stipulated the minimum age for marriage at 19 years for both men and women, with recommendations for pregnancy in the safe age range (20–30 years). To support policies related to child health, the Ministry of Health in mid-2022 added two new antigens to the routine immunization schedule for children: rotavirus and pneumococcus, respectively the cause of diarrhea and pneumonia, two leading causes of infant and under-five mortality in Indonesia.

Efforts to reduce child mortality received a boost from the national immunization program. The addition of rotavirus and pneumococcus vaccines is expected to reduce child mortality even further. The addition of more antigen types into the program needs to be accompanied by education efforts to increase acceptance for raising the frequency of vaccination to children.

On the other hand, efforts to protect children from non-lethal conditions, especially nutritional issues, should be strengthened. Access to reproductive healthcare in Indonesia has demonstrated good achievements, with a declining number of adolescent birth rate, even as TFR seems to have stagnated at 2.2 level, despite going down year after year. Thus, the strategy to meet contraception demand, and perhaps to raise contraception demand, should still be strengthened to ensure that TFR can decline to replacement level.

Efforts to reduce maternal, infant, and under-five mortality need to have leverage and be measured through effective coverage, equitable, and high-quality Maternal and Child Health as outlined in the 2025–2029 Maternal and Child Health Policy

1. Increase effective coverage and the quality of maternal and child healthcare services, as well as referral system at primary and referral healthcare facilities
2. Increase access to universal maternal and child healthcare at every life cycle, including for adolescents

Attention should also be given to meet reproductive health demands, specifically unmet need for contraception services, as unmet need remains high, a situation associated with maternal mortality. Campaigns for the family planning program may still be needed to increase public awareness, along with more specific targeting of vulnerable groups with unmet needs, such as mothers with low socio-economic status, mothers with more than two children, and young mothers.

Communicable diseases

Control of communicable diseases, especially HIV/AIDS, tuberculosis, and malaria, is already a priority for the government. Specifically for HIV/AIDS and malaria, the expected target is eradication and this is outlined in control planning documents for both diseases.

In the effort to control HIV/AIDS, the government of Indonesia adopted the 95-95-95 fast track strategy (95% of people living with HIV/AIDS (PLWHA) know their status, 95% of PLWHA who know their status receive treatment, and 95% of PLWHA who are treated achieve virus suppression) to achieve three zeros by 2030 (no new HIV infections, no deaths from HIV/AIDS, and no stigma and discrimination against PLWHA). As an intermediate step, the 90-90-90 is the target achievement in HIV/AIDS control in the 2020–2024 National Strategic Action Plan. Thus, the 2020–2024 National Action Plan to prevent and control HIV/AIDS adopted a strategy of strengthening commitment and collaboration across sectors/agencies, providing comprehensive HIV/AIDS services at primary/referral services, supported by strengthening surveillance and information systems. Still, by the end of 2022, achievements by the HIV/AIDS prevention and control program remained far from the targets, which are 79/95 – 41/95 – 16/95.

Efforts to manage tuberculosis are strengthened with the issuance of Presidential Regulation No. 67 of 2021, which also stipulates achievement targets and comprehensive tuberculosis containment strategies, including assigning responsibilities for achievements among ministries. The Ministry of Health has also begun to carry out an active case finding approach in eight provinces, with the target of screening more than 1 million people who have had close contact with tuberculosis, along with increased efforts to provide tuberculosis prevention treatments. In addition, case management and case reporting by private healthcare facilities are also strategies that receive special attention. Furthermore, as part of the management efforts against drug resistant tuberculosis, the Ministry of Health has positioned molecular rapid test as the main diagnostic modality, the use of which has enabled detection of resistance against rifampicin, one of the drugs in tuberculosis treatment regimens. To ensure treatment success against drug resistant tuberculosis, the government has also adopted a strategy of short-term treatment without injections.

Similarly with malaria control, a comprehensive approach, beginning from strengthening diagnostics, using combination treatment based on artemisinin, as well as strengthening public-private mix, has been adopted in government policies, supported by strengthening the malaria information system. Prioritization was also carried out by stipulating five intervention areas, which are 1) Java and Bali, 2) Sumatra, Sulawesi, and West Nusa Tenggara, 3) Kalimantan and North Maluku, 4) Maluku and East Nusa Tenggara, and 5) Papua and West Papua, with region one being the closest to eradication and region five with the highest incidence of malaria.

Even though communicable disease management strategies in Indonesia have adopted strategies recommended at the global level, challenges at the local level still need to be tackled with contextual and evidence-based strategies and policies. For example, HIV/AIDS and tuberculosis eradication efforts continue to face challenges with stigmatization, which prevented people from accessing the required services and ultimately, prevented case-finding efforts. To control malaria, especially in highly endemic areas, difficulties in controlling vectors in their natural habitat will continue to be a challenge in achieving the eradication target. Even more than that, the emergence and spread of pathogens that are resistant to drugs also need attention. Aside from priority communicable diseases, Indonesia still needs to watch out for other communicable diseases, including diseases that are preventable by immunization, neglected diseases, and emerging and re-emerging diseases.

To achieve tuberculosis, HIV, and malaria eradication, active case finding and prevention efforts still require special attention. Access to accurate diagnostic tools still needs

improvements. Tuberculosis case detections, for instance, the distribution of laboratories that can investigate molecular rapid tests and logistics of the investigation tools are still frequently reported as constraints in using the investigation method that has now become the first diagnostic choice in tuberculosis management programs. Coverage of prevention treatment must also be increased to contribute to the eradication of these diseases. Development and adoption of vaccines for these three diseases should be a part of the national strategy, as long as these vaccines can improve program effectiveness.

The COVID-19 pandemic has provided lessons about the importance of strengthening surveillance systems. Syndromic surveillance systems and sentinel healthcare facilities need to be properly empowered, using laboratory networks that have been strengthened during the pandemic. This includes the use of molecular and genomic investigation modalities to identify pathogens that can potentially cause extraordinary events, including familiar pathogens, such as tuberculosis, which have become resistant to standard medicines.

Non-communicable diseases

Non-communicable diseases have also become a priority in the Ministry of Health's policies, especially diseases that contributed the highest burden, such as hypertension, obesity, diabetes, stroke, coronary heart disease, breast cancer, cervical cancer, and chronic obstructive pulmonary disease. Management programs for non-communicable diseases are outlined in a Regulation of the Minister of Health No. 71 of 2015 and according to the 2020–2024 Ministry of Health's strategic plan, will be strengthened with a presidential regulation. Government policies in prevention and control of non-communicable diseases are focused on early detection of priority non-communicable diseases, especially in community health centers (puskesmas/*pusat kesehatan masyarakat*). Among government priorities in preventing non-communicable diseases are efforts to lower smoking prevalence in Indonesia, particularly in the adolescent age group (10–18 years), with a target for absolute reduction of 0.4% in the 2020–2024 period. The government also took the initiative to lower the number of smokers by reducing the value amount of conditional cash transfers (PKH) for families with smoker(s). Thus, the Ministry of Health is targeting to have more districts/cities stipulating No-Smoking Areas and providing Quit Smoking services. Furthermore, the government also decided to raise tobacco excise by 10% in 2023 and 2024.

The government has demonstrated its strengthened commitment to manage non-communicable diseases, particularly by increasing efforts to screen for priority non-communicable diseases. Still, the strategies already implemented need to be strengthened to expand screening coverage. Furthermore, the relatively slow disease progression, with long periods of no symptoms, and the required lifelong or high-cost treatments create challenges in increasing public participation for early detection and handling of these conditions.

Government policies in controlling risk factors of non-communicable diseases, especially smoking, still need to be strengthened as well. Regardless of policies that restrict access to cigarettes, regulatory enforcement remains weak, including enforcement of No-Smoking Area in regions that have issued subnational regulation stipulating such areas. Public education efforts on the dangers of smoking remain fairly limited compared to the promotion of tobacco products. Furthermore, Indonesia has yet to ratify the Framework Convention on Tobacco Control (FCTC) and actively push to restrict smoking advertising.

To increase early detection of non-communicable diseases, public participation still needs to be bolstered. This can be done by increasing access and financing for early detection efforts of various non-communicable diseases, specifically those with catastrophic impacts, such as heart disease, diabetes, and cancer. Reducing exposure to risk factors is a prevention strategy that still needs to be strengthened. Traditional approaches, such as standardized counseling and education, need rethinking to be more effective, for example by using social media or

'targeted ads' that utilize big data from various sources. Behavior changes through policies that enable nudging should receive more attention. On the other hand, drugs for these conditions, which are often costly, need to be covered by health insurance, but supported by proper health technology assessment and economic evaluation to ensure that the covered drugs are cost-effective and the equitable aspect is not neglected.

Substance abuse

Management of substance abuse issues is a multi-sector policy, especially under the Ministry of Health and Ministry of Social Affairs to provide medical and social rehabilitation for victims of substance abuse (demand side). Meanwhile, control on the supply side is carried out through various oversights and restrictions on the sale of substances that have the potential for abuse. Alcoholic beverages are specifically regulated at all levels, from legislations at the national level down to subnational regulations. The President of the Republic of Indonesia has also revoked provisions in the Appendix of Presidential Regulation No. 10 of 2021 which allowed new investments for liquors in several regions in Indonesia.

Illegal distribution and abuse of narcotic, psychotropic, and addictive substances (NAPZA) will remain a challenge in the control of substance abuse in Indonesia. Furthermore, the stigma and high incidence of relapse added to the challenges in rehabilitating victims of narcotic, psychotropic, and addictive substances (NAPZA) abuse, including alcohol consumption and abuse. The difficulty in carrying out rehabilitations includes uncertainty when determining the boundaries on who should be categorized as victims or as perpetrators.

Universal health coverage

To increase coverage of National Health Insurance (JKN), the President of the Republic of Indonesia has issued Presidential Instruction No. 1 of 2022. Among others, the presidential instruction stipulated JKN membership as a public administration requirement in 23 ministries and 7 state institutions (for example: applying for a driver's license). The presidential instruction also mandated subnational governments to bring about universal health coverage in their regions by providing adequate budget and integrating health insurance in the regions with the JKN. Furthermore, the Ministry of Health also planned activities to support service quality improvements in the JKN, such as tariff reviews, utilization, application of health technology assessment in the JKN. In this regard, the Ministry of Health has issued Regulation of the Minister of Health No. 3 of 2023 stipulating increased tariffs of healthcare services provided in the JKN program. Specifically to monitor catastrophic health expenditure, the Ministry of Health has produced a National Health Account that traced the sources and amounts of health financing in Indonesia, including out-of-pocket (OOP) expenses. The Ministry of Health is targeting a decline in OOP proportion to 20% of total health expenditure in 2023 from previously 27% in 2022.

The government has taken some good policies to achieve universal health coverage, as shown by increasing JKN membership coverage year after year, nearing 90% in 2022. However, even as the JKN has increased access to healthcare services with over 1 million use each day, service quality improvements, as well as provision of preventive and promotive healthcare services, are still needed, including periodically adjusting tariffs and covering cost-effective services. On the other hand, JKN financing still needs to be strengthened by periodically adjusting the amount of contributions and ensuring that health financing from subnational budgets can meet requirements. As of now, the Administrative Agency for JKN is still experiencing a deficit, a challenge in ensuring the sustainability of JKN.

Service quality improvements in JKN implementation should be prioritized so the increased access can be translated into better health status. Therefore, the performance assessment system for healthcare facilities receiving capitation payment and the credentialing

of facilities working with the Administrative Agency for JKN needs to be continually improved. Of course, this must also happen along with equitable payment tariffs. On the other hand, JKN financing requirements will continue to rise, thus funding identification and allocation, by reducing OOP expenditures, should still be improved. Furthermore, the logistics of drug provision require attention. The policy for universal health coverage should also cover the elderly by, among others, providing drugs.

D. Goal 4 Quality Education

Goal 4 of SDGs is to Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All with the following targets:

- Target 4.1: By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.
- Target 4.2: By 2030, ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education.
- Target 4.3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and higher education, including university.
- Target 4.4: By 2030, substantially increase the number of the youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- Target 4.5: By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.
- Target 4.6: By 2030, ensure that all adolescents and a substantial proportion of adults, both men and women, achieve literacy and numeracy.
- Target 4.7: By 2030, ensure that all students acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.
- Target 4.a: Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environment for all.
- Target 4.b: By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing states and African countries, for enrollment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programs, in developed countries and other developing countries.
- Target 4.c: By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing states.

Indicators to be projected are as follows:

a) 4.1.1.(a) Proportion of children and young people in grade 5 and grade 8 achieving at least a minimum proficiency level in: (i) reading and (ii) mathematics
b) 4.1.2* Completion rate of primary education (SD)/similar level, lower secondary education (SMP)/similar level, upper secondary education (SMA)/similar level
c) 4.2.2* Level of participation in organized learning (one year before primary education age)

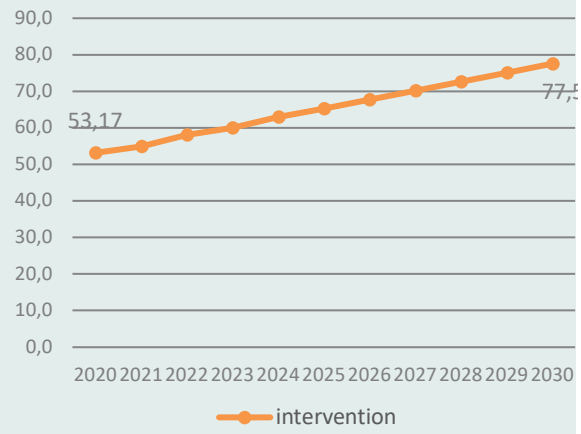
d) 4.5.1. Gross Enrollment Ratio (APK/*Angka Partisipasi Kasar*) in (i) lower secondary education (SMP)/similar level, (ii) upper secondary (SMA)/vocational education (SMK)/similar level, and (iii) higher education (a) bottom/top quintile

e) 4.c.1. Percentage of teachers meeting qualifications in line with national standards by level and type of education: (2) Percentage of teachers certified as educators

1. Target Achievements for Goal 4

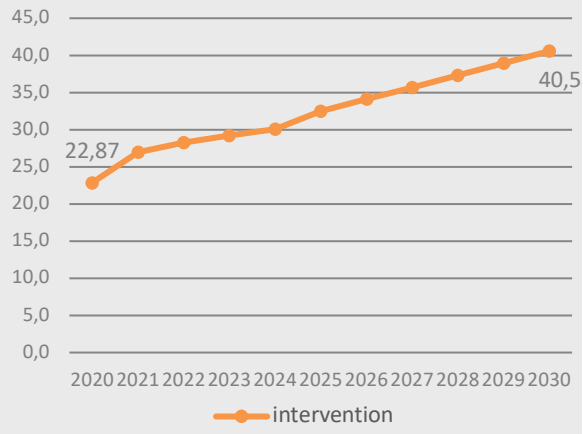
Equitable education opportunity covers two interrelated aspects, the opportunity for each citizen to access education service and the opportunity for them to develop their competencies. Thus, to achieve SDG Goal 4, efforts to improve education access need to go hand-in-hand with efforts to improve learning quality in an equitable manner. With equitable opportunities, men and women, in cities and in rural areas, with or without disabilities, and from any socio-economic status, can develop the required competencies for their future through the education they took. Indonesia needs to keep improving the quality of education service so that more young people have good literacy and numeracy, especially because these abilities are the foundation for lifelong learning.

Figure 2.25 Indicator 4.1.1.(a) Proportion of children and young people in grade 5 achieving at least a minimum proficiency level in: (i) reading



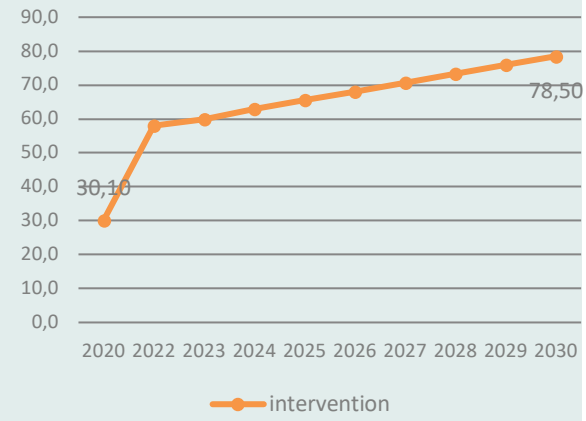
Note: 2021–2024 projection refers to the targets of SDGs National Action Plan, the 2025–2030 projection continues the trend

Figure 2.26 Indicator 4.1.1.(a) Proportion of children and young people in grade 5 achieving at least a minimum proficiency level in: (ii) mathematics



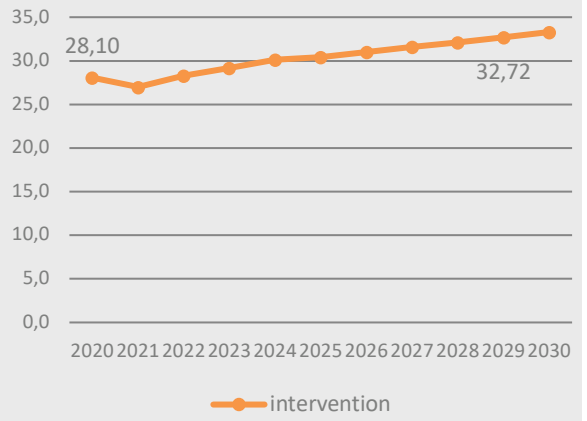
Note: 2021–2024 projection refers to the targets of SDGs National Action Plan, the 2025–2030 projection continues the trend

Figure 2.27 Indicator 4.1.1.(a) Proportion of children and young people in grade 8 achieving at least a minimum proficiency level in: (i) reading



Note: 2021–2024 projection refers to the targets of SDGs National Action Plan, the 2025–2030 projection continues the trend.

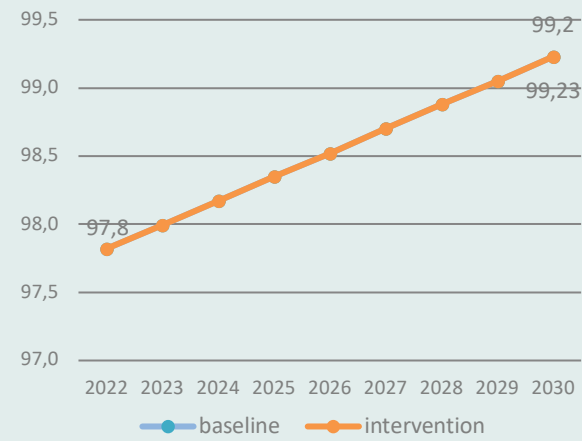
Figure 2.28 Indicator 4.1.1.(a) Proportion of children and young people in grade 8 achieving at least a minimum proficiency level in: (ii) mathematics



Note: 2021–2024 projection refers to the targets of SDGs National Action Plan, the 2025–2030 projection continues the trend

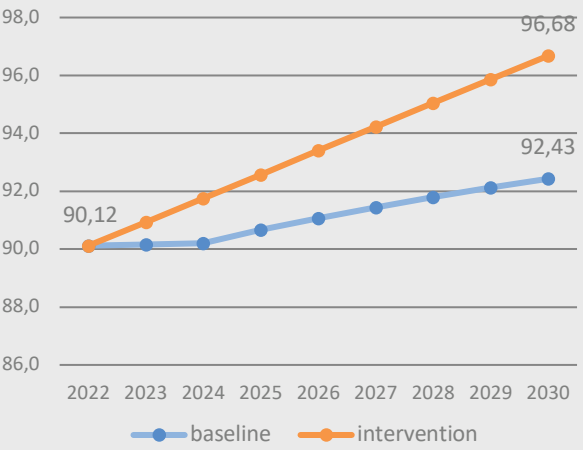
However, by 2030, the projected increase in literacy and numeracy still have not reached 100%. In 2030, it is estimated that 77.58% of grade 5 children will reach the minimum proficiency in reading (the figure is 78.5% for grade 8). Meanwhile, the proportion of children and young people reaching the minimum proficiency in mathematics is far lower, with only 40.58% (and 33.3% for grade 8) projected to reach the minimum standards by 2030 (indicator 4.1.1).

Figure 2.29 Indicator 4.1.2* Completion rate of primary education (SD)/similar level (%)



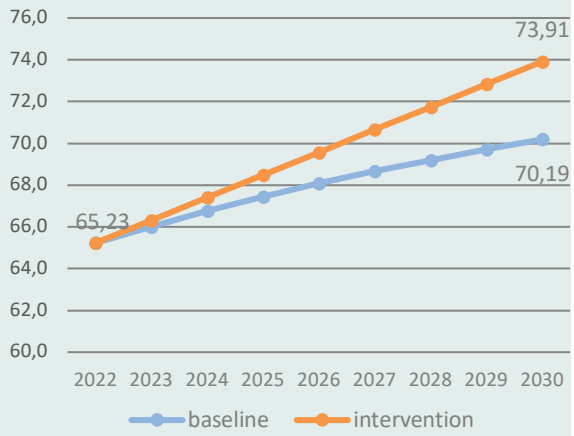
Note: Baseline and intervention projections sourced from projections by the Directorate of Religion, Education, and Culture, Bappenas.

Figure 2.30 Indicator 4.1.2* Completion rate of lower secondary education (SMP)/similar level (%)



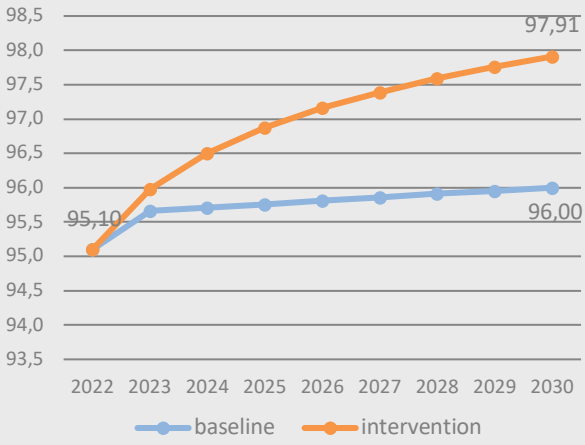
Note: Baseline and intervention projections sourced from the Indonesia Economic Transformation Team, Bappenas.

Figure 2.31 Indicator 4.1.2* Completion rate of upper secondary education (SMA)/similar level (%)



Note: Baseline and intervention projections sourced from the Indonesia Economic Transformation Team, Bappenas.

Figure 2.32 Indicator 4.2.2* Level of participation in organized learning (one year before primary education age), by sex (%)



Note: Baseline and intervention projections sourced from projections by the Directorate of Religion, Education, and Culture, Bappenas.

Education opportunity is also influenced by the quality of the learning experienced by students, and thus, the most important factor in learning is the teachers. Teacher's quality still needs to be continually increased to be more consistent across Indonesia. Based on current condition and applicable policies, the percentage of teachers certified as educators (indicator 4.c.1) is expected to reach 94.55% by 2030. This means that by 2030, some Indonesian children may not yet have the opportunity to learn from teachers with nationally-recognized competencies. There is even a risk that the figure may decline due to retiring teachers, estimated at around 70,000 per year. Therefore, the Teacher Professional Education (PPG/*Pendidikan Profesi Guru*) program should be improved as well as interventions that can provide more options for teachers to be certified.

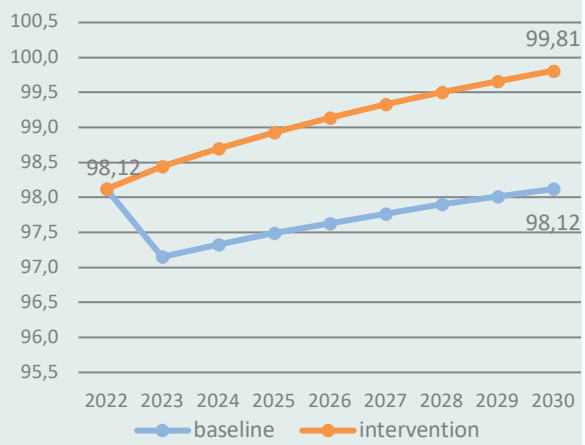
Education service that matches and responds to the learning needs of each student can reduce the number of drop outs and failing grades. For some countries including Indonesia, the COVID-19 pandemic has really impacted education opportunity, as shown by, among others, completion rate of all levels of education (indicator 4.1.2) and level of young children's participation in early childhood education or organized learning at least one year before they enroll in primary education (indicator 4.2.2). Despite having to carry out learning activities remotely during the COVID-19 pandemic, the condition did not cause immediate drops in the completion rate of primary education/similar level, lower secondary education/similar level, or upper secondary education/similar level.

Interventions conducted after the COVID-19 pandemic is expected to increase the completion rate of lower secondary education/similar level and upper secondary education/similar level to respectively, 96.7% and 73.9%. The target can be achieved, especially with the help of several enabling policies.

Many countries are increasingly strengthening their policy on preschool learning for at least one year, and Indonesia is also compelled to increase the quality and relevance of early childhood education, especially for those aged between 5 and 6 years (usually kindergarten (TK)/Islamic kindergarten (RA)/similar type of education). The hope is that preschool education will strengthen the foundation for literacy and numeracy, as well as ensure a child's readiness into formal education. With the upcoming 13 years

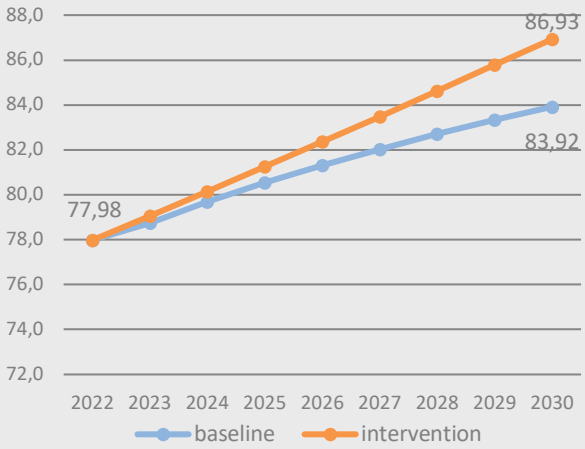
Compulsory Education, consisting of 1 year of preschool and 12 years of primary and secondary education, and interventions to expand early childhood education service, as well as strengthen early childhood education quality and organization, it is projected that by 2030, 97.9% of Indonesia children will have attended at least 1 year of preschool education before entering primary education.

Figure 2.33 Indicator 4.5.1* (ii) Gross Enrollment Ratio (APK) in lower secondary education (SMP)/similar level: (c) bottom/top quintile (%)



Note: Baseline and intervention projections sourced from projections by the Directorate of Religion, Education, and Culture, Bappenas.

Figure 2.34 Indicator 4.5.1* (ii) Gross Enrollment Ratio (APK) in upper secondary education (SMA)/vocational education (SMK)/similar level: (c) bottom/top quintile (%)

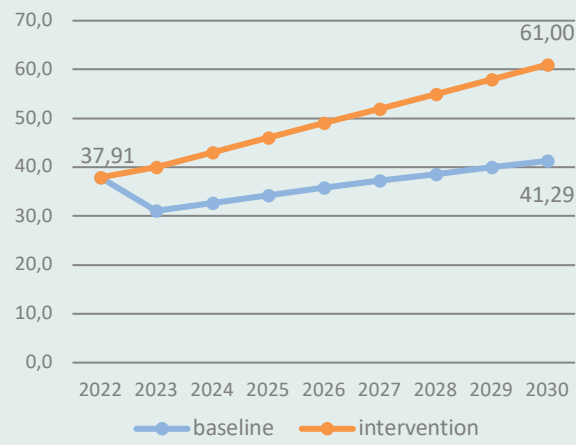


Note: Baseline and intervention projections sourced from projections by the Directorate of Religion, Education, and Culture, Bappenas.

Gross enrollment ratio (APK) in lower secondary education (SMP)/similar level and upper secondary education (SMA)/vocational education (SMK)/similar level at the bottom and top quintiles are expected to reach nearly 100% by 2030 under the intervention scenario. At the moment, the ratio is at 77.9% for upper secondary education (SMA) and 98.1% for lower secondary education (SMP). Reducing the education enrollment gap between the bottom and top quintiles can be done by providing better access to education service for students from households with low socio-economic status. The education assistance provided is expected to not just improve access to education service, but also improve the survival rate of students in the education system. Furthermore, diversification of education service can provide alternative options for children in special situations (special needs children/ABK-*anak berkebutuhan khusus*, children living in underdeveloped, frontier, and outermost regions, working children, etc.)

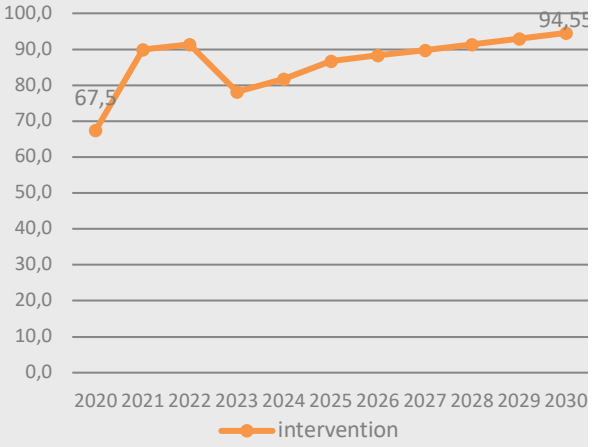
Meanwhile, gross enrollment ratio in higher education between the bottom and top quintiles of socio-economic groups is targeted to reach 61% by 2030 under the intervention scenario. A more consistent quality and affordability of higher education service in regions across Indonesia, strengthening adaptive curriculum and aligning skills/study programs with requirements in Businesses and Industries (DUDI/*Dunia Usaha dan Dunia Industri*), and improving digital learning quality, such as by using Massive Online Open Courses (MOOCs), are efforts to achieve the target in reducing higher education enrollment gap between socio-economic groups.

Figure 2.35 Indicator 4.5.1* (ii) Gross Enrollment Ratio (APK) in higher education: (c) bottom/top quintile (%)



Note: Baseline and intervention projections sourced from projections by the Directorate of Religion, Education, and Culture, Bappenas.

Figure 2.36 Indicator 4.c.1 Percentage of teachers meeting qualifications in line with national standards by level and type of education: (2) Percentage of teachers certified as educators



Note: 2021–2024 projection refers to the targets of SDGs National Action Plan, the 2025–2030 projection continues the trend

2. Achievement Strategies for Goal 4

Major policies that can potentially boost literacy and numeracy skills (indicator 4.1.1) and increase completion rate (indicator 4.1.2) of primary education (particularly SMP/similar level), and upper secondary education (SMA/SMK/similar level), as well as higher education are:

1. Implement the Merdeka Curriculum with its deeper emphasis on literacy and numeracy skills that will be an important foundation for lifelong learning. The Merdeka Curriculum also uses a new approach in basic literacy and numeracy learning during early childhood education and early classes in primary education/similar level, where early literacy development focused on the love of reading and understanding what is being read by adults (teachers, parents), instead of focusing on technical reading abilities or decoding (the ability to sound out letters and words) and writing.
2. National Assessment (AN) that measures students' literacy and numeracy. Attention to the learning environment through a learning environment survey in the National Assessment is also expected to lead to a conducive learning environment for all students.
3. Delivery of equitable and right-targeted education assistance;
4. Strengthen one-year preschool service;
5. Diversify education service in line with a child's special condition;
6. Provide education facilities and infrastructure in line with assessed needs;
7. Discontinue National Examination (UN/*Ujian Nasional*) for all students as a mandatory final exam with high stakes to pass an education level. This can improve education completion and reduce drop-out rate.
8. Optimize the disbursement and use of School Operational Assistance (BOS/*Bantuan Operasional Sekolah*) fund to support education units to carry out innovations and learning initiatives.

Efforts to improve learning quality include increasing the number of teachers meeting qualifications in line with national standards (indicator 4.c.1) to be distributed more evenly so every Indonesian child can learn from a competent teacher. Major policies that can potentially increase the percentage of teachers meeting qualifications in line with national standards are:

1. Update the policy on Teacher Professional Education (PPG) to expand it for pre-service teachers (*calon guru/prajabatan*) and in-service teachers. Included in this policy is a recognition of previous learnings, providing a better chance for in-service teachers to obtain certifications through other paths aside from Teacher Professional Education (PPG), such as through the Transformational Teacher (*Guru Penggerak*) program or other education and trainings for Teachers. Such policy may accelerate the increase in the number of certified teachers.
2. Along with updating the policy on Teacher Professional Education (PPG), the competency model for teachers should also be updated to be more in line with current requirements and developments. The competency model in question includes four competencies: professional, pedagogic, social, and personality. To make it easier to use them in the efforts to increase teachers' competencies, each of these competencies is also developed in levels.
3. Efforts to increase the number of certified teachers can also be affected by the Policy to appoint Government-Employed Teachers with Work Agreement (*Guru PPPK*/*Guru Pegawai Pemerintah dengan Perjanjian Kerja*). The opportunity to become Government-Employed Teachers with Work Agreement (*Guru PPPK*) is prioritized for in-service teachers or graduates of Teacher Professional Education (PPG) who have yet to become teachers, but possessed Undergraduate (S-1) or Four-Year Diploma (D-IV) academic qualification. With the opportunity to become *Guru PPPK*, it is hoped that teachers or pre-service teachers who have yet to be certified or meet national standards will be encouraged to fulfill them.

Major policies that can potentially increase the level of participation in organized learning (one year before primary education age) (indicator 4.2.2) are:

1. Strengthen public awareness for the importance of preschool education;
2. Strengthen the role of Early Childhood Education Champions (*Bunda PAUD*) at every level of government;
3. Improve early childhood education service quality and institutions;
4. Provide competent early childhood educators and education workers;
5. Provide facilities and infrastructure for early childhood education; and
6. Accelerate the use of early childhood education funding, so that Administration Operational Fund (BOP/*Bantuan Operasional Penyelenggaraan*) for early childhood education can be utilized in a more optimal manner and reduce the burden of early childhood education costs for families.

Major policies that can potentially remove education enrollment disparities in secondary and higher education between the poorest 20% and richest 20% are:

1. Delivery of equitable and right-targeted education assistance;
2. Strengthen the database for target beneficiaries of education assistance;
3. Diversify education service in line with a child's special condition;
4. Provide education facilities and infrastructure in line with assessed needs;
5. Optimize the disbursement and use of School Operational Assistance (BOS/*Bantuan Operasional Sekolah*) fund to support education units to carry out innovations and learning initiatives.
6. Improve teaching and learning quality by strengthening adaptive curriculum.

7. Strengthen digital-based learning by increasing the capacity of educators, students, and parents.
8. Strengthen the alignment of skills/study programs in accordance with requirements in Businesses and Industries (DUDI) as well as skills fit for the 21st century
9. Higher education admission tests that are in line with the emphasis on literacy and numeracy in primary and secondary education curriculum. This is expected to reduce the need for expensive extra lessons outside of school, one of the factors causing inequality of access to State Higher Education Institutions (PTN/*Perguruan Tinggi Negeri*) based on socio-economic status.
10. The Smart Indonesia Card for Higher Education (KIP Kuliah), which pays for tuition and living costs for students enrolling in State Higher Education Institutions (PTN) and Private Higher Education Institutions (PTS/*Perguruan Tinggi Swasta*)

The Merdeka Curriculum has an enormous potential to raise literacy and numeracy of Indonesian children and teens as learning achievements for each school subject are designed to be oriented on these skills. The Merdeka Curriculum also emphasizes the importance of proper learning in line with the stages of a student's learning achievements. Thus, the curriculum focuses on proficiency of literacy and numeracy skills as the foundation for learning.

The Merdeka Curriculum goes hand-in-hand with the National Assessment as a form of monitoring and evaluation for students, but even more so for education units. Results from the sample-based National Assessment (thus, not all students are participants) should be used by education units as information about their effectiveness in developing students' literacy and numeracy skills, as well as in providing the opportunity for students to build their characters.

Distribution of education assistance can help ease some of the cost burden for students. Such education assistance is expected to enable students to finish the level of education they are currently taking. Thus, as a principle of fairness, the amount provided for education assistance should offset the amount required, which may differ from region to region. Furthermore, the database should be strengthened to ensure that the assistance is distributed optimally and right-targeted.

Strengthening the one-year preschool service is important to ensure that children are ready to continue to the higher level of education. Children who attend preschool education tend to have higher survival rates and better achievements. Thus, it is very important to foster public awareness about the urgency of one-year preschool service. The role of Early Childhood Education Champions (*Bunda PAUD*) at every level of region should be optimized to convey the message and urgency, as well as, to ensure optimal implementation of one-year preschool service. Early childhood education units, which are mostly community-run at the moment, should be better managed. This is to ensure the quality of service provided, the quality of educators, and a solid and recognizable institutional basis.

Education facilities and infrastructure, including access to connectivity (electricity and network), should be provided across Indonesia. Diversification of education service can provide alternative options for children in special situations, such as special needs children (ABK/*anak berkebutuhan khusus*), children living in underdeveloped, frontier, and outermost regions, working children, etc., so they can still access education service.

Interventions carried out to improve higher education enrollment rate are, among others, by using Smart Indonesia Card (KIP) and changing the admission system for enrolling into State Higher Education Institutions (PTN), which can potentially increase

enrollment rate for students from poor families. Similar to the supply issue at lower and upper secondary education levels, higher education service also needs to be distributed more evenly across Indonesia so that prospective students from low-income families do not have to spend a lot of money to go to other regions to study.

The government has carried out comprehensive efforts to provide equity of access to education opportunity. The COVID-19 pandemic has become a strong factor that drives the adjustments of various education policies. Still, many initiatives are new, so their effectiveness remains to be seen. Therefore, it is imperative to continuously monitor and evaluate implementation of these policies, including to monitor their effectiveness in achieving Sustainable Development Goals, especially Goal 4.

The problem of education opportunity gap is a complex one. Aside from education policy reforms, interventions from outside the education sector are also needed. For example, values observed by the society and parents on the importance of education for girls is one of the factors that can influence education completion rate. The issue of child marriage is also connected to education completion rate. Education quality that provides real benefits for women, for example, that impacts their employability and empowerment, can motivate parents to support their daughters to complete their education instead of marrying them off.

Private schools play a large role in providing education opportunity for the younger generations in Indonesia. To ensure affordable school fees and high-quality learning, especially in low-fee private schools equivalent to public schools, a more effective public-private partnerships should be developed to ensure that each child can graduate and achieve the expected competencies, thus reaching the target for education completion rate. Such partnerships may be in the form of, among others, providing education assistance to students, particularly from poor and vulnerable families, that enroll in private schools because they failed to secure enrollment in public schools. Jakarta has started this initiative since the 2021/2022 academic year through the joint program for New Student Intake (PPDB/*Penerimaan Peserta Didik Baru*). Such initiative should be adopted by other regions.

Education policies mentioned above are the start of a long process to improve high-quality education opportunity for all citizens of Indonesia. It takes time to assess the impact of these policies on important indicators in Goal 4 of Sustainable Development Goals. Therefore, it is very important to allow time and opportunity for all stakeholders to learn to implement changes and to fully adopt these policies before real impacts can be produced from systemic changes due to these policies.

E. Goal 5 Gender Equality

Goal 5 of SDGs is to Achieve Gender Equality and Empower All Women and Girls with the following targets:

- Target 5.1: End all forms of discrimination against women everywhere.
- Target 5.2: Eliminate all forms of violence against women in public and private spheres, including human trafficking and sexual exploitation, as well as various other forms of exploitation.
- Target 5.3: Eliminate all harmful practices, such as child, early, and forced marriages, as well as female genital mutilation.
- Target 5.4: Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.

- Target 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.
- Target 5.6: Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Program of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences.
- Target 5.a: Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.
- Target 5.b: Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.
- Target 5.c: Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels.

Indicators to be discussed in the roadmap are:

a) 5.3.1* Proportion of women aged 20–24 years who were married or in a union before age 15
b) 5.3.1* Proportion of women aged 20–24 years who were married or in a union before age 18
c) 5.5.2* Proportion of women in managerial positions

1. Target Achievements for Goal 5

Target achievements for child/early marriage

The proportion of women aged 20–24 years who were married or in a union before age 15 (%) at the baseline showed stagnation from 0.50% to 0.48%. Meanwhile, for those married before 18, the baseline showed a decrease, with prevalence ranging from 8% to 7%. For the intervention scenario, it is expected that both indicators will continue to decline, with a higher rate of decline in the proportion of women aged 20–24 who were married or in a union before age 15 (%) and before 18 (%) to 0.44% and 5.93%, respectively, by 2030. This is because these indicators are relatively high, and a progressive decrease is expected, considering the vulnerability of those under 15 to serious health complications such as maternal mortality, premature birth, low birth weight, and an increased risk of reproductive system infections. Additionally, young marriages pose risks of limited access to education, difficulty in making appropriate decisions, and domestic violence. In this regard, encouraging the progressive delay of early marriages will ensure that children have better access to education, health, and protection.

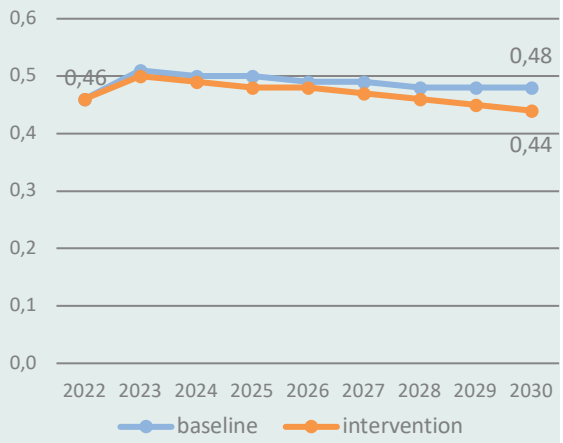
Target Achievements for Proportion of Women in Managerial Positions

The proportion of women in managerial positions is fundamentally unbalanced compared to men. For managerial positions, the proportion of women at the baseline tends to increase from 32.5% to 47.4% by 2030. With interventions, it is hoped that the proportion of women in managerial positions can increase to 50%. The proportion of women in managerial positions is crucial because there are significant business and organizational benefits obtained when there is gender diversity in leadership. These benefits include diverse perspectives, experiences, and backgrounds that contribute to better decision-making.

Furthermore, women as consumers can better understand the market. Also, representation and equality are crucial in this modern era to reflect diversity and equality in organizations, creating a more inclusive environment and helping organizations

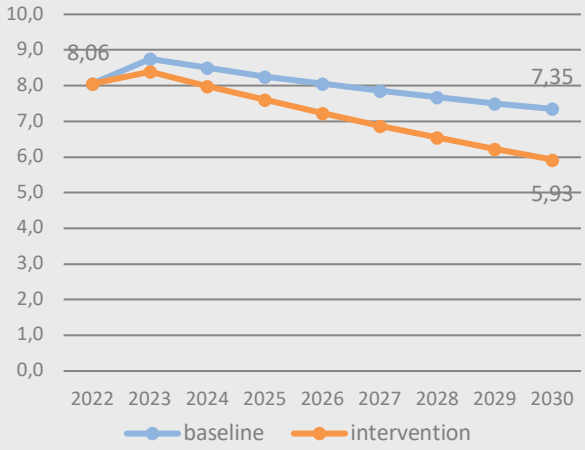
achieve gender equality goals and drive change. Research indicates that organizations with strong female leadership tend to perform better.

Figure 2.37 Indicator 5.3.1* Proportion of women aged 20–24 years who were married or in a union before age 15 (%)



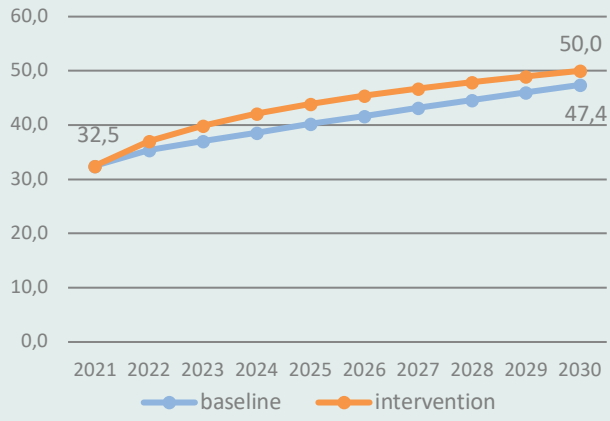
Note: Baseline and intervention projections use the logarithm model. The 2030 intervention target refers to the old Roadmap document.

Figure 2.38 Indicator 5.3.1* Proportion of women aged 20–24 years who were married or in a union before age 18 (%)



Note: Baseline projection uses the power model and intervention projection refers to the exponential model.

Figure 2.39 Indicator 5.5.2* Proportion of women in managerial positions (%)



Note: Baseline projection uses the power model and intervention projection refers to the power model.

2. Achievement Strategies for Goal 5

Child/early marriage

There are several government policies and initiatives currently undertaken to address the issue of child/early marriage in Indonesia. Among these measures is the enactment of Law No. 1 of 1974, establishing the minimum marriage age at 16. Additionally, the Ministry of Women's Empowerment and Child Protection has formulated policies for the Acceleration of Child Marriage Prevention. These propose

diverse strategies, including a national campaign on the risks of child marriage, enhancing children's access to education and healthcare, and forging partnerships with local communities to reduce instances of child marriage. Conditional Cash Transfers (PKH/*Program Keluarga Harapan*), a social assistance program aimed at alleviating poverty and enhancing the well-being of impoverished families in Indonesia, incorporates educational components on reproductive health and child/early marriage to prevent such occurrences.

Another strategy is by establishing the National Commission on Violence Against Women (*Komnas Perempuan*), tasked with the oversight and monitoring of policies and the implementation of protective measures for women and children against all forms of violence, including child/early marriages.

The strength of Indonesia's governmental policy strategy lies in its strong commitment to addressing the issue of child/early marriage, underscored by the enactment of Law No. 16 of 2019 on child protection. Furthermore, policies directed at elevating the quality of education and expanding access for girls contribute to mitigate dropout rates and enhancing overall educational quality, ultimately reducing the prevalence of child/early marriages.

However, despite the existence of laws stipulating the minimum marriage age, instances of court-sanctioned exceptions for marriages below this age persist when justifiable reasons are presented. Additionally, unregistered early marriages, often conducted through informal ceremonies, continue to transpire. Contributing factors include strong cultural norms, poverty and educational deficits, and limited access to information. Consequently, education and social campaigns on the importance of reproductive health and understanding the adverse ramifications of child/early marriages need to be continued. Another challenge is the lack of coordination and synergy among various agencies and institutions involved in preventing child/early marriages. The multitude of participating institutions does not guarantee an expedited reduction in child marriage rates due to the quality of weak and sporadic programs. Furthermore, the persistently high poverty rates in Indonesia serves as a catalyst for child/early marriages, and entrenched cultural and religious beliefs justifying such marriages have also impeded government programs.

In addition to existing policies, renewed emphasis on various programs is recommended to curtail child marriage rates. These include:

a. Comprehensive reproductive health education for young children to heighten awareness regarding the risks and consequences of child marriages. Such endeavors could be incorporated into middle school education as a mandatory component.
b. The development of life skills in children, such as abilities to communicate, negotiate, and be independent, to bolster their confidence and independence in making appropriate decisions about marriage. This may be facilitated through formal education as part mandatory extracurricular activities.
c. Initiatives aimed at effecting cultural behavioral changes and altering permissive attitudes towards child marriages, sustained through continuous campaigns designed to increase community awareness on the negative impacts of such marriages.
d. Oversight and protection of children by parents, both within the home and outside of home.
e. Improving education access and quality for girls, coupled with women empowerment.

f. Collaborative efforts spanning multiple sectors, involving the government, private sector, academics, civil society, and the media. Collaborative endeavors are expected to ensure a holistic and comprehensive approach, addressing root issues such as poverty, gender inequality, and violence against children.
g. Increased involvement of men in household responsibilities. Elevating the role of men in families, as fathers and husbands, can significantly contribute to the reduction of child marriages. Active participation by men in household roles can help foster an environment conducive to children's development and act as a deterrent against early marriages.
h. Rigorous legal enforcement to curb child marriage practices, incorporating clear regulations and stringent actions against perpetrators, reinforced by community reporting.

Proportion of Women in Managerial Positions

The government has taken a keen interest in the proportion of women in managerial positions by implementing several policy strategies as follows (Ministry of Women's Empowerment and Child Protection, 2017; Statistics Indonesia, 2020; UNDP, 2019).

a. Facilitating increased access for women to relevant education and training for managerial positions, enabling them to meet the required qualifications.
b. Encouraging companies to have policies that support work-life balance, such as maternity leave, family leave, and flexible working hours.
c. Improving women's access to capital and business credit to help them start their own businesses and elevate them to managerial positions.
d. Providing special training and mentoring for women who want to advance their careers into managerial roles.
e. Raising awareness and support for women's rights in the workplace, including the prevention and handling of harassment and discrimination.

Generally, there are strengths and weaknesses in the strategies, policies, and programs aimed at increasing the proportion of women in managerial positions. The strengths in the government's strategies, policies, and programs are the potential to enhance diversity and inclusivity in an organization's leadership. This can lead to a more diverse perspective in decision-making and provide opportunities for women with skills and talent to advance in careers with good income prospects. Women can also enhance organizational productivity and performance. It is hoped that the outlined government programs can all be achieved. On the other hand, there are also weaknesses in these government strategies, policies, and programs. Among them is the possible difficulty in finding a sufficient number of qualified and experienced women for higher-level managerial positions. Consequently, it could be challenging for organizations to meet their targets for female representation. Government policies and programs can also be seen as a form of positive discrimination against men, as they may miss out on promotion opportunities due to their gender. Women in managerial positions might experience gender stereotypes or biases, which can hinder their progress or make their work more challenging. Ultimately, government programs won't be effective unless accompanied by cultural changes in organizations regarding gender-unbiased thinking and actions.

Some recommendations to increase the proportion of women in managerial positions include:

a. Implement affirmative action policies to amplify opportunities for women to hold managerial positions in both public and private sectors. Such policies may be done

by giving preference for women in recruitment, promotion, and strategic placement process.

b. Establish mentoring and coaching programs to facilitate the development of women's leadership skills and professional capabilities. Such programs can assist women in preparing for more senior managerial positions in the future.

c. Increase awareness on the significance of women's representation in managerial positions through social campaigns, trainings, and workshops. By strengthening this awareness, organizations can reinforce a culture that advocates for gender equality and diversity.

d. Provide work flexibility programs, including flexible working hours and locations, to support women's work-life balance. This can aid women to stay productive in their careers, while managing personal and familial demands. To strengthen the implementations of these innovative recommendations, support from all stakeholders, including the government, academics, the private sector, civil society, and media, is paramount.

F. Objective 6 Clean Water and Sanitation

Goal 6 of SDGs is to Ensure Availability and Sustainable Management of Water and Sanitation for All with the following targets:

- Target 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- Target 6.2. By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- Target 6.3. By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- Target 6.4. By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- Target 6.5. By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.
- Target 6.6. By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes.
- Target 6.a. By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programs, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.
- Target 6.b. Support and strengthen the participation of local communities in improving water and sanitation management.

Indicators to be discussed in the roadmap are:

a) Indicator 6.1.1* (a) Proportion of households using safely-managed drinking water services (Improved drinking water) (Ladder 4)
b) Indicator 6.1.1* (b) Proportion of households using safely-managed drinking water services (Ladder 5)
c) Indicator 6.2.1.(a) Proportion of households using hand-washing facilities with soap and water
d) Indicator 6.2.1.(b) Proportion of households using improved sanitation services.
e) Indicator 6.2.1* Proportion of households using safely-managed sanitation services.

1. Target Achievements for Goal 6

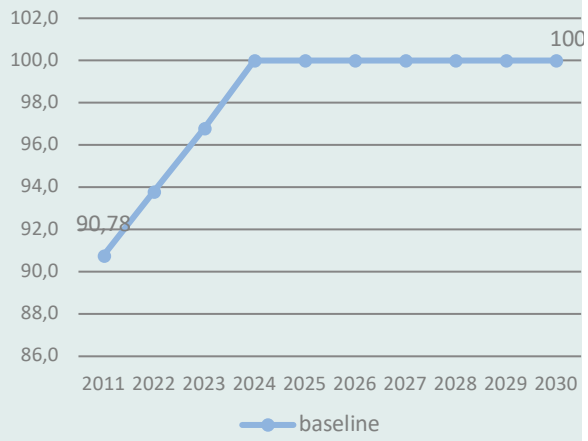
The SDGs Indicator metadata for Goal 6 defined access to drinking water using a ladder approach, which (i) not available, (ii) unimproved, (iii) limited, (iv) basic, and (v) safe, with the target of safe drinking water access (ladder 5) to be achieved gradually. The Indicator Metadata is the basis and reference for the preparation of the National Action Plan (RAN/*Rencana Aksi Nasional*) for sustainable SDGs implementation. In the Indicator Metadata, the 6.1 Target only has one Indicator and used the global indicator. Thus, the definition for households using safely managed drinking water services is those having access to drinking water from proper drinking water sources, the locations of which are inside the house or on the premises, available whenever needed, and meeting the requirements for drinking water quality (all criteria must be met).

As a consequence of Indonesia's commitment to the global consensus through the SDGs, the target for safe drinking water access by 2030 is defined as access to safe, ready-to-drink water, in accordance with Regulation of the Minister of Health No. 492 of 2010 (updated with Regulation of the Minister of Health No. 2 of 2023). This has given rise to the ladder approach mentioned above. Measuring safe drinking water involves complex water quality checks, with multiple parameters such as turbidity, TDS (total dissolved solids), pH, color, odor, nitrate, nitrite, iron, manganese, and coliform bacteria.

Analysis carried out by the SDGs Center, using data on proper drinking water sources with a linear baseline, shows an increasing trend from 90.78% (2021) to achieving 100% access to safe drinking water in 2024. To achieve 100% access to safe drinking water in 2024, the average growth rate is 3.39%. Historically, with an average growth rate of 7.02% for 20 years (2000–2020) (MDGs Goal 7), reaching the 100% target for access to safe drinking water in 2024 is an achievable feat. However, it should be noted that the largest contributors to the growth rate comes from non-piped-protected water, with the high growth in the use of refill and bottled water as the main sources of drinking water.

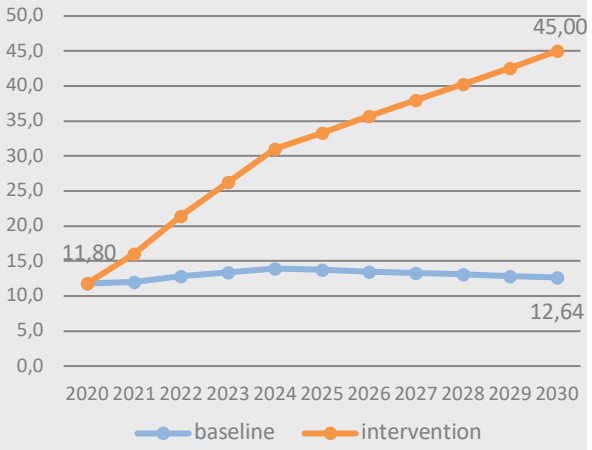
On the other hand, the SDGs target is to achieve access to safe drinking water, requiring further analysis to determine a safe target. Based on the results of the 2020 Study of Household Drinking Water Quality (SKAM-RT) conducted by the Ministry of Health, a baseline of 11.8% for access to safe drinking water was obtained. Results from this study provide the first data describing the quality of drinking water at the national level. A target calculation exercise conducted by the National Development Planning Agency (Bappenas) in the 2020–2030 Roadmap for Safe Household Drinking Water has set the target of access to safe drinking water at 45% by 2030. This condition considers climate resilience and water security, as well as a historical data approach to piped water sources. To achieve the target of 45% access to safe drinking water, an investment of IDR324 trillion (USD21.62 billion) is needed.

Figure 2.40 Indicator 6.1.1* Proportion of households using safely-managed drinking water services (Improved drinking water) (Ladder 4) (%)



Note: Baseline projection uses the linear model and intervention projection is not needed as target will be reached by 2024.

Figure 2.41 Indicator 6.1.1* Proportion of households using safely-managed drinking water services (Ladder 5) (%)



Note: Document Sources are the 2020–2030 Roadmap for Safe Drinking Water by the Ministry of National Development Planning/National Development Planning Agency and 2020 Baseline Study of Household Drinking Water Quality (SKAM-RT) by the Ministry of Health

Washing hands with water alone is insufficient. According to research, washing hands with soap is the cheapest and most effective health intervention compared to other methods to reduce the risk of disease transmission. Data measured is using combination variables of handwashing behavior and the availability of handwashing facilities with soap and water. This is so that the measured variables can accurately describe the condition of the population with handwashing facilities accompanied by handwashing behavior with soap and water, thus more properly targeted.

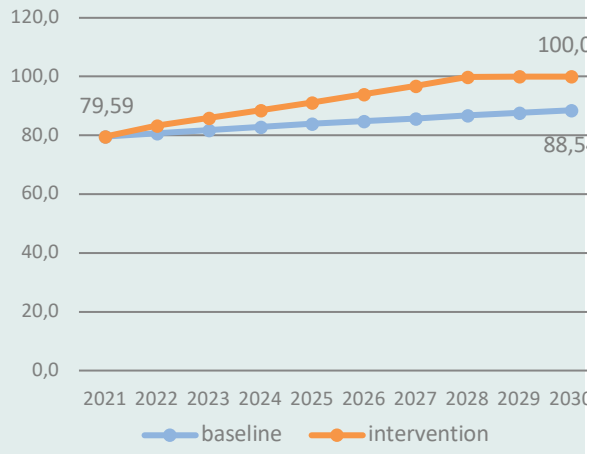
The SDGs Center carried out an analysis of the projected proportion of households using handwashing facilities with flowing water and soap, with the baseline using methodsx and the intervention using logarithmic model, at the base year 2021. Baseline projection using methodsx shows a gradual trend with the achievement projected to reach 82.90% in 2024 and 88.54% by 2030. To achieve the 100% target by 2030, existing policies and strategies need to be continued, including the consistent and widespread implementation of the five pillars of Community-Based Total Sanitation (STBM) (Regulation of the Minister of Health No. 3 of 2014).

The SDGs Indicator Metadata for Goal 6 has also defined sanitation access using the ladder approach, with (i) open defecation, (ii.a) covered pit latrine, (ii.b) unimproved, (iii) shared, (iv) basic sanitation, and (v) safely managed. The target for safely managed sanitation access (ladder 5) will be achieved gradually, with specific targets outlined in the 2020–2024 National Medium-Term Development Plan (RPJMN) (15% of households) and the 2030 Roadmap for Safe Sanitation (30% of households).

Safely Managed Access means that households (in urban or rural areas) use individual facilities where the upper structure is equipped with a pour-flush toilet, and the lower structure is connected to a domestic wastewater piped network (offsite/SPALD-T) or uses a septic tank that has been emptied at least once in the last 3–5 years.

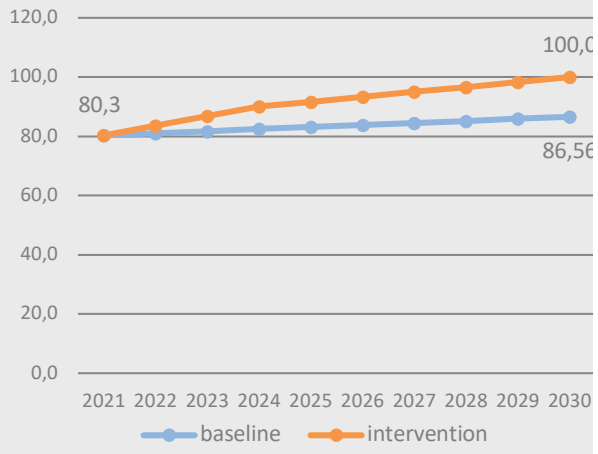
Unshared Improved Access means that (i) households (in urban or rural areas) use individual facilities where the upper structure is equipped with a pour-flush toilet, and the lower structure uses a septic tank; (ii) in rural areas, if households use individual facilities where the upper structure is equipped with a pour-flush toilet, and the lower structure is a pit latrine.

Figure 2.42 Indicator 6.2.1* (a) Proportion of households using hand-washing facilities with soap and water (%)



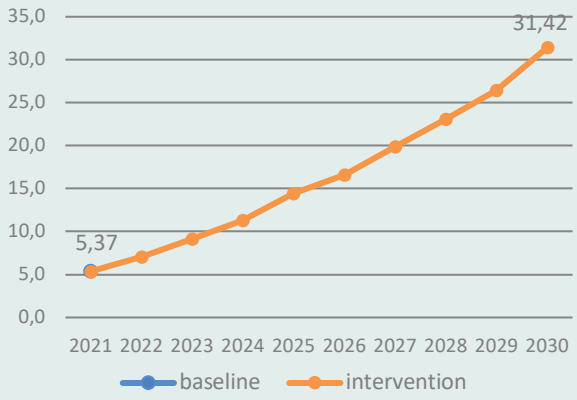
Note: Baseline projection uses the MethodX model and intervention projection refers to the exponential model.

Figure 2.43 Indicator 6.2.1* (b) Proportion of households using improved sanitation services. (%)



Note: Baseline projection uses the MethodX model and intervention projection refers to the linear model.

Figure 2.44 Indicator 6.2.1* Proportion of households using safely-managed sanitation services.



Source: Document Source is the 2020–2030 Roadmap for Safe Sanitation by the Ministry of National Development Planning/National Development Planning Agency.

Households with the final disposal of their excrements through pit toilets or ground holes are considered to have adequate access if residing in rural areas with a population density of less than 25 people per hectare (based on built-up area) according to Regulation of the Minister of Public Works and Public Housing No. 29 of 2018 on Technical Standards for Minimum Service Standards (SPM/*Standar Pelayanan Minimal*) for Public Works and Public Housing.

Shared Adequate Access is defined as follows: (i) in urban or rural areas, when households use shared facilities with specific other households, where the upper structure is equipped with a goose-neck toilet, and the lower structure uses either a septic tank or domestic wastewater treatment facility (IPALD/*Instalasi Pengolahan Air Limbah Domestik*); (ii) specifically in rural areas, when households use shared facilities with specific other households, where the upper structure is equipped with a goose-neck toilet, and the lower structure uses an on-site waste disposal system. Regulations related to population density in rural areas remain applicable as stated in the definition of Unshared Improved Access/basic sanitation.

The SDGs Center carried out an analysis of the projected proportion of households with access to improved sanitation using methodsx as baseline and linear model as intervention, at the base year 2021. The baseline methodsx indicates a gradual trend with the projection reaching 82.49% in 2024 and 86.56% by 2030. Policies and strategies to achieve the 2030 target of 30% safe sanitation should be continued by, among others, expanding areas with restricted open defecation (BABS), scheduled fecal-sludge service (LLTT) in areas without centralized wastewater networks (offsite) in priority locations as recommended in the 2030 Roadmap for Safe Sanitation. Management of household domestic wastewater, comprising blackwater (toilet waste) and greywater, needs to be handled safely. The gradual transfer of fecal waste management (including Scheduled Fecal-Sludge Service/LLTT and offsite wastewater networks) to domestic wastewater service operators is recommended, starting from the lowest level, such as Subnational Technical Implementation Units (UPTD) and Subnational Public Service Agencies (BLUD), up to the Subnational Companies (PD) or Subnational Drinking Water Utilities. The integration of domestic wastewater services into Subnational Drinking Water Utilities is one of the strategies developed during the 2020–2024 National Medium-Term Development Plan (RPJMN). Such service integration aligns with the principles of a unified water approach, where treated domestic wastewater discharged by service institutions will affect raw water and drinking water quality. Furthermore, Subnational Drinking Water Utilities also assume responsibility for liquid waste resulting from the water they produced. According to the guidelines for the Integration of Domestic Wastewater Services into Subnational Drinking Water Utilities developed by the Ministry of Public Works and Public Housing, there are two main requirements for Subnational Drinking Water Utilities to merge their services with the domestic wastewater sector, namely sound Subnational Drinking Water Utilities and piped water service coverage exceeding 50%.

2. Achievement Strategies for Goal 6

The policy direction and strategies for providing access to drinking water and sanitation are outlined in the National Long-Term Development Plan (RPJPN) 2005–2025 and National Medium-Term Development Plan (RPJMN) 2020–2024. In the RPJPN, the long-term policy direction and strategies envision water as both social and economic goods, implying the need to manage water professionally based on economic principles. Similarly, there is a need to develop subnational government capacity and enhance cooperation between regions.

In the RPJMN, the policy direction and strategies for access to drinking water include improving institutional governance and provider capacity, developing and managing drinking water supply systems (SPAM/*Sistem Pengelolaan Air Minum*), and urging the adoption of water-saving behaviors. sustainable sanitation service systems, the policy direction and strategies are embodied in the accelerated urban sanitation development program (PPSP/*percepatan pembangunan sanitasi permukiman*),

encompassing the improvement of institutional capacity and local leaders' commitment, infrastructure development, sanitation service improvement, behavioral change promotion, and collaboration and funding patterns.

Priority programs supporting the provision of adequate and safe access to drinking water and sanitation include: (i) the development of sustainable drinking water and sanitation supply systems; (ii) guidance to maintain administration of proper and safe drinking water and sanitation; (iii) regulations on administration of proper and safe drinking water and sanitation; (iv) monitoring the quality of drinking water and sanitation; (v) access to safe and proper sanitation (wastewater) for 90% of households; and (vi) piped water access (10 million household connections).

To expedite the provision of drinking water and sanitation, through Presidential Regulation No. 185 of 2014, the Government has committed to achieve SDG Goal 6 targets by collaborating with all stakeholders. As a tangible step, the Roadmap for Safe Drinking Water (RI Aman) and Roadmap for Safe Sanitation, currently being prepared by the National Development Planning Agency, will outline the policies and strategies.

For the provision of drinking water, RI Aman is implemented through five strategic pillars: (i) policies, regulations, and institutions; (ii) behavioral change and needs formation; (iii) budgeting and financing; (iv) infrastructure, technology, and capacity strengthening; and (v) surveillance of drinking water quality; and behavioral change and needs creation. Key programs and strategies should be encouraged and innovated upon towards achieving access to safe drinking water.

Five formulated "game changers" include: (i) collaboration and synergy between regions; (ii) management of Subnational Drinking Water Utility assets; (iii) Drinking Water Security Plan (RPAM/*Rencana Pengamanan Air Minum*); (iv) the next generation of Community-Based Drinking Water and Sanitation Provision (Pamsimas); and (v) surveillance of drinking water quality.

The strategy for achieving Goal 6, particularly the safe sanitation target, refers to the 2030 Roadmap for Safe Sanitation which is formulated into six components: (i) infrastructure and technology; (ii) institutions; (iii) regulatory frameworks; (iv) community participation; (v) sanitation markets; and (vi) funding. Based on these six components, there are seven main strategies to achieve the Safe Access target by 2030, namely: (i) accelerating the development and operation of resilient infrastructure and increasing the coverage of sustainable sanitation services that are environmentally friendly; (ii) improving administrative governance and quality of sustainable sanitation services to encourage subnational participation and collaboration; (iii) strengthening regulatory contents and its application as the national legal umbrella to run Domestic Wastewater Treatment Systems (SPALD/*Sistem Pengelolaan Air Limbah Domestik*) and to implement human resources for sanitation; (iv) increasing funding allocation from State/Subnational Budgets and consolidating potential financing from other priority development programs for sanitation development; (v) developing and mobilizing financing sources from the community and private sector to develop infrastructure and provide access and services; (vi) raising awareness and community participation in SPALD administration and improving access to safe sanitation; and (vii) creating an innovation-based ecosystem to strengthen the market to provide safe sanitation services at the national and subnational levels.

Game changers in achieving safe sanitation include: (i) strengthening data collection and policy-making system based on spatial data; (ii) prioritizing greywater management and developing centralized domestic wastewater treatment systems (SPALD-T); (iii) investment and financing frameworks for accountable SPALD

implementation; (iv) developing sanitation markets and innovation; and (v) integrating domestic wastewater service with drinking water service institutions.

The Indonesia 2045 Vision stated that "by acknowledging the rights on water, the state is tasked to administer appropriate mechanisms for sufficient and affordable public access to water." The target to be achieved by 2045 is universal access or 100% access to safe drinking water sources and use of improved sanitation.

The strength of the policy direction and strategies, as summarized in section 2.1, lies in the fact that RPJMN has been established through Presidential Regulation No. 18 of 2020, a crucial stage of the 2005–2025 RPJPN as it will influence the achievement of development targets in RPJPN. Thus, RPJMN can be considered a national consensus guiding the formulation of Subnational Medium-Term Development Plans (RPJMD) in the regions to ensure consistency and continuity of policy direction and strategies from the national government to the regions.

Moreover, the policy direction and strategies in RPJMN are developed based on a comprehensive analysis of challenges in providing access to drinking water and sanitation encountered during the previous periods. External factors influencing and reinforcing these policy direction and strategies include Indonesia's commitment to global agreements through the SDGs, which have set the targets of Goal 6, aligning with the government's commitment to achieving them. External challenges to achieving these targets include global warming and climate change and increased plastic usage (resulting in microplastics in bodies of water), which will escalate the costs of mitigation and treatment in providing water and sanitation facilities.

SDGs Goal 6 involves various stakeholders. At the subnational level, district/city governments are responsible for providing water and sanitation services, as stipulated in Law No. 23 of 2014 on Regional Government. At the national level, supervisory, regulatory, and oversight tasks are divided among at least seven government ministries/agencies: Bappenas for national policy aspects; the Ministry of Public Works and Public Housing (Kementerian PUPR) for technical and construction aspects; the Ministry of Home Affairs (Kemendagri) for institutional and subnational financial aspects; the Ministry of Health (Kemenkes) for water quality regulation and oversight; the Ministry of Finance (Kemenkeu) for national and subnational financial balance, as well as subnational grant forwarding; the Ministry of Energy and Mineral Resources (Kementerian ESDM) for groundwater regulation; and the Ministry of Environment and Forestry (KLHK) for subnational water catchment area conservation and water pollution prevention. With the decentralization of water and sanitation service provision, the challenges in achieving SDGs targets are closely linked to the role of subnational governments. However, governance and institutional aspects of water and sanitation provision in most regions are still weak, and the commitment and capacity of subnational governments in the water and sanitation sector are low.

From a management perspective, most Subnational Drinking Water Utilities are low performers. Sanitation facilities are still not managed comprehensively, both in terms of institutions and systems. Another challenge is the limited financial capacity of subnational governments in developing drinking water and sanitation facilities.

The improvement of institutional governance and provider capacity, which is part of the policy direction and strategies in the 2020–2024 RPJMN, needs to focus on programs that effectively accelerate access achievement, including reducing water losses and accelerating the addition of household connections and wastewater connections, supported by the utilization of water resources potential and improved water resilience. In parallel, policies and strategies to accelerate safe drinking water access also need to

be prepared, including by developing the Roadmap for Safe Drinking Water (RI Aman), currently being prepared under the coordination of Bappenas.

Complementing the policy direction and strategies in the 2020–2024 RPJMN involves continuing and strengthening the urban drinking water platform with innovative and effective investment financing, currently being tested in several districts/cities, and the rural drinking water platform through community-based approaches. It also includes expanding outcome-based or performance-based program approaches for national government funding support to the regions, fostering and strengthening the responsibility of subnational governments. Performance-based programs have been initiated since 2012 in some areas with donor support and have continued with State Budget (APBN) funding, as well as expanded with water-loss reduction and energy efficiency programs.

Policy direction and strategies in the water and sanitation sector that take into account gender equality, services to indigenous communities, marginalized and vulnerable groups, as well as poor and densely populated urban communities, need to be continued and enhanced. Contributions from the water and sanitation sector for stunting reduction also needs to be expanded. Subnational governments will play a more optimal role by cooperating between regions to form a single subnational drinking water utility with shared ownership, which will manage the system more professionally and independently. By achieving economies of scale in drinking water management, the targeted access to proper and safe drinking water can be achieved much faster. As the performance of subnational drinking water utilities improved, the status of those water utilities that are already healthy should be upgraded to a subnational limited liability company (Perseroda), to open up access to funding sources. For sanitation, in certain areas, cooperation between various subnational governments also supports the management of wastewater disposal facilities involving more than one district/city.

In the long run, the role of Non-State Actors (NSAs) in accelerating the achievement of drinking water and sanitation access targets can be optimized through, first, mobilizing non-public funding sources (partnerships, banking, financial institutions) for new investments or facility maintenance. Second, mobilizing NSAs (in this case, NGOs, academics, philanthropy, and religious organizations) for community assistance, especially in promoting clean and healthy living behaviors, particularly in rural areas and densely populated and poor urban areas. Community capabilities that can be improved include community-based facility development, advocacy for water saving, as well as maintaining personal hygiene and neighborhood cleanliness, implemented through the Community-Based Drinking Water and Sanitation Provision (PAMSIMAS) approach and similar approaches.

G. Goal 7 Affordable and Clean Energy

Goal 7 of SDGs is to Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All with the following targets:

- Target 7.1: By 2030, ensure universal access to affordable, reliable, and modern energy services.
- Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix.
- Target 7.3: By 2030, double the global rate of improvement in energy efficiency.
- Target 7.a: By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency, and

advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology

- Target 7.b: By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing states, and land-locked developing countries

Indicators to be discussed are:

a) Indicator 7.1.1.(a) Electricity consumption per capita
b) Indicator 7.2.1* Renewable energy share in the total energy mix
c) Indicator 7.3.1* Primary energy intensity

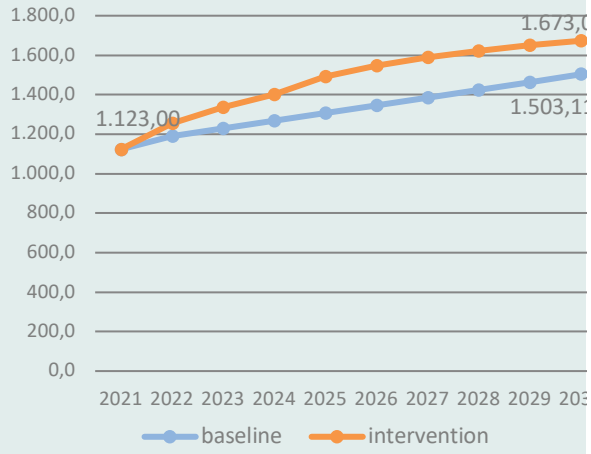
1. Target Achievements for Goal 7

The projected indicator for electricity consumption per capita in the Business-as-Usual (BAU) scenario is estimated to reach 1,323 kWh/capita in 2024. This means that the targeted electricity consumption of 1,400 kWh/capita by 2024, as outlined in the RPJMN target, will not be achieved by continuing with the BAU scenario. The intervention scenario was calculated using the power model to achieve the targeted electricity consumption per capita in line with the RPJMN target. Under this model, electricity consumption per capita is estimated to continue to increase annually but with a tendency to level off, reaching 1,673 kWh/capita by 2030, in line with the figures used by Bappenas in developing the Net Zero Emission (NZE) scenario modelling.

Projections for the share of New and Renewable Energy (NRE) in the primary energy supply or Total Primary Energy Supply (TPES) are expected to continue increasing from 12.16% in 2021, to 19.38% and 21% by 2030, respectively for the BAU and intervention scenarios. These projections are calculated using the linear model. In the intervention scenario, the target for 2030 follows the figures used by Bappenas in developing the NZE scenario. The target in the NZE scenario is actually more moderate than the RPJMN target, approaching 23% in 2024.

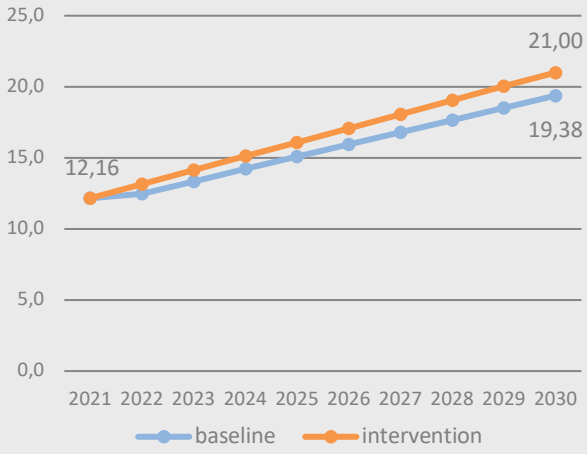
Improvements in energy usage efficiency can be demonstrated by the value of primary energy intensity. Primary energy intensity is the amount of primary energy supply needed to produce one unit of Gross Domestic Product (GDP). The lower the primary energy intensity in terms of Barrel of Oil Equivalent (BOE) per unit of GDP (constant price 2010), the more productive and efficient the energy usage in the country. Primary energy intensity is projected to continue decreasing from 133.9 BOE/IDR Million in 2021, to 111.83 BOE/IDR Million and 102.37 BOE/IDR Million by 2030, respectively for BAU and intervention scenarios. If we refer to the achievement in 2021 and compare it with the RPJMN target of 133.8 SMB/IDR Million in 2024, it appears that the indicator is on the right track to achieve the target. However, seeing that the indicator reached 160.5 BOE/IDR Million in 2022, changes to the economic structure that can affect this indicator should also be taken into account besides energy efficiency initiatives in various sectors. For example, a shift in economic focus to the service sector in the future, which has relatively lower energy intensity compared to the industrial sector.

Figure 2.45 Indicator 7.1.1.(a) Electricity consumption per capita (kWh/Capita)



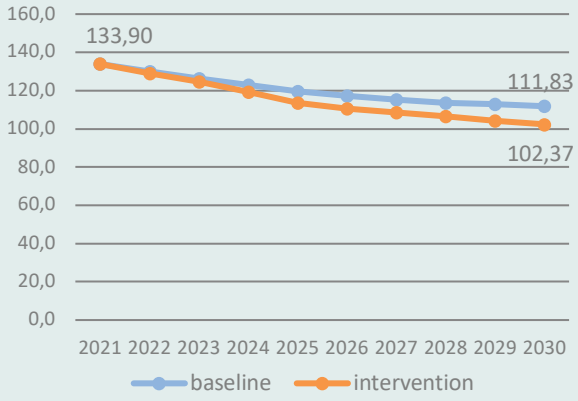
Note: Baseline projection uses the power model and intervention projection refers to the power model.

Figure 2.46 Indicator 7.2.1* Renewable energy share in the total energy mix (%)



Note: Baseline projection uses the linear model and intervention projection refers to the linear model.

Figure 2.47 Indicator 7.3.1* Primary energy intensity (BOE/IDR Mil)



Source: Projection figures taken from an exercise by the Directorate of Environment, Bappenas (Simulation of Green Economy Model – Low Carbon Development Indonesia/LCDI)

2. Achievement Strategies for Goal 7

Indicators such as electricity consumption per capita (7.1.1.a) and primary energy intensity (7.3.1*) have been mainstreamed into the priority program for 'increasing access and supply of evenly distributed, reliable, and efficient energy and electricity' (PP5). PP1 is part of National Priority (PN) 1, which aims to 'strengthen economic resilience for quality and equitable growth.' Meanwhile, PP5 is part of PN 5, focusing on 'strengthening infrastructure to support economic development and basic services.' Increasing the share of renewable energy (target 7.2.1*) has been mainstreamed into RPJMN under the priority program for 'meeting energy needs by prioritizing the increase in New and Renewable Energy (PP1).'

The policy direction and strategies for achieving the target of electricity consumption per capita involve strengthening and expanding energy and electricity

supply services. This is done through measures such as ensuring electricity supply in priority areas, providing new electricity connections for low-income households, promoting the use of induction stoves, developing supporting infrastructure for electric vehicles, and offering subsidies for electric vehicles. Achieving the target of the renewable energy mix can be accomplished through energy diversification and electrification by increasing the utilization of New and Renewable Energy (NRE), such as geothermal, solar, and bioenergy. This includes developing mini/micro grids based on clean energy, utilizing solar rooftops and floating solar power plants, along with the domestic development of solar cell industries. For achieving the target of primary energy intensity, improving energy usage efficiency involves developing Energy Service Companies (ESCOs), enhancing the capacity of transmission and distribution systems, developing information management and data control systems, deploying and utilizing smart grid technologies, and adopting high-efficiency and low-emission technologies (HELE).

From 2015 to 2019, per capita electricity consumption increased from 910 kWh to 1,084 kWh, rising by an average of 43.5 kWh annually. By 2021, per capita electricity consumption had reached 1,123 kWh per capita. However, this indicates that efforts are still needed to achieve the RPJMN target of 1,400 kWh per capita by 2024. Plans to increase electricity access (electrification ratio) must be accompanied by improved availability, adequacy, and service quality to ensure that electricity supply can drive community economic activities, increase income, enhance welfare, and ultimately raise per capita electricity consumption. The industrial sector's electricity consumption contributes greatly to achieving the per capita electricity consumption indicator. Therefore, replacing fuels like coal, gas, and biomass with electricity in the industrial sector will impact the achievement of this indicator.

While the renewable energy mix has been increasing annually, it remains below the government's RPJMN target. The main challenge is the overall higher cost of renewable energy compared to fossil fuels. One reason for this condition is the existence of subsidies for fossil fuels. Another obstacle is the technical characteristic of renewable energy that is generated intermittently, necessitating energy storage facilities, ultimately raising the cost of energy supply units.

Meanwhile, the strategy to enhance energy utilization efficiency by developing Energy Service Companies (ESCOs) still faces regulatory obstacles. ESCOs still lack legal frameworks, making it difficult for energy service ventures to obtain financing from Financial Institutions (FIs). Additionally, the business model offered by ESCOs, where revenue is generated from energy savings, remains challenging for FIs to grasp, as they view energy efficiency projects as conventional projects that still require collateral.

The energy planning paradigm, especially in electricity should not merely aim for achieving an electrification ratio sufficient for lighting, but should consider from the outset how electricity can drive local economies. Therefore, a subnational approach becomes a crucial point to consider. Electricity access planning must be accompanied by mapping the potential local economic resources, to be reflected in the electricity supply-demand planning at each predetermined stage or period. Given the vital role of the industrial sector in achieving the per capita electricity consumption target, a transition energy roadmap is required in the industrial sector, including increasing the share of electricity as an energy source in the industrial sector.

Several programs to accelerate renewable energy development include Renewable Energy-Based Industrial Development (REBID) and Renewable Energy-Based Economic Development (REBED). REBID is implemented through the development and synergy of

large-scale hydropower plants (PLTA) and geothermal power plants (PLTP) integrated with industrial development. The goal of this program is to use large-scale renewable energy to create industrial growth for global product output. Meanwhile, REBED is a program using renewable energy to drive subnational economies, including in 3T locations (underdeveloped, frontier, and outermost regions). On the transmission side, power wheeling schemes or shared use of the power grid will facilitate the transfer of electricity from non-state electricity generators to company-operated facilities by utilizing the transmission network owned and operated by the state-owned electricity company. This will assist multinational companies that have their own renewable energy targets or intend to build their own renewable energy generators. Additionally, the carbon trading mechanism launched for the power generation sector is expected to provide incentives to renewable energy generator developers as they can sell carbon surplus in the form of Carbon Credits (SPE/*Sertifikat Pengurangan Emisi*).

Accelerating the issue of regulations to provide legal support to ESCOs will greatly assist in creating a market for energy efficiency projects that will ultimately support the target to reduce primary energy intensity. Developing integrated financing platforms in the banking sector will drive the development and adoption of energy efficiency projects in buildings and housing. Insurance industry involvement and donor funding can also contribute to increasing trust among energy efficiency project stakeholders, for instance, by developing schemes like Energy Saving Insurance (ESI). ESI is a risk reduction package consisting of financial and non-financial elements designed to increase investor confidence in energy efficiency projects. This model comprises four elements that support a technically robust and viable project structure from a banking perspective (bankability): standard contracts, technical validation, energy savings insurance, and concessional financing.

H. Goal 8 Decent Work and Economic Growth

Goal 8 of SDGs is to Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All with the following targets:

- Target 8.1: Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7% gross domestic product growth per annum in the least developed countries.
- Target 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labor-intensive sectors.
- Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.
- Target 8.4: Improve progressively, through 2030, global resource efficiency in consumption and production, and endeavor to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programs on Sustainable Consumption and Production, with developed countries taking the lead.
- Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for the youth and persons with disabilities, and equal pay for work of equal value.
- Target 8.6: By 2020, substantially reduce the proportion of the youth not in employment, education, or training.
- Target 8.7: Take immediate measures to eradicate forced labor, end modern slavery and human trafficking, and secure the prohibition and elimination of the worst forms of child

labor, including recruitment and use of child soldiers, and by 2025 end child labor in all its forms.

- Target 8.8: Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.
- Target 8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.
- Target 8.10: Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance, and financial services for all.
- Target 8.a: Increase aid for trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries.
- Target 8.b: By 2020, develop and operationalize a global strategy to employ the youth and implement the Global Jobs Pact of the International Labor Organization.

In this roadmap, the indicators to be discussed are:

a) Indicator 8.1.1* Growth rate of GDP per capita
b) Indicator 8.2.1* Growth rate of GDP Per Employed Person/Real growth rate of GDP per employed person per year
c) Indicator 8.3.1.(a) Proportion of Micro, Small, and Medium Enterprises (MSME) with access to credit from formal financial institutions
d) Indicator 8.5.2* Open unemployment rate, by sex and age
e) Indicator 8.9.1* Proportion and growth rate of tourism contribution to total GDP
f) Indicator 8.9.1.(a) Number of foreign tourists

1. Target Achievements for Goal 8

Goal 8 is achieved through a number of targets including maintaining a sufficiently high per capita economic growth; achieving higher levels of economic productivity through diversification, technological advancements, and innovations, including focusing on sectors that provide high value-addition and labor-intensive activities; promoting development policies that support productive activities, the creation of decent jobs, entrepreneurship, creativity, and innovation, and encouraging formalization and growth of micro, small, and medium-sized enterprises, including through access to financial services.

Real GDP growth per capita under the business-as-usual (BAU) scenario ranges between 4% and 4.2% per year. Meanwhile, under the intervention scenario, real GDP growth per capita is expected to go as high as 5% by 2028 and 5.7% by 2030.

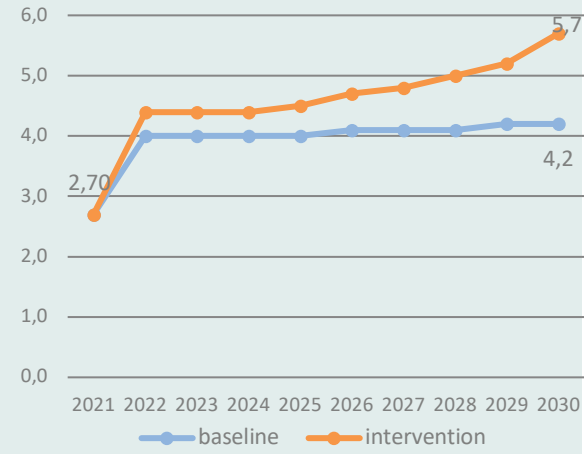
The percentage of micro, small, and medium-sized enterprises (MSMEs) with access to financial services in the baseline condition (2019) is 24.4%. The BAU scenario projects an increase to 31.1% by 2030. Through the intervention scenario, it is anticipated that 41.6% of MSMEs in Indonesia will have access to financial services.

Meanwhile, the growth rate of GDP per employed person over the last 3 years has been around 2.85% per year. Therefore, under the conservative BAU conditions, this is highly likely to persist towards 2030. However, there is significant potential for increased productivity, so with various policy interventions, the growth rate of GDP per employed person can gradually increase to 4.60% by 2030.

As for the open unemployment rate, the baseline is currently at 5.9% (2022). Under the BAU scenario, improvement is expected, with the open unemployment rate projected

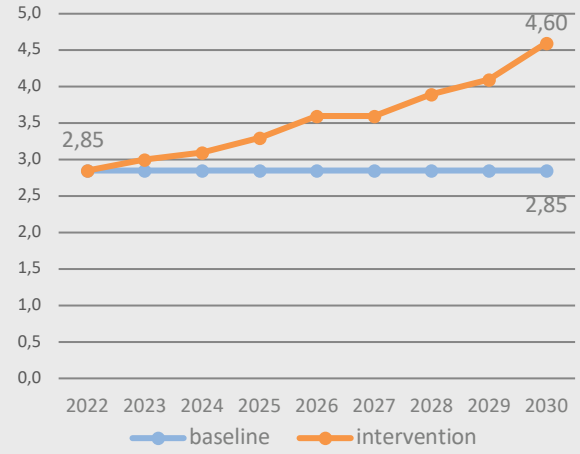
to decline to 5.4% by 2030. With a more progressive scenario through various policy interventions, it is anticipated that open unemployment may decline to 4.8% by 2030.

Figure 2.48 Indicator 8.1.1* Growth rate of real GDP per capita (%)



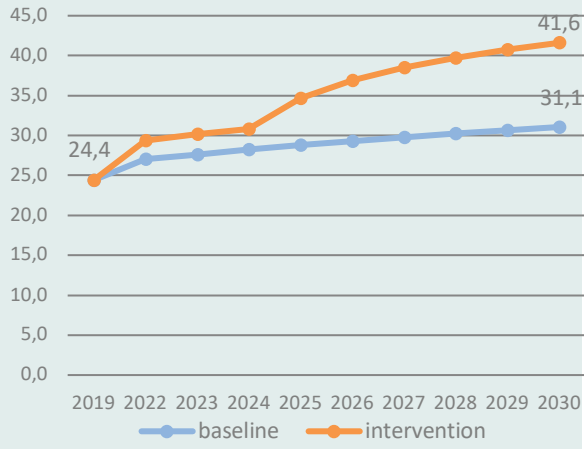
Note: Baseline and intervention projections sourced from the Directorate of Macro Planning and Statistics Analysis, Bappenas

Figure 2.49 Indicator 8.2.1 Growth rate of GDP Per Employed Person (%)



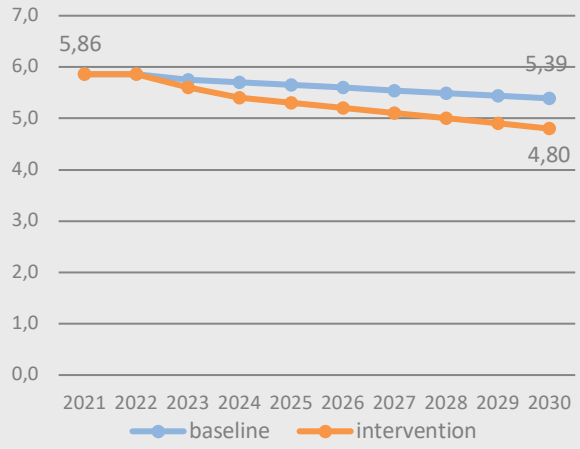
Note: Baseline projection uses data average from the past 3 years and intervention projection sourced from a projection by the Directorate of Macro Planning and Statistics Analysis, Bappenas.

Figure 2.50 Indicator 8.3.1.(a) Percentage of Micro, Small, and Medium Enterprises (MSME) with access to financial services (%)



Note: Baseline projection uses the logarithm model and intervention projection refers to the logarithm model.

Figure 2.51 Indicator 8.5.2 Open unemployment rate by sex and age (%)

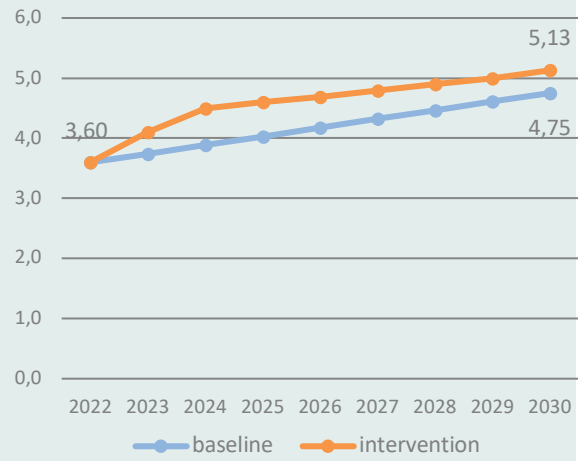


Note: Baseline projection uses the linear model and intervention projection refers to a projection by the Directorate of Labor, Bappenas.

Increasing economic activities in the tourism sector is measured with two indicators, the contribution of the tourism sector to GDP and the number of tourists. Currently, the contribution of the tourism sector to GDP is only around 3.6% (2022). Under the BAU scenario, this contribution is projected to increase to 4.75% by 2030, while with a more progressive intervention scenario, it is expected to reach 5.13% by 2030. The other indicator used is the number of international tourists.

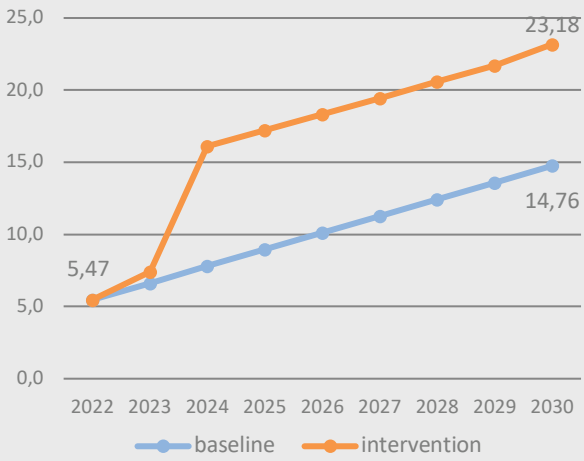
In the current baseline condition (2020), there are 5.47 million visits by international tourists. In the BAU scenario, this figure is projected to increase to 14.76 million by 2030. Under various intervention scenarios, it is anticipated that by 2030, the number of visits by international tourists may reach 23.18 million visits.

Figure 2.52 Indicator 8.9.1* Proportion of tourism contribution to total GDP (%)



Note: Baseline projection uses the exponential model and intervention projection refers to the exponential model.

Figure 2.53 Indicator 8.9.1.(a) Number of foreign tourists (Visits (millions))



Note: Baseline projection uses the linear model and intervention projection refers to the linear model.

2. Achievement Strategies for Goal 8

Achievement Strategies for Real GDP per Capita Growth Targets

Various policies that directly or indirectly aim at accelerating Indonesia's economic growth have been implemented, including:

a. Infrastructure development programs, particularly the national strategic program. The program is designed to address infrastructure deficits that have been constraining economic growth. Indonesia faced significant infrastructure deficits due to insufficient investments and inadequate asset management in the past. To support annual economic growth of 6%–8% (as set in the government's 2015–2019 development plan), infrastructure expenditure needs to grow by approximately 10% per year. However, infrastructure expenditure to date has only grown by around 3% per year. The National Strategic Program was initiated to address this. Today, there are at least 200 projects and 12 programs classified as national strategic projects with a total investment value of IDR5.481 trillion.

b. Investment regulation reforms through the Job Creation Law. The Job Creation Law, a series of laws passed by the Indonesian government in October 2020, was designed to simplify regulations, attract investments, and create jobs. The law is quite extensive in scope, covering labor regulations, environmental standards, and investment rules. The primary goal of this law is to facilitate business operations in Indonesia by simplifying regulatory requirements and reducing bureaucracy.

c. Improving the human capital quality is also necessary to boost economic growth. This is carried out through improvements in the Education and Health sectors. For the education sector, strategies include improving access to and enrollment in education; increasing community involvement in education development; improving teachers' professionalism; shifting learning approaches from expository

to a discovery learning approach; improving school culture; promoting a reading culture; enhancing proficiency in foreign languages and preserving local languages; improving vocational education; improving entrepreneurship education; and character education. In the health sector, the strategies taken include improving access to proper, high-quality, and equitable healthcare services for all population and every age group, socio-economic group, and all regions of Indonesia.

d. The Indonesian government recognizes that achieving sufficient economic growth to become a high-income country by 2045 requires a transformation of Indonesia's economy. Through this transformation, Indonesia needs to shift its main economic growth sources from being reliant on labor and natural resources to being productivity-based. To achieve this, the government has prepared an Indonesian transformation strategy that comprises improving human capital competitiveness, enhancing productivity in each sector of the economy, implementing green economy practices, digital transformation, domestic economic integration, and relocating the national capital.

The government has acknowledged the weakness of Indonesia's current economic growth pattern, which relied too much on natural resources and unskilled labor. As a response, the government is preparing a strategy to transform Indonesia's economy so that future economic growth relies more on productivity. Various studies, such as those from the Asian Productivity Organization (APO), indicated that Total Factor Productivity (TFP) growth in Indonesia from 1970 until the end of 2000s has been stagnant. Indonesia's ranking in the Global Innovation Index has been relatively low. In 2022, Indonesia's ranking remained at 75, below Malaysia, Thailand, India, Vietnam, and the Philippines.

One of the main strategies used is structural transformation through re-industrialization. It has historically been considered a successful strategy that propelled Indonesia to achieve high growth in the 1980s and 1990s. Unfortunately, the future challenge of industrialization will be relatively more demanding, partly due to the increasing prevalence of automation through Industry 4.0, reducing the demand for the kind of labor where Indonesia holds a comparative advantage. Globally, signs of premature deindustrialization are evident in many developing countries. Several studies categorized Indonesia as a country experiencing stalled industrialization.

Various literature on economic growth theory stated that a country's ability to sustain high economic growth over a considerable length of time is influenced by four factors: luck, culture, geography, and institutions. Institutions are deemed the most crucial factor because they are relatively easier to change. One of the most significant challenges in achieving sustained economic growth for Indonesia is institutional improvement. Within institutions, factors such as the rule of law, governance quality, and control of corruption are pivotal. Indonesia still faces numerous obstacles in these areas that need immediate attention.

Achievement Strategies for Percentage of MSME with Access to Financial Services

Various strategies, policy directions, and key programs currently in place to accelerate MSME access to financial services are as follows:

a. The government, through various programs under the National Economic Recovery (PEN) umbrella, provides stimulus in the form of Interest Subsidies for the Ultra Micro sector. In this program, MSMEs receive facilities to temporarily defer payment of principal installments and subsidies for interest payments for a specified period on loans obtained through various programs such as Rural Banks (BPR), Small Business Loans (KUR), Umi, Mekaar, Pegadaian, Cooperatives, and

others. The program covers approximately 53.4 million accounts. Additionally, there is also a MSME Interest Subsidy program where the government ensures that the distribution scheme is right-targeted and well-governed. Borrowers who receive such facilities must meet certain criteria, such as having a specific loan ceiling, not being on a blacklist, and having a good credit quality reputation before COVID-19.

b. Also under the PEN umbrella is the restructuring of MSME loans and additional working capital loans. To support these initiatives, the government placed funds in the banking sector.

c. Presidential Regulation (Perpres) No. 114 of 2020 on National Strategy for Inclusive Finance (SNKI/*Strategi Nasional Keuangan Inklusif*) is also aiming to provide access to capital and development support for Micro and Small Businesses (MSEs). Strategies include increasing access to formal financial services, enhancing financial literacy and consumer protection, expanding the reach of financial services, strengthening access to capital, improving digital financial service products, and enhancing the integration of inclusive economic and financial activities, at least through digital financial services.

The strategy of improving access to financial services for MSMEs that promotes the adoption of digital technology is the right strategy. Indonesia has a high level of internet adoption, with internet penetration in the country projected to reach 83% by 2026.

A rapidly growing FinTech innovation is the QRIS (Quick Response Code Indonesia Standard), developed by Bank Indonesia in 2019. By offering interconnectivity and interoperability in a safe transaction environment, the system is expected to encourage 65 million MSMEs to adopt noncash payment systems and simultaneously increase financial inclusion for MSMEs.

Even so, financial inclusion for MSMEs in Indonesia remains challenging due to factors such as low financial literacy and banks' perception of the MSME sector as risky and low-return due to a lack of collateral, resulting in high-interest rates.

<u>Achievement strategies for reducing unemployment and increasing the competitiveness of the workforce</u>

The level of unemployment, including open unemployment, can be reduced through various policies directly related to employment and indirectly related policies, such as strategies to increase job opportunities through economic growth.

Policies aimed at increasing the overall economic growth (see above) generally also contribute to reducing unemployment, including open unemployment. These include the development of strategic infrastructure, improvement in issuing business permits, and other measures. Downstream strategies in the mining sector that increase added value in Indonesia also have the potential to reduce unemployment, especially if the focus is not only on capital absorption but also on job creation.

Meanwhile, policy direction from the Ministry of Manpower for job creation includes improving the competitiveness of the workforce, especially through the Indonesian National Work Competency Standards (SKKNI/*Standar Kompetensi Kerja Nasional Indonesia*) certification. In addition to certification, the government is also carrying out vocational education and training reforms through Presidential Regulation No. 68 of 2022 on "Revitalizing Vocational Education and Vocational Training." The objective of revitalizing vocational education through this regulation is to create competent and entrepreneurial vocational human resources. There are six scopes in the vocational education and training revitalization as mandated by the regulation, namely:

(a) Designing a Labor Market Information System to help educational units understand the required competent labor. (b) Administering a competency-based, with link and match, vocational high school education, and Center of Excellence Vocational High Schools. (c) Administering vocational higher education based on link and match, and a dual system. (d) Administering competency-based skills training and courses, future jobs, skilling, reskilling, and upskilling. (e) Ensuring the quality of vocational education and training, competency certificates, and accreditation of graduate certificates. (f) Enhancing the role of stakeholders, including Ministries/Agencies, subnational governments, the Indonesian Chamber of Commerce and Industry (KADIN), and the National Professional Certification Agency (BNSP).

In addition to revitalizing vocational education, the government also facilitates labor mobility by strengthening the Labor Market Information System (LMIS). LMIS functions for job matching; career guidance and skills; Government support: services to help individuals and practitioners identify and access potential government programs; Labor Market Intelligence: information services that provide comprehensive information to the public, policymakers, and researchers about labor market achievements and the impact of various policies and programs, with the aim of supporting education and training investment and policy formulation. Strengthening the Labor Market Information System (LMIS) is an essential part of Indonesia's efforts to build a skilled and competitive workforce.

Moreover, the government also carries out initiatives to increase the number of new entrepreneurs through business incubation. Productivity in this regard also depends on innovations generated through research and development. One of Indonesia's challenges in this regard is how to create a conducive research ecosystem for innovation development. Currently, Indonesia's expenditures for R&D are relatively low, and much still needs to be done to improve the research ecosystem.

Achievement Strategies for Tourism Contribution to GDP and Foreign Tourist Numbers

Various strategies, policy direction, and programs within the tourism sector to increase the number of foreign tourists and enhance the contribution of the tourism industry to GDP are:

a. Priority-based development of comprehensive, integrated, and sustainable tourist destinations, including diversifying into high-value added tourism products.
b. Strategic partnership-based tourism marketing, including enhancing the image of Indonesian tourism and leveraging technology.
c. Developing an integrated tourism industry by focusing on 13 tourism business sectors.
d. Creating excellent and competitive tourism human resources by optimizing the institution and curriculum of tourism vocational education and training, enhancing competency certification, and strengthening tourism communities and institutions.
e. Boosting domestic creativity, including through increased protection for creative outputs and intellectual properties.
f. Encouraging high-quality research, innovation, technological adoption, and tourism policies.
g. The government is developing National Strategic Tourism Regions (KSPN/*Kawasan Strategis Pariwisata Nasional*), which are already major tourism regions or have the potential for national tourism development, influencing economic, social, and cultural growth, natural resources utilization, environmental sustainability, and defense and security. The government has prioritized 10 KSPNs, which are Lake

Toba (North Sumatra), Bromo-Tengger-Semeru (East Java), Borobudur (Central Java), Wakatobi (Southeast Sulawesi), Lombok (West Nusa Tenggara), Tanjung Kelayang (Bangka-Belitung), Labuan Bajo (East Nusa Tenggara), Morotai (North Maluku), Manado-Likupang-Bitung (North Sulawesi), and Raja Ampat (West Papua).

h. The government is also implementing sustainable tourism through three strategies. The first is developing sustainable tourism destinations through various training activities for tourism actors and local communities on sustainability aspects. The second is setting up Sustainable Tourism Observatories (STO) in line with the principles of United Nations World Tourism Organization (UNWTO). Indonesia currently has several STOs, including in Pangandaran, West Java, in Sleman, Central Java, in Kampung Senggigi Villages, West Nusa Tenggara, in Kampung Sanur, Bali, and in Samosir area, North Sumatra.

The strategy of diversifying tourist destinations, to create many "new Balis", is the right strategy as foreign tourists have traditionally concentrated on a limited number of destinations in Indonesia. This tourism development strategy aligns with future challenges for the Indonesian economy. First, the tourism sector offers an alternative to industrialization, fostering economic growth as developing countries strive to revitalize industrialization. Second, the broad-based, multisectoral, and inclusive nature of the tourism sector is crucial for achieving more balanced economic growth across regions. The tourism sector is also consistent with the concept of a multi-pronged development, being an industrial policy linked to comparative advantage.

Challenges, opportunities, and room for improvement

Competition

The biggest challenge facing tourism development in Indonesia is fierce competition from other countries. Neighboring countries like Thailand and Malaysia are aggressively enhancing their tourism sectors. Additionally, the substandard management of tourist destinations and the lack of high-quality human resources pose significant challenges.

Improving institutional quality

Sustaining high economic growth over an extended period requires robust institutional quality. Addressing the infrastructure deficit is crucial, but an equal focus should be placed on rectifying institutional shortcomings. Developmental efforts must encompass both physical and non-physical aspects, including institutional structuring, law enforcement, and corruption reduction.

Sustained high economic growth for a significant length of time will only happen in economies with good institutional quality. Therefore, improving institutional quality, such as increasing competition, reducing rent-seeking activities, reducing corruption and red tape, needs to become growth-enhancing policies.

Research and innovation ecosystem

Economic transformation hinges on fostering a conducive research and innovation ecosystem. Thus, there are needs for (a) improving regulatory quality for science and technology institutions, such as consistent research and innovation policies along with improvements to research governance as well as financial sector regulations to fund R&D; (b) reforming institutional administration, such as integrating intermediation agencies into a system that translates inventions into innovations; (c) improving research accountability mechanisms; (d) improving the quality of human resources on research,

such as creating a critical mass of Science and Technology Human Resources, with the indicator being 30% hold post-graduate degrees; (e) improving incentives and funding, such as through research endowment funds, merit-based competitive research funding.

Improved job quality and anticipation for automation

The strategy to reduce open unemployment should be aligned with the general strategy to increase quality jobs. The proportion of formal workers should continue to be increased. Job automation should be anticipated with policies in education and training sectors.

Holistic tourism development

Tourism development goes beyond infrastructure and opening up new tourist areas. It also requires cultural development. Long-term planning involving societal cultural change is vital. Developing high-value tourism regions that are accessible only to upper-class groups contradicts the tourism sector's role as the backbone of the Sustainable Development Goals (SDGs), which emphasizes the importance of leaving no-one behind.

The predominance of low skills and wage gap

The prevailing composition of low-skilled workers in Indonesia's employment sector poses risks in the face of rapid technological advancements. Automation, digitalization, and artificial intelligence threaten jobs that rely on such skills. Addressing this challenge requires a strategic focus on upskilling the workforce.

Moreover, tackling the considerable wage gap between low and high-skilled workers, as well as gender disparities, is equally paramount to foster a fair and inclusive labor market.

The gender wage gap can hinder economic growth, primarily due to indirect discrimination leading to lower female labor participation than optimal. This directly impacts efficiency. Additionally, the potential talent of women remains underutilized as they are discouraged from entering the workforce.

I. Goal 9 Industry, Innovation, and Infrastructure

Goal 9 of SDGs is to Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation with the following targets:

- Target 9.1: Develop quality, reliable, sustainable, and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
- Target 9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.
- Target 9.3: Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.
- Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.
- Target 9.5: Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and

development workers per 1 million people and public and private research and development spending.

- Target 9.a: Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological, and technical support to African countries, least developed countries, landlocked developing countries, and small island developing states.
- Target 9.b: Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.
- Target 9.c: Significantly increase access to information and communications technology, and strive to provide universal and affordable access to the internet in least developed countries by 2020.

There are four indicators to be discussed for Goal 9, namely:

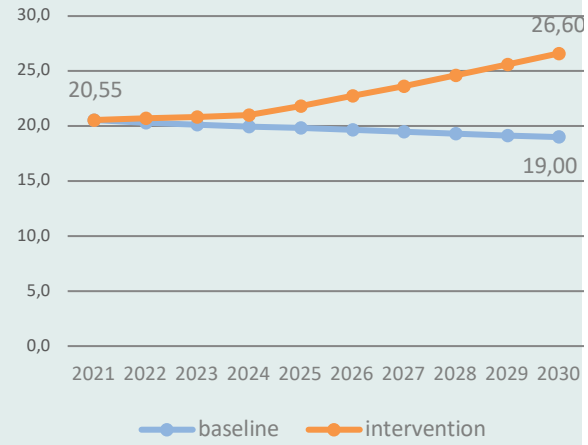
a) Indicator 9.2.1* Proportion of manufacturing value-added to GDP and per capita
b) Indicator 9.2.2* Proportion of employment in the manufacturing industry sector
c) Indicator 9.5.1* Proportion of government research budget to GDP
d) Indicator 9.c.1* Proportion of population covered by mobile broadband

1. Target Achievements for Goal 9

Proportion of manufacturing value-added to GDP

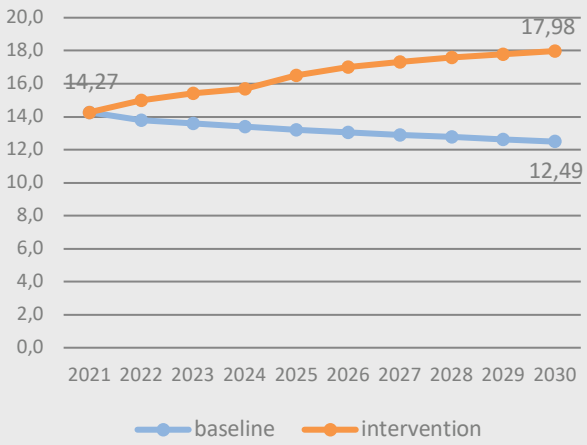
The value added by industries indicates industrial progress linked to technological advancement and industrial complexity. In line with targets in the National Medium-Term Development Plan (RPJMN) and projections by the Directorate of Industry, Tourism, and Creative Economy, the proportion of manufacturing value-added to GDP is set at 21% and 26.6%, respectively by 2024 and 2030. A significant gap exists between the projected baseline scenario and the target to be achieved. For instance, the baseline projection differed 0.38% from the target in 2022, with the gap continuing to grow and reach 7.60% by 2030. Therefore, interventions in the form of appropriate and adequate industrial policies are necessary to achieve the targets.

Figure 2.54 Indicator 9.2.1* Proportion of manufacturing value-added to GDP (%)



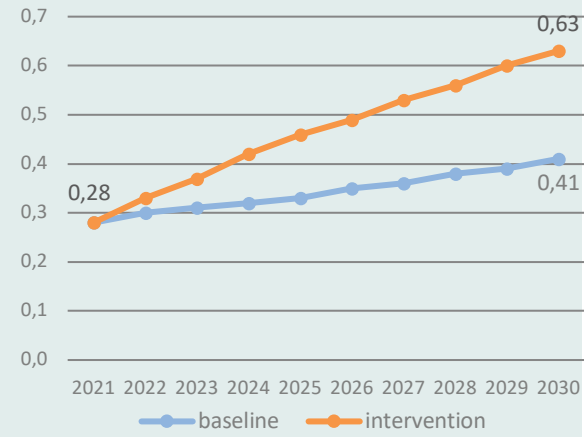
Note: Baseline and intervention projections use the exponential model. The 2030 intervention target refers to the RPJPN target.

Figure 2.55 Indicator 9.2.2* Proportion of employment in the manufacturing industry sector (%)



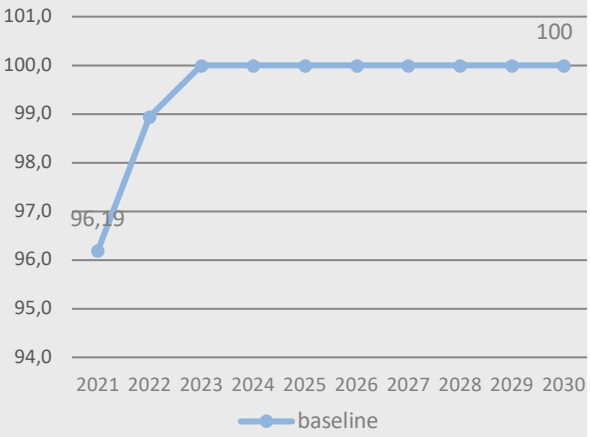
Note: Baseline projection uses the logarithm model and intervention projection refers to the logarithm model.

Figure 2.56 Indicator 9.5.1* Proportion of government research budget to GDP (%)



Note: Baseline projection sourced from the Indonesia Economic Transformation Team, Bappenas, and intervention projection refers to the linear model.

Figure 2.57 Indicator 9.c.1* Proportion of population covered by mobile broadband (%)



Note: Baseline projection uses the logarithm model and intervention projection is not needed as target will reach 100% by 2023.

Proportion of employment in the manufacturing industry sector

The manufacturing industry sector is one of the largest employers, offering higher wages compared to the agricultural sector. In 2021, the proportion of employment in the manufacturing industry sector reached 14.27% and is targeted to reach 15.7% and 17.98%, respectively by 2024 and 2030. The target can be achieved if the targeted scenario for the proportion of manufacturing value-added to GDP is realized.

Proportion of government research budget to GDP

Technological advancement and increased industrial complexity can be attained through research and development. The proportion of government research budget to GDP remains relatively small at 0.28% in 2021. It is targeted to reach 0.42% and 0.63%,

respectively by 2024 and 2030. The increase in the proportion of research budget in Indonesia is projected to occur through government policies that expand research budgets and fiscal incentives for private sector engaging in research and development. The gap between the target and baseline will only widen without adequate policies and fiscal incentives.

Proportion of population covered by broadband

In 2021, as much as 96.19% of the population was covered by broadband, with a target of reaching 100% by 2023. Policy interventions to improve broadband network services throughout Indonesia can be implemented especially in underdeveloped, frontier, and outermost regions (3T).

2. Achievement Strategies for Goal 9

To drive the achievement of each target indicator, several policies, strategies, and programs are required, including:

a. To achieve the targeted proportion of manufacturing value-added to GDP, it is necessary to (i) develop raw materials/raw minerals-processing industries and industrial downstreaming; (ii) foster creative industries or innovation-based industries to add value to products in various industrial sectors; (iii) reduce dependence on imported products, especially raw materials and capital goods, through import substitution incentives.
b. To achieve the targeted proportion of employment in the manufacturing industry sector, it is necessary to (i) upskill and reskill the workforce to meet industry needs, including those of Industry 4.0, and (ii) enhance workforce skills by linking curriculum in vocational schools and higher education institutions with the manufacturing industry sector.
c. To achieve the targeted proportion of government research budget to GDP, it is required to (i) gradually increase research funds through BRIN or ministries/agencies, and (ii) enhance the implementation of fiscal incentives (Regulation of the Minister of Finance No. 128/PMK.010/2019) by offering up to a 300% tax reduction for companies engaging in research and development activities.
d. To achieve the target proportion of population covered by broadband, it is necessary to (i) develop evenly distributed and improved infrastructure throughout Indonesia, including both fixed and mobile broadband networks, by simplifying permits and encouraging public-private partnerships to accelerate infrastructure investments at competitive prices; (ii) enhance literacy and adoption of information and communication technology (ICT) among the population; (iii) increase the government's role as a facilitator, enabling the use of ICT in various governmental (e-government), educational (e-education), logistical (e-logistics), healthcare (e-health), and other essential activities.

In this section, strengths and weaknesses that need attention when implementing policies, strategies, and programs to achieve each indicator are analyzed.

Proportion of manufacturing value-added to GDP

a. In terms of raw materials processing and industrial downstreaming, Indonesia's strengths are in abundant natural resources ready for processing, with processed products ready for downstreaming and to be absorbed by the domestic and export markets. Challenges in downstreaming include (i) the need for skilled human resources in terms of both quantity and quality; (ii) the need for international

collaboration in both domestic and export markets; (iii) the need for appropriate incentives for the industry; (iv) challenges arising from objections by other countries that have long imported raw materials from Indonesia.

b. In the development of creative or innovation-based industries, the majority of businesses in this space is dominated by micro and small industries. However, the predominant industrial output comes from medium and large enterprises. Thus, although the generally low industrial innovation in medium and large enterprises should continue to be encouraged, greater industrial added value can be fostered through micro and small-scale businesses. Challenges in building innovation-based industries include issues with infrastructure and technological support, one of which is the uneven and lagging distribution of information and communication technology, especially in 3T (underdeveloped, frontier, and outermost) regions.

c. The circumstances are similar to industrial downstreaming, where import substitution has advantages in terms of both natural resource inputs and a large domestic market. Challenges in import substitution typically revolve around incentives, meeting the quantity and quality standards of products if they are to be absorbed by domestic companies that previously used imported products.

Proportion of employment in the manufacturing industry sector

a. With an abundant workforce and the ongoing technological disruptions, there is a significant potential for workforce upskilling and reskilling programs in Indonesia. However, the challenge lies in the workforce's ability to adapt to new skills and the sustainability of new jobs.

b. The linkage and alignment of curriculum between the industries and higher education institutions or vocational schools are continually encouraged and facilitated by the government. This includes fiscal incentives for the industries if they support vocational schools, through tax reduction incentives of up to 200% (Regulation of the Ministry of Finance No. 128/PMK.010/2019). The current challenge lies in the commitment of the industries themselves to assist these schools, including absorbing their graduates. Currently, there is a significant gap between the number of vocational school graduates and their absorption into the workforce. This is partly due to the fact that the curriculum in vocational schools or higher education institutions is not yet specific enough for a particular industry. Finally, the equipment in vocational schools remains inadequate and tends to be outdated.

Proportion of government research budget to GDP

The government is currently committed to increase research funding in Indonesia. The government has a research roadmap through agencies like BRIN and ministries/agencies, but the roadmap needs to be integrated into planning so that the increased research funding can be aligned with the annual research demand. The fiscal incentive for research activities by companies, based on the Regulation of the Minister of Finance No. 128/PMK.010/2019, is open to all companies that apply. The implementation challenge usually revolves around bureaucratic issues in the evaluation process for tax reduction claims made by companies.

Proportion of population covered by broadband

a. Given that many areas remain out of reach of broadband networks, infrastructure development opportunities for fixed and mobile broadband network services are still available in Indonesia. The challenge is the expensive development costs of broadband infrastructure, especially fixed broadband networks.

b. Services for various community activities, both public and private, have started to use ICT or digital, so it is hoped that people will automatically gain digital literacy. The challenge in literacy and use of ICT is that there is still little use of ICT in community economic and social activities, especially in underdeveloped, frontier, and outermost (3T) regions. Furthermore, people who live in areas that do not have or have low quality broadband networks, are still having difficulties in using ICT for their daily activities.

Based on trend analysis, gaps, policy identification, strategies, programs, strengths, and weaknesses, these are the recommendations for enhancing various indicators:

a. To increase the proportion of manufacturing value-added to GDP, it is necessary to (i) provide adequate human resources, both in quantity and quality to support the use of technology in creating value-added products that can be absorbed by domestic and international markets; (ii) provide incentives for processing raw materials and industrial downstreaming as well as import substitution; and (iii) improve infrastructure and provide adequate technological support, including information and communication technology, to support innovation-based and value-added industries.
b. Increasing the proportion of employment in the manufacturing industry sector is achievable through (i) effective planning in the upskilling and reskilling process with guaranteed new job placements in the manufacturing industry sector; (ii) pushing for a streamlined bureaucratic process in claiming fiscal incentives for companies collaborating and supporting vocational schools; and (iii) supporting vocational schools in replacing outdated facilities.
c. Achieving the targeted proportion of government research budget to GDP can be done through (i) strengthening a dynamic research roadmap tailored to research needs along with the funding and (ii) improving bureaucracy so that companies involved in research and development can easily claim fiscal incentives.
d. Achieving the target proportion of population covered by broadband can be done through (i) simplifying and facilitating government processes to obtain permits for broadband network infrastructure construction; (ii) utilizing public infrastructure that can be used by private entities in providing broadband networks; and (iii) employing ICT in both public and private services.

J. Goal 10 Reduced Inequality

Goal 10 of SDGs is to Reduce Inequality Within and Among Countries with the following targets:

- Target 10.1: By 2030, progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average.
- Target 10.2: By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.
- Target 10.3: Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies, and practices and promoting appropriate legislation, policies, and action in this regard.
- Target 10.4: Adopt policies, especially fiscal, wage, and social protection policies, and progressively achieve greater equality.
- Target 10.5: Improve the regulation and monitoring of global financial markets and institutions, and strengthen the implementation of such regulations.

- Target 10.6: Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions.
- Target 10.7: Facilitate orderly, safe, regular, and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies.
- Target 10.a: Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements.
- Target 10.b: Encourage official development assistance and financial flows, including foreign direct investment, to states where the need is greatest, in particular least developed countries, African countries, small island developing states, and landlocked developing countries, in accordance with their national plans and programs.
- Target 10.c: Increase the use of financial services by workers.

Indicators discussed in this roadmap are:

a) Indicator 10.1.1* Gini Ratio
b) Indicator 10.4.1.(b) Proportion of workers covered by the social insurance for employment program: Formal Workers
c) Indicator 10.4.1.(b) Proportion of workers covered by the social insurance for employment program: Informal Workers

1. Target Achievements for Goal 10

Based on historical data trends of the Gini Ratio, which stood at 0.384 in the latest year (2022), it is estimated that under the business-as-usual (BAU) scenario, the ratio will be at 0.372 by 2030. Meanwhile, under the intervention scenario, the Gini Ratio is hoped to drop to 0.363.

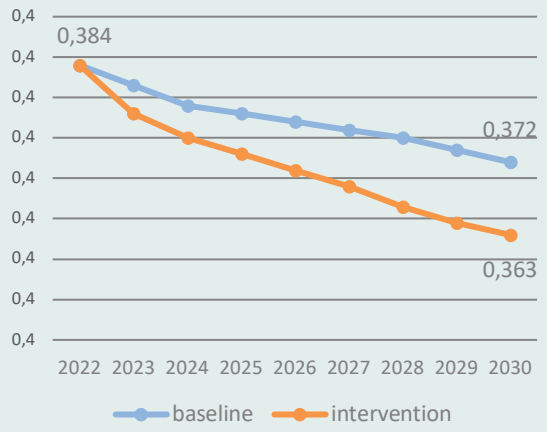
The decreasing trend of Gini Ratio has been occurring since 2015. This is a reversal of the previous trend, where it has consistently risen since the early 2000s. However, it's important to note that in the broader context, the current Gini Ratio is still relatively high compared to its historical trends. Throughout the 2000s, from 2002 to 2013 to be precise, Indonesia's Gini Ratio increased by 19.6% or 6.5% annually. This was the highest increase compared to other countries during the same period in the World Income Inequality Database by UNU/WIDER. Another significant point is that inequality in Indonesia is calculated not based on income but on expenditure, thus not taking into account considerable savings by the wealthy, leading to underestimation of income inequality. Despite this, the declining trend in inequality since 2015 should be appreciated, but caution is still needed because this downtrend might be cyclical due to the weakening of commodity booms, and also fundamental trends such as strong urbanization and growing tertiary sectors that might still contribute to increased inequality in the future.

Meanwhile, the difference between Gini Ratio in the BAU and intervention scenarios is within the achievable range through various policies already implemented. The expectation is that strengthening various existing programs should be enough to meet the target.

Another important indicator that will be discussed in Goal 10 is workers covered by employment social security. For that matter, an important indicator that needs to be monitored is the proportion of workers covered by the social insurance for employment program, both for formal and informal workers (1.3.1(b).

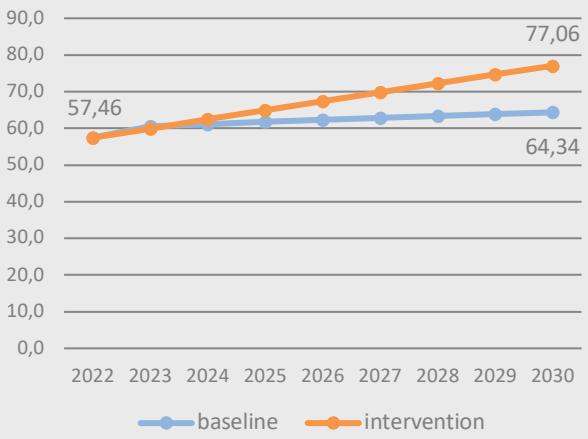
Under the BAU scenario, the proportion of workers covered by the social insurance for employment program for formal workers is estimated at 64% by 2030, increasing from about 57% in 2022. With targeted policy intervention, the number can be raised to 77% by 2030.

Figure 2.58 Indicator 10.1.1* Gini Ratio (Ratio)



Note: Baseline projection uses the logarithm model and intervention projection refers to the logarithm model.

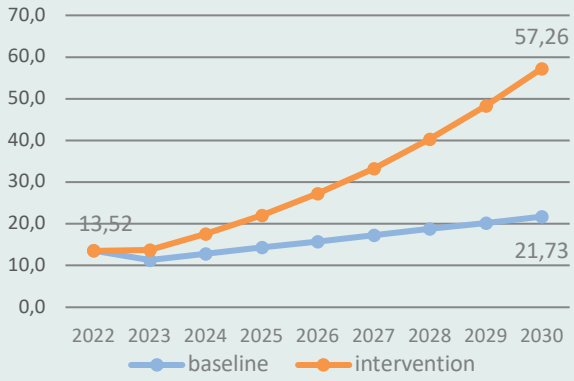
Figure 2.59 Indicator 10.4.1.(b) Proportion of workers covered by the social insurance for employment program: Formal Workers



Note: Baseline projection uses the linear model and baseline projection uses the power model.

Meanwhile for informal sector workers, under the BAU scenario, it is estimated to increase from 13.5% in 2022 to 22% by 2030. With policy intervention, coverage is expected to increase to 57% by 2030.

Figure 2.60 Indicator 10.4.1.(b) Proportion of workers covered by the social insurance for employment program: Informal Workers



Note: Baseline projection uses the linear model and baseline projection uses the power model

2. Achievement Strategies for Goal 10

To identify various policies or interventions to reduce inequality, we can divide them into two categories. The first category is whether the policy targeted pre-redistribution or post-redistribution income. Although headline inequality in Indonesia is measured using per capita consumption, thus making it a post-redistribution indicator, inequality is also strongly influenced by pre-redistribution income. The distribution of

pre-redistribution income (income before direct taxes or transfers) is purely influenced by market outcomes, in this case how each individual obtains income from ownership of production factors used in production processes. These production factors can be the labor used, or non-labor assets (land, capital, etc.). Meanwhile, post-redistribution inequality is inequality based on the distribution of income after subtracting various taxes and transfers from the income of each individual.

The second category of policies or interventions to reduce inequality is divided by who in the distribution is the target of the policy (redistribution). The target of the policy could be the low-income group, in this case the aim is to increase their income, or the high-income group, in this case the aim is regulate their income. Simultaneously, this intervention will result in both pre-redistribution and post-redistribution inequalities being more evenly distributed.

Hence, policy interventions in reducing inequality can be categorized into four groups, which are:

a. Those that aim to influence direct market outcomes or pre-redistribution income distribution by targeting lower-income (or poor) groups. Examples of this policy are the development of agricultural infrastructure, support for MSMEs, revitalization of traditional markets, or equal distribution of opportunities such as scholarships for the poor. It could also be industrial policy to support certain industries, such as fiscal incentives for labor-intensive industries and so on.
b. Those that aim to influence direct market outcomes, but the target is the higher-income (rich) group of people. Examples of this policy are policies that limit the development of capital-intensive sectors, for example through industrial zoning, or fiscal disincentives, or negative lists of investment in certain sectors. Trade policies, licensing regulations to discourage sectors that tend to increase inequality for the rich also fall into this category.
c. Those that aim to redistribute income. This intervention group collects taxes from higher-income groups to be redistributed to the poor, for example a progressive (direct) income tax policy. Indirect taxes on luxury goods also fall into this category, as do wealth taxes or inheritance taxes.
d. Those that aim to also redistribute income but in the form of transfers or subsidies to lower-income groups. Some policies, such as social protection or social security, fall into this category.

Table 2.1 below is an attempt to categorize several policy interventions in Indonesia into the four defined categories above.

Table 2.1 Identification and groupings of policy interventions to reduce inequality

Group A **(Pre-redistribution, lower-income groups)** ▪ Government Scholarship for Poor Students (Bidikmisi) ▪ Smart Indonesia Card (KIP) ▪ National strategy to address stunting ▪ Village fund ▪ Fertilizer subsidies ▪ Support for MSMEs under PEN (interest subsidies, placement of government funds, credit guarantee, president's aid for productive activities, cash transfers for street vendors/sundry stalls, government-borne income tax/DTP, minimum electricity payment/financial inclusion) ▪ Infrastructure Development: irrigation, clean water and sanitation, traditional markets.	**Group B** **(Pre-redistribution, upper-income groups)** ▪ Business competition oversight (for example, anti-monopoly policy through KPPU) ▪ Restrictions in the mining sector, such as export restrictions or downstreaming. ▪ Reduce rent-seeking (bureaucracy reforms, corruption prevention and prosecution) ▪ Address financial crimes, such as money laundering.
Group C **(Post-redistribution, lower-income groups)** ▪ Conditional Cash Transfers (PKH) ▪ Direct Cash Transfers (BLT) ▪ Staple Food Card Program (BPNT) ▪ Pre-Employment Card Program (Wage Subsidy) ▪ Job-loss insurance ▪ Energy subsidy (particularly electricity) ▪ Government-Subsidized National Health Insurance (PBI) ▪ Socio-Economic Registration (Regsosek)	**Group D** **(Post-redistribution, upper-income groups)** ▪ Progressive individual income tax tariffs ▪ Increase to taxable income threshold (PKP) For example from IDR4.5 million/month to IDR5 million/month (January 2023) ▪ Tax on Luxury Goods Sales (PPnBM)

In general, quite a lot of interventions to reduce inequality in Indonesia have been identified (see Table 2.1). The existence of these programs, as well as the trends in their magnitude, appears to be in line with the trend of decreasing inequality that has occurred recently. Some interventions have also been studied for their impact on inequality. For example, a study estimated the effects of various social expenditures (BLSM, PKH, RASKIN, BSM, BPJSPBI) on inequality in Indonesia. The results show that these five social protection programs have reduced inequality nationally by 3.7% (as measured with the Gini Ratio). The impact of PKH in 2016 was quite pronounced, reducing the Gini Ratio from 0.410 to 0.403, or a decrease of 1.5%. Another more recent study indicated that during COVID-19 in March 2020, inequality could be mitigated from 0.403 to 0.374 through various social protection policies.

The inclination, at least in terms of political will, towards economic equalization is indeed becoming stronger. This is also consistent with global trends. In Indonesia, the Gini Ratio has become an integral part of the indicators used as benchmarks for budgetary policies each year. The political will has demonstrated a strong desirability for more equitable development. In addition, equity is also an essential element in the Sustainable Development Goals (SDGs) because, aside from having its own Goal, every SDG achievement has an element dedicated to reduce the development gap, which

means that equity is mainstreamed into goals other than SDG 10. Moreover, the most important principle of the SDGs is “leaving no one behind (LNOB).”

However, there are still many challenges ahead. Such as:

a. Inequality is relative. The various interventions summarized in Table 2.1 above have a “progressive” nature, which means they reduce income inequality. However, these interventions must compete with other factors that have the opposite effects, including policy interventions that are “regressive” or have the potential to increase inequality. Which factor is stronger will determine the movement of our inequality trend. The deteriorating fight against corruption (indicated by a decline in our CPI index) that fosters rent-seeking, for example, will have the effect of increasing inequality.
b. Despite the rising trend in both coverage and benefits, the proportion of social protection programs in the total budget remains low based on international standards. This is caused by, apart from the political will, low fiscal space and more urgent alternative use for the funding, for example to build infrastructure.
c. Subsidy reforms, for example fuel subsidy reforms, continue to be hampered by various political and social obstacles, even though many of these subsidies are still enjoyed by higher-income groups in society. Likewise, the flawed database of social security beneficiaries means that the effectiveness of these programs is not optimal.
d. A population registration system that is yet to be integrated with taxation makes it difficult to truly suppress tax evasion.
e. Reducing rent-seeking activities that often occurred in the form of corruption, collusion, and nepotism, continues to be a challenge.

Recommendations to ensure that equity can be achieved include the following:

a. Continuously and with sufficient frequency, evaluate all government intervention programs related to reducing inequality so that successful ones can be scaled up, and less successful ones can be replaced with other programs. Scientific analytical tools are needed to test the impacts of these interventions.
b. Encourage all government policies, especially those with significant budgets, to undergo benefit incidence analysis. This way, the beneficiaries of each policy can be monitored and the impacts of such policy on inequality can be determined.
c. Gradually shift indirect subsidy programs (goods), such as fuel subsidies, to direct subsidies for a more targeted assistance.
d. Modern states that provide sufficient social protection to their citizens typically rely on progressive direct taxes for redistribution, rather than indirect taxes like VAT. Therefore, we must strive harder to optimize personal income taxes. This can be gradually started by integrating the population registration and tax systems. Reforming the Social Protection System through Socio-Economic Registration (Regsosek) could be a starting step.
e. Continuous and more intensive institutional improvements are necessary to reduce the economy’s reliance on rent-seeking. This includes the need to strengthen institutions such as the Corruption Eradication Commission (KPK), and law enforcement agencies (National Police, Public Prosecutor’s Office, Judiciary) should continue to be reformed.

Equally important is the strategy for labor protection. Improvements to the provision of employment insurance/social security, both for formal and informal workers, are currently ongoing. Additionally, the contribution of the private sector in ensuring

their employees are covered by employment insurance is also a target of government programs.

K. Goal 11 Sustainable Cities and Communities

Goal 11 of SDGs is to Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable with the following targets:

- Target 11.1: By 2030, ensure access for all to adequate, safe, and affordable housing and basic services and upgrade slums.
- Target 11.2: By 2030, provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities, and the elderly.
- Target 11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries.
- Target 11.4: Promote and safeguard the world's cultural and natural heritage.
- Target 11.5: By 2030, significantly reduce the number of deaths and the number of people affected, and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, with a focus on protecting the poor and people in vulnerable situations.
- Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality, including city waste management.
- Target 11.7: By 2030, provide safe, inclusive and accessible, green and public spaces, in particular for women and children, the elderly, and persons with disabilities.
- Target 11.a: Support positive economic, social and environmental links between urban, peri-urban, and rural areas by strengthening national and subnational development planning.
- Target 11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels.
- Target 11.c: Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials.

The indicator to be discussed in the roadmap is:

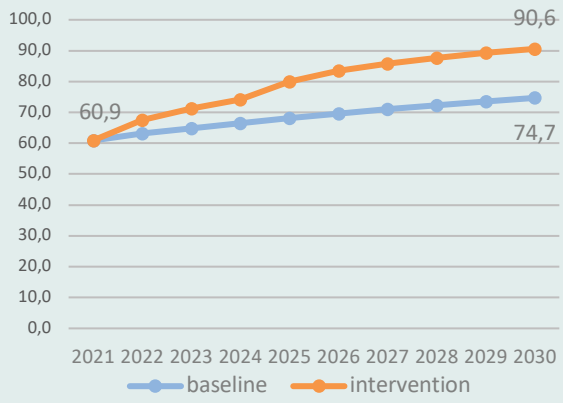
Indicator 11.1.1.(a) Proportion of households with access to adequate and affordable housing

1. Target Achievements for Goal 11

Indicator 11.1.1.(a) on the proportion of households with access to adequate and affordable housing has increased between 2015–2022. It was 47.99% in 2015, but has risen to 60.66% by 2022. However, the COVID-19 pandemic led to a slowdown in achieving this indicator due to budget reallocation. On the other hand, despite the national percentage increase, there are differences in improvements among expenditure groups. The highest increase in access occurred in the 1st decile, reaching 8% in the 2019–2021 period, while the values varied between 1.34% and 6.88% for the 2nd to 10th deciles. This indicates that the poorest group is the primary target beneficiaries from programs aimed at increasing access to adequate and affordable housing, thereby helping them achieve a better standard of living. Projections for indicator 11.1.1.(a) reveal a stark difference between the baseline projection (historical figures) and the intervention

projection. According to the baseline calculation, only 74.69% of households across Indonesia will have access to adequate, safe, and affordable housing by 2030, but with intervention, the figure increases to 90.57% of households. This means that medium and long-term policy interventions for adequate housing have significant impact in target achievements, even though they may not fully meet the SDGs target by 2030. The interventions undertaken can also be said to be on the right track due to the significant difference in target achievement compared to a business-as-usual approach. Nevertheless, additional interventions could be implemented to achieve or approach 100% target fulfillment. The COVID-19 pandemic could also affect the achievement of this indicator's target, but the extent of its impact remains uncertain.

Figure 2.61 Indicator 11.1.1.(a) Proportion of households with access to adequate and affordable housing (%)



Note: Baseline projection uses the logarithm model and intervention projection refers to the logarithm model.

2. Achievement Strategies for Goal 11

Providing access to adequate, safe, and affordable housing and settlements is one of the mandates in the 1945 Constitution, as stated in Article 28 H paragraph (1): every citizen has the right to live prosperously in both physical and spiritual health, to have a dwelling place, and to have a good and healthy living environment. Additionally, housing and settlements are one of the Human Rights as regulated in Law No. 39 of 1999 on Human Rights, as stated in Article 40: every person has the right to have a dwelling and to live a decent life. This mandate is then reflected in the Priority Goals of the 2005–2025 National Long-Term Development Plan (RPJPN), which aim to fulfill housing needs, along with supporting infrastructure and facilities for all people, supported by a long-term, sustainable, efficient, and accountable housing financing system, thereby realizing cities without slums. To achieve this condition, the 2020–2024 National Medium-Term Development Plan (RPJMN) establishes three main strategies: from the demand side (especially housing finance), from the availability/supply side (focusing on housing and land development policies), and from the supporting environmental side (particularly concerning regulations/policies and collaboration among stakeholders). For the implementation, 6 priority projects are established to support the provision of access to adequate and affordable housing and settlements, which are:

a. better facilitation for providing new homes;
b. better facilitation for housing finance;

c. expand facilitation to improve housing quality;
d. provision of infrastructure, facilities, and utilities for housing and settlements;
e. facilitation to improve building reliability standards and residential safety (Building Permits and Residential Certificates); and
f. facilitation to address slum settlements.

To achieve the goal of a city without slums, facilitation and interventions are implemented, such as revitalization, rejuvenation, and resettlement to address existing slums, as well as providing adequate and affordable housing integrated with basic infrastructure (including transportation systems) to prevent the emergence of new slum settlements. One of the strategic steps taken during implementation is to designate a major project: the construction of one million urban apartments in the 2020–2024 National Medium-Term Development Plan (RPJMN).

In the 2021–2024 National Action Plan for Sustainable Development Goals (RAN SDGs), these six priority projects are translated into housing and settlement area programs to provide access to habitable homes, each carried out by the Ministry of Public Works and Public Housing in designated locations.

Housing and settlement policies are also outlined in the Indonesia 2045 Vision. In the context of infrastructure development and equitable distribution, the government focuses on meeting the public's access to basic infrastructure by fulfilling housing, water supply, sanitation, irrigation, as well as protection against natural disasters and the impacts of climate change.

Generally, the written policies in the referenced documents are aligned and complement each other. However, there are still some aspects that need attention in housing and settlement provision, which can be seen from the demand side, supply/availability side, and the supporting environmental side (enabling environment).

<u>Demand side</u>

a. Government-implemented programs/activities have yet to serve every segment of the population, especially for non-fixed income households;
b. The primary and secondary housing financing markets are not yet well-established.

<u>Availability/supply side</u>

a. ineffective land management and utilization for housing (land availability, urban sprawl, and residential security);
b. mismatch between the available housing stock and the preferences or financial capabilities of the community;
c. prevention and eradication of slum settlements have not been carried out in an integrated manner.

<u>Enabling environment side</u>

a. lack of government intervention in encouraging developers to provide affordable urban apartments;
b. government intervention in the housing sector has not been fully integrated with the provision of settlement infrastructure, including drinking water, wastewater, waste management, and drainage;

In addition to the strengths and weaknesses directly related to housing demand and supply processes, there are also other matters that need to be considered, including:

a. lack of oversight to ensure the reliability of constructed or repaired buildings and compliance with spatial planning;

b. limited authority of subnational governments;
c. policies and strategies on adequate housing have not fully incorporated collaborative schemes among stakeholders to provide and revitalize adequate housing;
d. long-term housing policies have yet to acknowledge the vital role of the private sector and how they can be involved in providing better and more equitable housing;
e. lack of clarity in urban development strategies, leading to the concentration of economic activities/urban agglomeration.

The primary focus to achieve the SDGs target of 100% households with access to adequate housing by 2030 is reforming housing and urban policies. These reform efforts constitute a strengthening of a series of housing and settlement-related policies that have been implemented so far. Policy recommendations to facilitate the attainment of the target indicator 11.1.1.(a) related to adequate housing can be categorized into four main groups: policies related to demand, supply, supportive environments, and the macro urban context (at the local, subnational, and national scales).

From the demand perspective, some policy recommendations include:

a. Expansion of policies and programs for adequate housing to currently underserved household segments, especially those with informal/non-fixed income.
b. Utilization of alternative funding sources.
c. Optimization of the BP Tapera (Workers' Housing Benefit Fund) and expansion of the coverage of housing financing facilities.
d. Urban land and housing price control.
e. Preparing schemes and incentives to finance adequate housing in strategic locations, such as covering the Value Added Tax (PPN) for first homes up to a certain value.

From the supply perspective, the policy recommendations include:

a. Accelerating the implementation of land banks for public housing.
b. Structured provision of land (including ensuring habitation security) for housing for Low-Income Communities (MBR/*Masyarakat Berpenghasilan Rendah*).
c. Providing housing according to the characteristics of the community and the region.
d. Strengthening rental housing policies
e. Strengthening policies and programs for urban village planning along with habitation guarantees/security of tenure, including expanding high-rise village programs.
f. Providing access to affordable housing for individuals in the community who cannot afford housing built by the private sector.
g. Addressing slum settlements and inclusive urban rejuvenation efforts to realize a city without slums.

From the perspective of an enabling environment, some policy recommendations include:

a. Stimulate interests from developers to build and from the community to inhabit high-rise buildings, especially in urban areas;
b. Encouraging subnational governments to implement building reliability and security standards through the issuance of Building Construction Approval (PBG) and Certificate of Compliance (SLF);

c. Reviewing legislations and regulations related to the authority of the national and subnational governments;
d. Collaborating among stakeholders to provide integrated housing with basic infrastructure (including transportation systems).

Finally, in the macro urban context, the recommended policies are elaborated at three scales, i.e. city, subnational, and national:

On the city scale:

a. Compact city development, among other things, will create cities that are more efficient in land use and have the potential to increase the availability of space for adequate housing at affordable prices in strategic locations.
b. Provision of housing in accordance with spatial planning while considering disaster vulnerability and the impacts of climate change.
c. Housing densification and promoting mixed land use.
d. Controlling housing development to prevent the city from becoming increasingly sprawling.
e. Provision of basic infrastructure and transportation integrated with housing in the city center.
f. Encouraging capacity building of subnational governments to provide affordable and equitable housing.

On the subnational scale:

a. Pushing for basic infrastructure that spans across administrative regions
b. Pushing for collaborations and increased integrations of core city development plan and the surrounding cities

On the national scale:

a. Establishing new centers/concentrations, especially outside the islands of Java and Bali, to alleviate the pressure on urban land prices in cities on the islands of Java and Bali, particularly in major cities. With the increasing appeal of living outside Java and Bali, more people may choose to reside in areas beyond Java and Bali. Simultaneously, land acquisition for decent and affordable housing is relatively more cost-effective outside Java and Bali. This requires a legally enforceable National Urban Policy.
b. Establishing connectivity between metropolitan areas integrated with spatial planning, thus creating a reliable and effective National Urban System.

L. Goal 12 Responsible Consumption and Production

Goal 12 of SDGs is to Ensure Sustainable Consumption and Production Patterns with the following targets:

- Target 12.1 Implement the 10-Year Framework of Programs on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries.
- Target 12.2 By 2030, achieve the sustainable management and efficient use of natural resources.
- Target 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.
- Target 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international

frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

- Target 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.
- Target 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.
- Target 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities.
- Target 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.
- Target 12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production.
- Target 12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.
- Target 12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.

Indicators to be discussed in the roadmap are:

a) Indicator 12.3.1.(a) Percentage of Food Loss
b) Indicator 12.3.1.(b) Food Waste

1. Target Achievements for Goal 12

Target Achievements for Percentage of Food Loss and Food Waste

The target to be achieved globally is to halve per capita global food waste at the retail and consumer levels by 2030, and reduce food losses along the production and supply chains, including post-harvest losses.

The percentage of food loss is basically the contribution of food loss in the production, postharvest, and storage processes, as well as in the processing and packaging. Food waste is wasted food in distribution and marketing as well as in consumption.

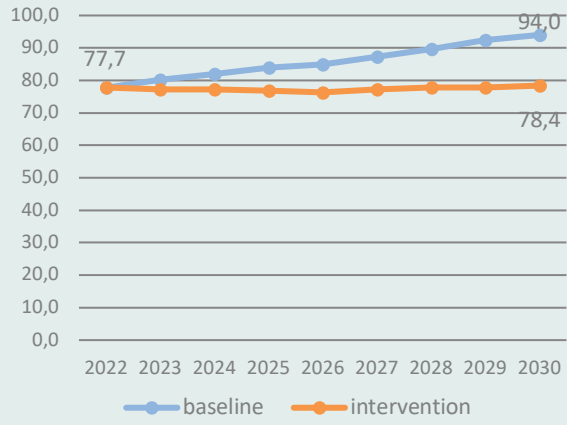
The percentage of food waste and food waste (FLW) indicator is monitored by referring to the global indicator, while Indonesia's metadata system is currently being developed. However, studies and modelling undertaken by Bappenas (Study of Food Loss and Waste in Indonesia, 2021) have established the trajectories of baseline data and interventions for FLW generation up to 2030. The baseline simulation for FLW shows an increasing trend from year to year where Indonesia's food loss and food waste generation per capita in 2022 reached 78 kg/capita/year and 89 kg/capita/year, respectively. Without any intervention, FLW generation by 2030 is projected to increase, i.e., 94 kg/capita/year of food loss and 133 kg/capita /year of food waste. With policy intervention, it is expected that FLW generation by 2030 will be reduced, i.e., 77–78 kg/capita/year of food loss and 65 kg/capita/year of food waste (see Figures 2.62 and 2.63).

Data from The World Counts suggests that almost one-third of the world's food or 1.3 billion tons of food is wasted as food loss and food waste. Without any policy

intervention, Indonesia's FLW generation will reach 344 kg/capita/year by 2045. With policy intervention, it can be controlled to 166 kg/capita/year.

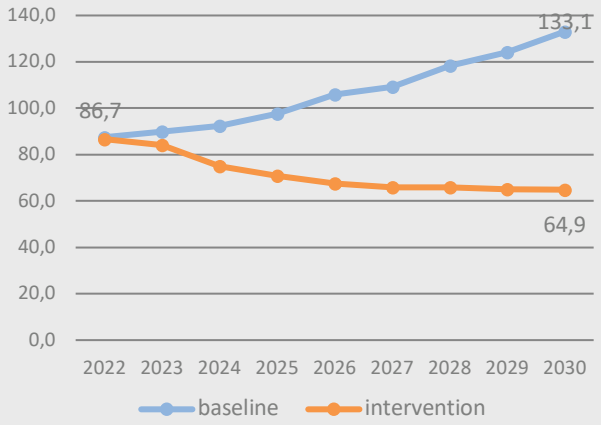
In Indonesia, food loss and food waste generation between 2000–2019 reached 115–184 kg/capita/year, equal to a total generation of 23–48 million tons/year. Grains are the largest contributor to FLW in Indonesia while vegetables are the least efficient, with almost two-thirds being wasted. In aggregate, about 15% of the total food supply is lost or wasted from production to consumption.

Figure 2.62 Indicator 12.3.1.(a) Food Loss (kg/capita/year)



Note: Projection figures taken from an exercise by the Directorate of Environment, Bappenas (Study on Food Loss and Waste in Indonesia, 2021).

Figure 2.63 Indicator 12.3.1.(b) Food Waste (kg/capita/year)



Note: Projection figures taken from an exercise by the Directorate of Environment, Bappenas (Study on Food Loss and Waste in Indonesia, 2021).

2. Achievement Strategies for Goal 12

In general, there is no specific policy from the government related to FLW. Macro policy related to FLW can be found in the green economy policy strategy, which encourages circular economy. The implementation of a circular economy is expected to encourage no more food being lost or wasted as discarded matter, by way of reuse as food ingredients or for other uses such as fertilizers, through the process of refuse, rethink, reduce, reuse, recycle, and recovery of food.

The implementation of circular economy is in line with low-carbon development policies, particularly in priority sectors of waste management and circular economy. The implementation of low-carbon development policies will support the achievement of a green economy as part of Indonesia's Economic Transformation strategy by 2045. In Indonesia's 2045 Vision, the reduction of FLW by 2030 would include the steps such as transformation towards modern agriculture, development of the food and beverage industry, and the implementation of healthy and productive food consumption patterns in the community. This is in line with the policy direction in the 2020–2024 National Medium-Term Development Plan (RPJMN) as implemented with the strategies of improving productivity and production techniques in sustainable manner, increasing the quality of food consumption, and food waste management.

FLW management is also part of the implementation of Presidential Regulation No. 97 of 2017 on National Waste Management Policies and Strategies with a target of 30% waste reduction and 70% waste processing by 2025.

In particular, a research on FLW conducted by the Ministry of National Development Planning/Bappenas together with UK-AID, WRI, and Waste4Change recommends 45 strategies for FLW management in Indonesia; they are grouped into 5 policy directions strategies, i.e., Behavioral Change, Improvement of the Food System Support, Strengthened Regulations & Optimized Funding, FLW Utilization, Development of FLW-related Studies & Data Collection. For this reason, FLW reduction is carried out throughout the whole value chain, starting from production, storage, and post-harvest handling, value-added processing, transportation, and final consumption. In the final consumption, it is expected that food waste can be prevented by way of campaigning for proportional buying and serving of food so as not to cause food being wasted. Any wasted food can be used for composting or distributed to food banks.

In addition to government policies, many micro-initiatives have been undertaken to manage FLW. They include, among others, community and industry initiatives to manage food waste by donating leftover food and collecting food waste to be processed into various other uses, such as fertilizer or other processed foods.

Existing policies on FLW can basically promote FLW reduction through massive campaigning and delivering the right programs. However, policies such as circular economy are facing the challenge of lack of consistency and coordination among relevant institutions and sectors. Initiatives at the micro level would also face the same issue if they are implemented partially and unsustainably.

In addition, challenges in the management of FLW in some cases would include inadequate infrastructure and technology. Lack of access to proper storage facilities, efficient transportation systems, and appropriate packaging technology can lead to higher food losses. On the other hand, the lack of awareness and understanding of the importance of FLW reduction in the community, including among farmers, producers, traders, and consumers, is also a challenge in FLW management. Some food wastage practices occur due to culture-related habits, consumer preferences, or logistical issues. Changing such rooted mindsets and practices would take time and sustained effort.

The management of FLW would involve many stakeholders and complex processes in the food supply chain. Reducing FLW requires good cooperation and coordination throughout the supply chain, including producers, distributors, traders, and consumers. Logistical challenges, price setting, and economic interests of individual entities can complicate policy implementation. Finally, the implementation of FLW reduction policies would require sufficient financial, technical, and human resources. Lack of budget, capacity, and trained workforce might hinder the implementation of programs and initiatives. It is imperative that these challenges are addressed using a holistic approach, engaging all stakeholders, strengthening infrastructure and technology, raising awareness and education, and strengthening coordination and collaboration between sectors.

Initiatives to reduce FLW for further improvement include:

a. Responsible organic waste management through composting and processing using Black Soldier Fly (a type of fly insect).
b. FLW management throughout the different stages of the food system, i.e., preharvest, harvest, on-farm post-harvest, transportation, storage and distribution, processing and packaging, retail, and consumption by the public and households. For example, reducing food losses during the pre-harvest can be achieved through good and regenerative agricultural practices, efficient irrigation, pest and disease control and monitoring, the use of technology and innovations that can help reduce pre-harvest losses such as the use of sensor systems to

monitor crop conditions, the use of modern tools and instruments in tillage, application of appropriate planting methods, proper infrastructure in the form of adequate storage facilities, and efficient distribution systems. Likewise, during packaging, various controls can be implemented through the development of food safety and quality standards, innovative packaging designs, etc. There needs to be an awareness-raising and education campaign for consumers on the topic of buying and consuming agricultural products wisely and reducing waste of food at the consumer level.

c. Awareness-raising campaigns should focus on addressing the causes of food waste within specific target groups. Therefore, it is important to have good data regarding the amount of food wastage and its causes. Further, it is important to identify consumer motives, communication channels, and effective practices associated with reducing food wastage.

d. It is necessary to have government policies that massively and continuously encourage the implementation of best practices and good initiatives in FLW management, and to turn it into a national movement, e.g., a movement to donate leftover food to the needy.

e. Improve food quality by capitalizing on digitalization and the Internet of Things (IoT) for activities in the supply chain, e.g., through the implementation of Green Food Supply Chain Management (GFSCM).

f. Intensively developing research for each food ingredient to suit the circular economy principles. Thus, FLW can be reused, e.g., fruit peels can be processed into other types of food or medicine, rotten crops processed into compost.

g. Develop smart packaging, i.e., smart and active packaging that can detect external and internal changes in food products and respond actively by interacting with the external interfaces, both electrical and optical. Smart packaging aims to increase the shelf life of products and their hygiene, provide accurate information to consumers, optimize safety, and better footprint of the product as it travels through the supply chain.

M. Goal 13 Addressing Climate Change

Goal 13 of SDGs is to Take Urgent Action to Combat Climate Change and Its Impacts with the following targets:

- Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
- Target 13.2: Integrate climate change anticipation measures into national policies, strategies and planning.
- Target 13.3: Improve education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning.
- Target 13.a: Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly USD100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible.
- Target 13.b: Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing states, including focusing on women, the youth, and local and marginalized communities.

Indicators to be discussed in the roadmap are:

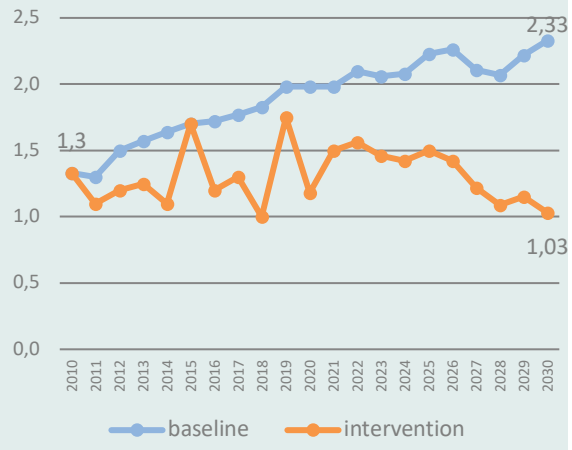
a) Indicator 13.2.2* Total greenhouse gas emission per year
b) Indicator 13.2.2.(a) Potential reduction in greenhouse gas emission
c) Indicator 13.2.2.(b) Potential reduction in greenhouse gas emission intensity

1. Target Achievements for Goal 13

In baseline conditions, Indonesia's annual greenhouse gas (GHG) emissions are expected to continue to increase to 2.29 GtCO2e in 2030 (Bappenas, 2023) if no additional efforts are made. This is because emissions in several development sectors will continue to increase. However, interventions (programs and activities) in priority sectors, i.e., energy and transportation, industry, forestry and peatland, agriculture, waste, and coastal and marine ecosystems (blue carbon) can reduce total GHG emissions to 1.03 GtCO2e by 2030.

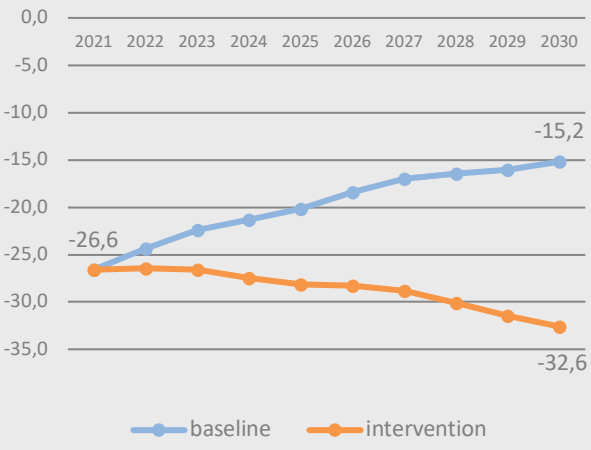
By percentage, the cumulative GHG emissions reduction can potentially reach 32.60% by 2030, in line with the Net Zero Emission (NZE) target by 2060 or sooner. GHG emissions reduction needs to be achieved through low carbon development (LCD) activities in many interrelated sectors in order to maintain economic growth in line with development targets. Efforts to reduce GHG emission intensity (the amount of GHG emissions per unit of economic output (GDP)) through the use of sustainable energy, sustainable land management, green industry improvement, waste management and circular economy, as well as the use of blue and coastal carbon are projected to reduce GHG emission intensity by 68.12% by 2030 from the baseline in 2010. GHG emission intensity in 2030 is expected to reach 0.21 kgCO2eq/USD. The decrease in emission intensity shows that the economy can continue to grow positively in line with the reduced GHG emission. These indicators show that the economy is moving on the right track to a green economy. This reflects strong economic growth that is environmentally friendly, thus it is expected that negative externalities from economic growth can be avoided so that development can take place sustainably.

Figure 2.64 Indicator 13.2.2* Total Greenhouse Gas Emission (Gton CO2eq)



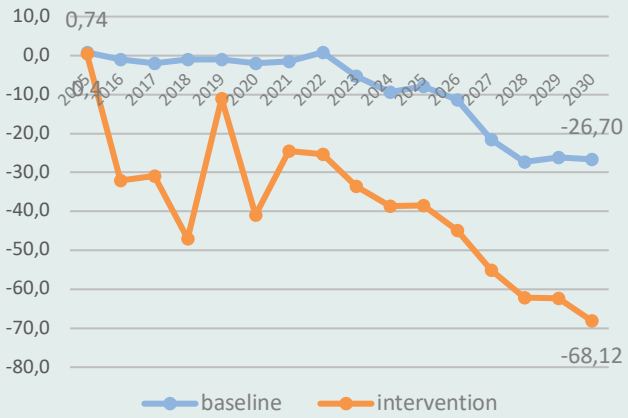
Note: Projection figures taken from an exercise by the Directorate of Environment, Bappenas (Simulation of Green Economy Model – Low Carbon Development Indonesia/LCDI).

Figure 2.65 Indicator 13.2.2.(a) Percentage of Cumulative Emission Reduction (%)



Note: Projection figures taken from an exercise by the Directorate of Environment, Bappenas (Simulation of Green Economy Model – Low Carbon Development Indonesia/LCDI).

Figure 2.66 Indicator 13.2.2.(b) Reduction in Emission Intensity (%)



Note: Projection figures taken from an exercise by the Directorate of Environment, Bappenas (Simulation of Green Economy Model – Low Carbon Development Indonesia/LCDI).

2. Achievement Strategies for Goal 13

The priority policy in reducing GHG emissions and emission intensity by 2024 in Indonesia is the implementation of Low Carbon Development policy (RPJMN 2020–2024) to be achieved using the following strategies:

a. Development of Sustainable Energy, through: (a) Management of New Renewable Energy (EBT) by developing renewable power plants and increasing the supply of biofuels from low-carbon raw materials; and (b) Energy Efficiency and Conservation.
b. Sustainable Land Restoration through: (a) Peatland Restoration and Recovery; (b) Forest and Land Rehabilitation; (c) Reduction of Deforestation Rate; and (d) Increased Agricultural Productivity and Efficiency towards Sustainable Agriculture.
c. Waste Management through: (a) Household Waste Management; and (b) Liquid Waste Management.
d. Development of Green Industry, through: (a) Conservation and Audit of Energy Use in Industries; (b) Resource efficiency by Modification of Processes and Technology; and (c) Industrial Waste Management.
e. Low Carbon Coastal and Marine through Inventory and Rehabilitation of Coastal and Marine Ecosystems.

The priority policy after 2024 is to continue the Low Carbon Development policy to be achieved using the following strategies:

a. Increasing energy efficiency.
b. Developing renewable power plants to reach almost 70% by 2045.
c. Increasing the use of biofuels as an alternative to fossil fuels.
d. Increasing investment in green technology.
e. Reducing subsidies in the energy sector
f. Transitioning to electric and hydrogen fuel-cell vehicles.
g. Implementing peat restoration, mangrove rehabilitation, and reforestation through replanting the degraded forest land.

h. Implementing measures to contain deforestation rates every year through the implementation of a moratorium on primary forest, and the implementation of Subnational Spatial Plan (RTRW).
i. Increasing agricultural productivity, primarily by increasing rice intensification and adding more irrigated rice fields.
j. Handling waste and industrial waste through a more structured waste management.

Complementary strategies in the intervention scenarios to achieve GHG emission reduction by 2030 (DIT. LH Bappenas, 2023) are carried out through:

a. Implementing forest moratorium and reforestation, projected to start running and active before 2030, so that the forest cover area can be maintained at 48.56% by 2030.
b. Maintaining mangrove area and implementing mangrove replanting, including on ponds that apply AMA (associated mangrove aquaculture) to increase productivity. Implementing pond intensification to increase productivity to 31.17 tons per hectare/year by 2030.
c. Increasing agricultural land productivity to 8.73 tons/ha/year by 2030 through organic farming, irrigation water management, and the use of superior seeds. Increasing CPO productivity to 5.22 tons/ha/year by 2030 through intensification using superior palm seeds.
d. Increasing the capacity of landfills (TPAs) along with circular economy so as to reduce waste generation, increase managed waste, and reduce the amount of waste sent to landfill, in line with the NZE scenario.
e. Developing baseline, targets, and policies for Low Carbon and Climate Resilient Development (PRKBI) at the national level, implemented and coordinated by the Minister of National Development Planning/Head of Bappenas together with the relevant Ministries/Agencies, and aligned with the national development agenda and targets. In the event of changes in the baseline and targets as outlined in the National PRKBI, coordination of such changes at the national level shall be carried out by the Minister of National Development Planning/Head of Bappenas together with relevant Ministries/Agencies.
f. In synchronizing the planning and implementation of climate change mitigation actions at the subnational level, subnational governments are required to develop their individual Subnational Action Plan (RAD) for SDG Goal 13 on Addressing Climate Change: Policies, Strategies, and Action Plans for Low Carbon and Climate Resilient Development (Province and District/City), to be coordinated by the Subnational Development Planning Agency (Bappeda). The document will be used as a reference for integrating low-carbon and climate-resilient development into the Subnational Medium-Term Development Plan and Subnational Government Work Plan at the provincial and district/city levels. This SDG Goal 13 Subnational Action Plan aims to ensure that the implementation of low-carbon and climate-resilient development is in synergy with the subnational development agenda. The Minister of National Development Planning/Head of Bappenas in coordination with the Minister of Home Affairs shall prepare the Guidelines for the Preparation of Subnational Action Plan (RAD) for TPB/SDGs Goal 13 in 2021–2024 to provide guidance for the regions in preparing such document.

This Subnational Action Plan (RAD) document for Goal 13 shall at least include the baseline of Low Carbon and Climate Resilient Development (PRKBI) at the local level, targets and policy directions of PRKBI at the local level, and PRKBI action plans for the Province and District/City. All calculations related to the baseline, targets, and policies on

low carbon development (PRK) are coordinated by the Provincial Government together with the District/City Government. In the event of changes in the baseline, targets, and policies of Subnational PRKBI, such changes should be coordinated by the Governor for the provincial level and by the Head of District/Mayor for the district/city level. Such changes should also be coordinated with the Minister of National Development Planning and the Minister of Home Affairs.

The current policies and strategies already include policies up to 2030 as well as the targets and intervention scenarios, presented in an integrated manner covering multiple sectors. The policies are also aligned with the longer development vision, such as the 2045 Indonesian Vision. Further, policies have been formulated for all priority sectors as a leverage in achieving emission reduction targets and GHG emission intensity. The policies demonstrate the Government's initiatives to reduce GHG emissions while maintaining economic growth. Other important policies articulated explicitly include efforts to change community behavior, collaboration between parties, and support from strong funding policy to drive the reduction of GHG emission intensity. In addition, efforts are needed to implement circular economy as one of the instruments for achieving low-carbon development, considering that the circular economy is a policy that relies on resource efficiency, extension of product value, and minimizing waste/rubbish, so that it is expected to also promote low-carbon activities.

Other important policies are related to the allocation of adequate funding for those efforts, including the downstream funding policies in the form of green investment from various sources to meet the emission reduction framework and GHG emission intensity. This is an opportunity to help achieve the targets while supporting economic growth, particularly in business sectors that capitalize on massive investment within the green economy corridor. Another opportunity that can be exploited is to immediately establish policies on the instruments for fiscal incentive and carbon trading.

Other required policies are the policies to strengthen and elaborate various strategies in managing the maritime sector to support emission reduction and GHG emission intensity (blue carbon) and to support achieving a green economy by integrating the concept of blue economy which has enormous potential in Indonesia.

Overall, other policies are still needed in order to support participation and collaboration of various stakeholders in supporting emission reduction and GHG emission intensity. This is mainly to encourage the involvement of non-state actors such as businesses, philanthropies, community organizations, media, and academics to jointly carry out programs and activities that support GHG emission and emission intensity reduction. The policies must be integrated with sectoral policies to reduce GHG emissions and emission intensity by 2030.

N. Goal 14 Marine Ecosystems

Goal 14 of SDGs is to Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development with the following targets:

- Target 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.
- Target 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.
- Target 14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.

- Target 14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported, and unregulated fishing, and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.
- Target 14.5 By 2020, conserve at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information.
- Target 14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.
- Target 14.7 By 2030, increase the economic benefits from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture, and tourism.
- Target 14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing states and least developed countries, and all countries.
- Target 14.b Provide access for small-scale artisanal fishers to marine resources and markets.
- Target 14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of “The future we want”.

Indicators to be discussed in the roadmap are

a) Indicator 14.4.1* Proportion of fish stocks within biologically sustainable levels
b) Indicator 14.5.1* Coverage of protected areas in relation to marine areas

1. Target Achievements for Goal 14

Target Achievements for proportion of fish stocks within biologically sustainable levels

In reference to the Regulation of the Minister of Maritime Affairs and Fisheries No. 50 of 2017 on Estimated Potentials, Total Allowable Catches, and Utilization of Fish Resources in Fisheries Management Areas of the Republic of Indonesia, the potential utilization of (marine) fish resources is 12.54 million tons. Furthermore, the utilization of fish resources needs to be carried out with the precautionary principle as stated in the Code of Conduct for Responsible Fisheries (FAO, 1995). Therefore, the total allowable catches (TAC) is 80% of the potential fish resources or 10.03 million tons.

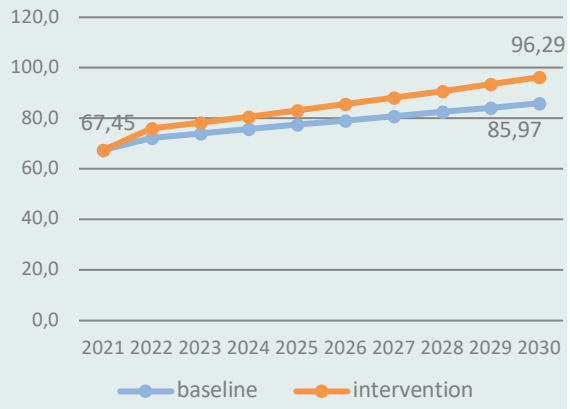
In 2021, marine capture fisheries production reached 6.77 million tons or 67.45% of TAC. This indicates that the utilization of fish resources remains at a safe biological limit (≤100% TAC).

Based on the analysis of baseline projection using a linear model, the proportion of marine fish caught in 2030 will reach 85.97%. Meanwhile, based on the analysis of intervention projection using exponential methods, it is projected that production and the proportion of fish stocks are still within safe biological limits, or 96.29% in 2030.

Target Achievements for coverage of protected areas in relation to marine areas

Marine protected areas (MPAs) are areas dedicated to the protection and maintenance of biodiversity, natural resources and related cultures that are managed legally and effectively. MPA development is an important instrument in the efforts to preserve biodiversity and marine ecosystems, improve marine functions in sequestering carbon, increase productivity and fish stocks that are trending down globally, including in Indonesia, and the development of tourism and local fisheries. Thus, MPAs provide benefits for fisheries, the economy, and the marine environment.

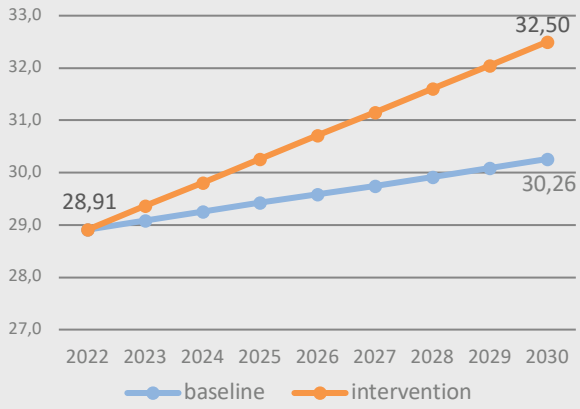
Figure 2.67 Indicator 14.4.1* Proportion of fish stocks within biologically sustainable levels (%)



Note:

1. Baseline projection uses the linear model and intervention projection refers to the exponential model.
2. Baseline and intervention projections are calculated using the following formula: caught marine fish/Total Allowable Catch (TAC).
3. MSY in 2021 refers to the Regulation of the Minister of Marine Affairs and Fisheries No. 50 of 2017 at 12,541,437 tons (TAC=10,033,150 tons).
4. MSY in 2022–2030 refers to the Regulation of the Minister of Marine Affairs and Fisheries No. 19 of 2022 at 12,011,125 tons (TAC=9,608,000).

Figure 2.68 Indicator 14.5.1* Coverage of protected areas in relation to marine areas (Ha)



Note:

1. Baseline projection uses the power model and intervention projection refers to the linear approximation model.
2. 2030 Target is 10% of Indonesian Water (325 million Ha) or 32.5 million Hs refers to Aichi Target

Indonesia has targeted 32.5 million hectares of MPAs by 2030 or in accordance with the Aichi target of 10% of Indonesian water. As of 2022, the MPAs in Indonesia reached 28.91 million Ha or covers 8.9% of Indonesia's total water. Looking at existing developments, if no intervention is made, it is estimated that the MPAs will reach 30.26 million hectares by 2030. However, with some interventions, it is expected that the MPAs can reach 32.50 million Ha and Aichi's target of 10% can be met by 2030.

2. Achievement Strategies for Goal 14

Achievement Strategies for Proportion of fish stocks within biologically sustainable levels

To maintain the proportion of fish stocks within biologically sustainable levels, the Government has issued several policies, among others, through Government Regulation No. 11 of 2023 on Measured Fishing. Measured fishing is mandated in Government Regulation in Lieu of the Law (Perpu) No. 2 of 2022 on Job Creation. This policy regulates fish catch quotas for fishers, with the objective of preserving fish resources. The government has also specified the estimated potential, total allowable catches, and utilization of fish resources in Indonesia's Fisheries Management Areas (WPP-RI) through the Decree of the Minister of Marine Affairs and Fisheries No. 50 of 2017 which was amended by the Decree of the Minister of Marine Affairs and Fisheries No. 19 of 2022. Furthermore, the Government through the Ministry of Marine Affairs and Fisheries (MMAF) has also issued a policy that prohibits fishing using non-environmentally friendly fishing gears through the Regulation of the Minister of Marine Affairs and Fisheries No. 18 of 2021 on the Placement of Fishing Gears and Fishing Aids in the Indonesian Fisheries Management Areas and the High Seas and the Management of Andon Fishing.

In addition, the government also took measures to prevent Illegal Unregulated and Unreported (IUU) fishing activities, among others by strengthening the monitoring, supervision, and control systems; running operations that rigorously arrest IUU vessels; fishery products certification and traceability; and strengthening regional and international cooperation.

In order to increase the productivity and competitiveness of fishery products, the government has developed capture fisheries infrastructure and facilities, such as fishing ports, including the development of cold chain, logistics, and fish processing systems; technical assistance and training; facilitation of access to finance for fishers and fishery business groups; and research aimed at capture fisheries development.

Further, to maintain the effectiveness of policy implementation, close and continuous monitoring and strong law enforcement would be needed. The precautionary principle is required in the development of fleets and other infrastructure aimed at increasing production. For this reason, a science-based approach is needed in capture fisheries management and database strengthening.

Policies and strategies for achieving the target of Proportion fish stocks within biologically sustainable levels are directed towards:

a. Strengthening fisheries governance; among others, by:
    1) Strengthening the governance of the management authorities in 11 Fisheries Management Areas (FMA) with an ecosystem-based fisheries management approach;
    2) Strengthening data collection of fish stocks per FMA and capture fisheries fleet, as well as calculating the economic balance of fish resources;
    3) Strengthening the implementation of harvest strategy and harvest control rules, including quota-based capture;
    4) Developing an integrated, effective, and efficient digital licensing system by considering the Capacity Utilization (CU) and Vessel Capacity Utilization;
    5) Implementing instruments and developing fiscal capacity of national and subnational fisheries management;
    6) Strengthening international cooperation in the management of fish resources that cross maritime boundaries.

b. Implementing sustainable and responsible fishing practices, among others by:
    1) Revitalizing and modernizing fishing fleets, as well as developing environmentally friendly and selective fishing methods and technologies;
    2) Increasing access, business capacity, and fisheries institutions, particularly in small-scale fisheries;
    3) Strengthening the systems, fleet, and instruments to monitor fishery resources;
    4) Improving training and outreach regarding sustainable fishery to fishers, crew, and boat owners on Good Fishing Practices;
    5) Strengthening the reporting and recording system of fisheries production.
c. Developing the upstream-downstream fisheries industry, among others by:
    1) Strengthening environmentally friendly fish landing facilities and infrastructure;
    2) Strengthening supply chains and cold chain systems of fishery products;
    3) Strengthening the quality assurance system of fishery products;
    4) Developing the fishing vessel shipyard industry;
    5) Developing integrated fishing production and fishing industry areas and centers.

Achievement Strategies for Coverage of protected areas in relation to marine areas

Some of the regulations to support the management of MPAs include Law No. 32 of 2009 on Environmental Protection and Management, which provides the legal basis for environmental protection and management, including the management of marine protected areas. Further, Government Regulation No. 60 of 2007 on Conservation Areas regulates the establishment, management, and protection of conservation areas, including marine protected areas. The regulation is elaborated in more detail through the Regulation of the Minister of Marine Affairs and Fisheries No. 45 of 2016 on the Management of National Marine Protected Areas, which regulates the management of national marine protected areas. In addition, Government Regulation No. 24 of 2010 on Spatial Planning for Coastal Areas and Small Islands provides guidance on spatial use planning in coastal areas, including marine protected areas.

The government targets 32.5 million hectares of MPAs by 2030 by expanding the area size of MPAs in a number of potential areas. This target can be achieved if the government's policy strategy by way of preparing the laws and regulations that support MPA management in the regions can be carried out smoothly. In addition to achieving the target on MPAs area size, the Government has also sought to improve the effectiveness of MPA management through EVIKA (evaluation on the effectiveness of conservation area management), shared plans to strengthen the planning process, shared investment, and shared management responsibilities with the Subnational Governments. The government also plans to manage MPAs through partnership networks and cooperation in marine biodiversity conservation.

Efforts to achieve the target on MPAs area size and to improve the effectiveness of MPA management also require some costs, especially related to monitoring and surveillance. Thus, sustainable financing for MPAs becomes a necessity. One strategy to obtain sustainable financing is by developing the MPAs into restricted areas for tourism (ecotourism) in the utilization zones. Government programs related to improving specific bridging tools, such as linking the stakeholders, jointly generating knowledge to manage MPAs, providing access to resources, facilitating active community engagement, and capacity building, will basically support the achievement of the target related to MPAs area size and effectiveness.

MPA area development basically requires more science-based conservation, including various criteria to be considered, and Extended-Benefit Cost Analysis, not just "convenient conservation". The government needs to focus more on areas where spawning grounds and feeding grounds are threatened by development, such as oil and gas mining, tourism activities, habitat destruction, and capture fisheries. On the other hand, MPA development must involve various actors including academics, local communities, and non-governmental organizations (NGOs), including in multiple bridging tools, through key initiatives such as setting an entrance fee system, patrol system, as well as sustainable financing and blue funds.

MPAs are powerful management tools used around the world, but many MPAs fail to achieve the management objectives due to a lack of understanding regarding the level of legitimacy that the stakeholders have over the MPAs. Legitimacy refers to the political ability for MPAs to be accepted as a right for those involved, interested in and or affected by MPAs. Thus, strong policies related to the legitimacy of MPAs become a necessity.

The policies and strategies to increase the area size of MPAs are directed towards:

a. Strengthening the effectiveness of management, instruments, synergies of the governance and institutions in managing conservation areas, among others by:
    1) Integrating regulations and policies between the national and subnational governments regarding conservation areas;
    2) Strengthening the scientific base in the designation of conservation areas;
    3) Developing instruments for the determining Other Effective Area-based Conservation Measures;
    4) Promoting regional conservation area networks;
    5) Identifying the designation of conservation areas in additional zones (contiguous zones);
    6) Developing multi stakeholder cooperation;
    7) Increasing the capacity of human resources and the infrastructure of conservation areas;
    8) Increasing the fiscal capacity in managing conservation areas at the national and subnational level.
b. Maintaining ecosystem health and promoting sustainable use of MPAs
    1) Improving oversight and monitoring of biophysical conditions and conservation targets;
    2) Strengthening the permit system for the use of the Area;
    3) Increasing community empowerment and participation in overseeing and monitoring conservation areas;
    4) Developing citizen science instruments;
    5) Increasing efforts to rehabilitate coastal ecosystems and habitats as well as mitigation and adaptation to disasters, especially climate change.
c. Providing long-term funding for the conservation areas
    1) Analyzing financing gaps;
    2) Developing blended funding and other innovative funding;
    3) Developing payments for ecosystem services on each MPA.

O. Goal 15 Terrestrial Ecosystems

Goal 15 of SDGs is to Protect, Restore and Promote Sustainable Use of Terrestrial Ecosystems, Sustainably Manage Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss with the following targets:

- Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forest, wetland, mountain, and dryland ecosystems, in line with obligations under international agreements.
- Target 15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and substantially increase afforestation and reforestation globally.
- Target 15.3: By 2030, halt desertification, restore degraded land and soil, including land affected by desertification, drought, and floods, and strive to achieve a world free from land degradation.
- Target 15.4: By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.
- Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.
- Target 15.6: Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed.
- Target 15.7: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products.
- Target 15.8: By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems, and control or eradicate the priority invasive species.
- Target 15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty alleviation strategies and accounts.
- Target 15.a: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.
- Target 15.b: Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation.
- Target 15.c: Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities.

The indicator to be discussed in the roadmap is:

Indicator 15.1.1* Proportion of forest cover to total land area

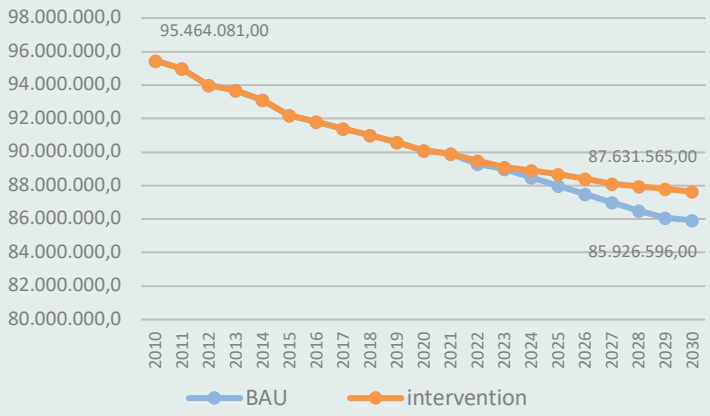
1. Target Achievements for Goal 15

Indonesia's vast tropical forests are one of the basic capitals of national development to support economic activities and improve the welfare of the nation. Tropical forests have the functions to support life, regulate the water cycle, drive economic activities and socio-cultural activities of the community.

A total area of 120.25 million hectares or 65% of the size of Indonesia is designated by law (de jure) as forest areas with the aim of maintaining the area as a permanent forest. The State of Indonesia Forestry (SoIFo 2022) indicates that the size of conservation forest is 21.87 million hectares, protected forest is 29.56 million hectares, permanent production forest is 56.03 million hectares, and convertible production forest is 12.79 million hectares. In actuality (de facto), the forest cover in forest areas is only around 86 million hectares or approximately 71 of the forest area.

The forest cover area tends to decrease in 1990–2020. Indonesia's growing population is driving the need for shelter, food, and energy, increasing the rate of deforestation in Indonesia. The increasing demand for land as a limited natural resource has led to the use of forest areas as an option to meet the needs. Therefore, the current efforts to reduce deforestation rates will be maintained to reduce the decline in forest cover. By 2030, it is expected that the forest cover can be maintained at around 86 million hectares in a fair scenario or 88 million hectares in an ambitious scenario.

Figure 2.69 Forest Cover Area Indicator (Hectares)



Note: Projection figures sourced from the Directorate of Forestry and Water Resources Conservation, Bappenas

2. Achievement Strategies for Goal 15

The government has developed various policies to maintain forest cover in Indonesia. One of Indonesia's commitments to maintain forest cover is through Environmental Quality Improvement policy and Low Carbon Development policy as outlined in the 2020–2024 National Medium-Term Development Plan (RPJMN). Environmental Quality Improvement policy is achieved through the following strategies:

a. Prevention of pollution and damages to natural resources and the environment, through prevention of land and forest fires.
b. Rehabilitation of natural resources and the environment from pollution and degradation, through peatland restoration and recovery.

Meanwhile, Low Carbon Development policy is achieved through the following strategies:

a. Sustainable Land Restoration through: (a) Peatland restoration and recovery; and (b) Forest and land rehabilitation; (c) Reduction of deforestation rates.

The priority policy after 2024 is to continue the previous policy by putting emphasis on complementary strategies in the form of:

a. Implementation of peat restoration and recovery by replanting degraded forests.
b. Implementation of efforts to contain deforestation rates every year through primary forest moratorium and the implementation of subnational spatial planning (RTRW).

Complementary strategies to reduce the rate of forest cover decrease by 2030 (Dit. LH Bappenas, 2023) is carried out through:

a. Implementing forest moratorium and reforestation, which are projected to start running and active before 2030.
b. Maintaining the size of mangrove area and rehabilitating the mangroves.

The current policies and strategies are strong enough as they are able to reduce the rate of decline in forest cover. The policies also have some co-benefits for achieving other SDG goals, such as the potential to reduce greenhouse gas emissions in Goal 13 on Addressing Climate Change. The current policies have also led to a significant reduction in forest and land fires. However, cross-sectoral policies and strategies and the involvement of all stakeholders, including non-government entities, are still needed to support in reducing the deforestation rate.

One recommendation to complement the current policies is to have additional policies in place that can boost an increase in forest cover outside the forest areas. Moreover, policies for engaging all parties, both government and non-government, at all levels, i.e., national and subnational level, are also needed. Another needed policy is to strengthen the use of forest areas that have economic value while maintaining their sustainability. This policy can be in the form of strengthening the use of forest environmental services such as the use of non-timber forest products (HHBK) and the use of forest areas for sustainable tourism.

P. Goal 16 Peace, Justice, and Strong Institutions

Goal 16 of SDGs is to Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for All and Build Effective, Accountable and Inclusive Institutions at All Levels with the following targets:

- Target 16.1: Significantly reduce all forms of violence and related death rates everywhere.
- Target 16.2: End abuse, exploitation, trafficking and all forms of violence against and torture of children.
- Target 16.3: Promote the rule of law at the national and international levels and ensure equal access to justice for all.
- Target 16.4: By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime.
- Target 16.5: Substantially reduce corruption and bribery in all their forms.
- Target 16.6: Develop effective, accountable, and transparent institutions at all levels.
- Target 16.7: Ensure responsive, inclusive, participatory, and representative decision-making at all levels.
- Target 16.8: Broaden and strengthen the participation of developing countries in the institutions of global governance.
- Target 16.9: By 2030, provide legal identity for all, including birth registration.
- Target 16.10: Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.
- Target 16.a: Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime.
- Target 16.b: Promote and enforce non-discriminatory laws and policies for sustainable development.

Indicators to be discussed in the roadmap are:

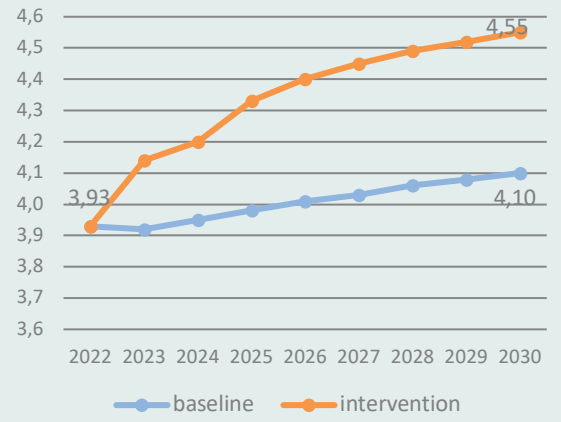
a) Indicator 16.5.1(a). Anti-Corruption Behavior Index (IPAK)
b) Indicator 16.7.2(a). Democratic Institution Capacity Index

c) Indicator 16.9.1.* Proportion of children under 5 years of age whose births have been registered with a civil authority, by age
d) Indicator 16.9.1(a). Percentage of population aged 0–17 years at the bottom 40% of income who have birth certificates
e) Indicator 16.9.1(b). Percentage of population aged 0–17 years who have birth certificates

1. Target Achievements for Goal 16

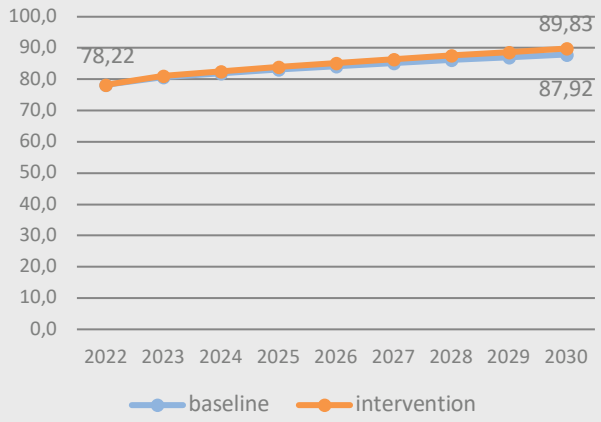
Target Achievements for Improving Anti-Corruption Behavior Index (IPAK)

Figure 2.70 Indicator 16.5.1.(a) Anti-Corruption Behavior Index (IPAK). (Index)



Note: Baseline projection uses the logarithm model and intervention projection refers to the logarithm model.

Figure 2.71 Indicator 16.7.2.(a) Indonesian Democracy Index, Democratic Institution Capacity Aspect (Index)



Note: Baseline projection uses the logarithm model and intervention projection refers to the power model.

After the reform movement, there are a number of outcomes in the enforcement of the law, including stronger institution and independence of law enforcement agencies, as well as more professional and reliable justice system in Indonesia. However, in some areas, the law has yet to enforced as expected; one of which was the eradication of corruption. In the government system, corruption hinders development as it prevents the natural laws of the economy from functioning.

Corruption causes inefficiencies in the use of resources allocated for development, impacting public services and infrastructure that did not reach the quality as planned. Corrupt practices also undermine public trust in the overall integrity and commitment of the government.

One of the targets in sustainable development goals is to increase the score of the Anti-Corruption Behavior Index (IPAK), a public survey. The Index has two dimensions of public perception, i.e., Perception and Experience. Perception is the assessment or opinion of anti-corruption behavior in the community. Experience is the anti-corruption experiences in public service delivery in relation to bribery, extortion, and nepotism.

The Index measures public tolerance in dealing with petty corruption, not grand corruption.

In 2022, Anti-Corruption Behavior in the community is scored at 3.93 (scale 1 to 5). This shows that the public is quite aware and has lower tolerance (less permissive) to corrupt practices. If the recommended interventions are implemented, by end of 2030 the index score will increase significantly to 4.55 (or an increase of 0.62 points). However, without any intervention, the Anti-Corruption Behavior in the same period (end of 2030) will increase by only 0.17 points.

Target Achievements for Improving Indonesian Democracy Index, Democratic Institution Capacity Aspect

Responsive and representative democratic institutions definitely have substantial influence in the development of democracy. In Indonesia, democratic institutions include political parties, representative bodies (DPR/National Parliament, DPD/Senate, DPRD/Subnational Parliament), the judiciary (MK/Constitutional Court, MA/Supreme Court, KY/Judicial Commission), and government bureaucracy. Through these three categories of institutions, democratic principles are implemented. In accordance with the constitution, Indonesia holds the principle that the three democratic institutions can control and supervise each other, so as to create a balance of power.

One reference that can be used to measure the capacity of democratic institutions is the Indonesian Democracy Index (IDI) developed by Statistics Indonesia (BPS). The index includes 22 indicators of the state of democracy in Indonesia. The aspects being measured are independence, equality, and capacity of democratic institutions. The capacity of democratic institutions is measured using 8 indicators, i.e., the performance of legislative bodies, the performance of the judiciary, the neutrality of election organizers, decisions of the State Administrative Court (PTUN) related to government policies, assurance on environmental conservation, budget transparency in the form of budgetary information at the national and local level (APBN/D) by the government, the performance of government bureaucracy in delivering public services, and political education for political party cadres. Between 2018 and 2021, the index showed varied conditions. In general, the scores in the index have improved, and only some indicators are stagnant and declining.

In the 2022 index, nationally, the Capacity of Democratic Institutions was one aspect with the lowest score (78.22) being in the medium range category, compared to the other two aspects which have reached the high range category. In this aspect, the indicators with low scores were the performance of legislative bodies at the national and provincial levels, as well as the decision of State Administrative Court (PTUN) related to government policies at the national and provincial levels.

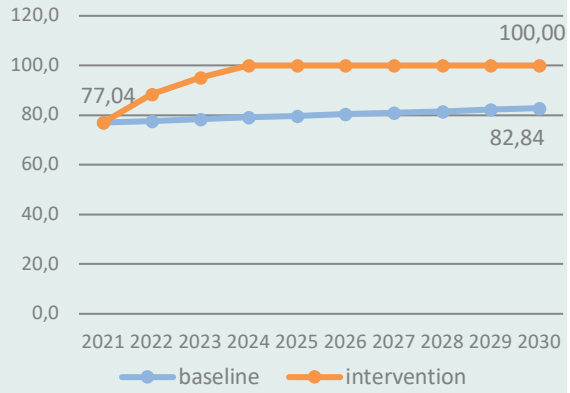
This capacity building will further ensure the institutionalization of democratic principles and increase the presence and representation of the state in people's daily lives (presence and representation principle). The votes reaped during elections can be translated into the voice that steers government administration and people's daily lives.

Target Achievements for Providing Legal Identity for All Through Improvements in Civil Registration

Birth events must be followed by authentic proof of birth in the form of a birth certificate issued by the civil registration authority. Birth registration is a form of recognition and protection from the state of the civil status, legal certainty, and can be used as a supporting document in any country.

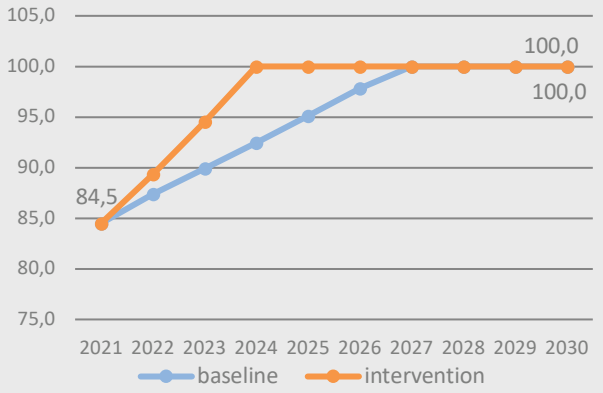
Birth registration is an important element of national planning related to children, providing a demographic basis for more strategic and effective policy direction. Birth registration is also a way to secure children's rights.

Figure 2.72 Indicator 16.9.1* Proportion of children under 5 years of age whose births have been registered with a civil authority, by age (%)



Note: Baseline projection uses the MethodX model and intervention projection refers to the logarithm model.

Figure 2.73 Indicator 16.9.1.(a) Percentage of population the bottom 40% of income who have birth certificates

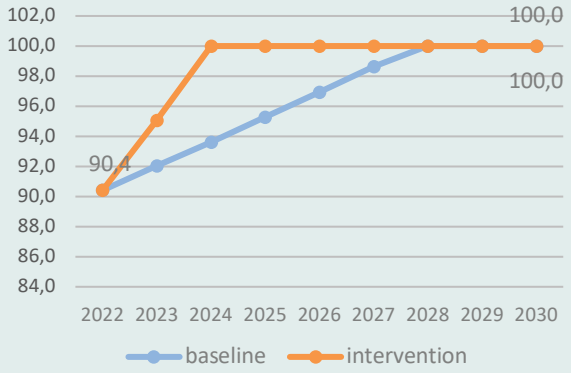


Note: Baseline projection uses the exponential model and intervention projection refers to the exponential model.

Birth certificates have important functions in all aspects of a child's life, e.g., school enrollment, making National Identity Card (KTP), performing civil actions such as marriage, land ownership, and others.

Although birth certificates are very important, the Ministry of Women's Empowerment and Child Protection (PPPA) stated that, in 2021, around 5 million children in Indonesia did not have birth certificates. The National Action Plan of SDGs stated that 88.42% of children have a birth certificate in 2021. With planned program interventions, it is targeted that by 2024 the Government would be able to issue birth certificates for 100% of children.

Figure 2.74 Indicator 16.9.1.(b) Percentage of children who have birth certificates (%)



Note: Baseline projection uses the exponential model and intervention projection refers to the exponential model.

2. Achievement Strategies for Goal 16

Strategies, Policies, and Programs to Achieve the Target of Improving IPAK

An increase in the score of IPAK by 0.62 points can be achieved through several policies:

a. Strengthening the Management Support by expanding the establishment of Integrity Zones (ZI), Corruption-Free Zones (WBK), and Clean and Service-Oriented Bureaucracy Zones (WBBM), e.g., the Attorney General's Office and the Constitutional Court.
b. Monitoring and Supervision of the National Strategy for Corruption Prevention, particularly in the Integrity Action in Handling Criminal Cases which will provide access to information for the public and publicly-accessible desk monitoring.
c. Improving the quality in monitoring the ZI/WBK and WBBM status.
d. Enhancing more massive Anti-Corruption Education to the community.

The purpose of establishing Integrity Zones is to create clean, accountable, effective, efficient, and public service-oriented government units. This is achieved by improving 6 aspects of government administration, i.e.: change management, improved procedures, better HR management, strengthened accountability, enhanced supervision and areas, improved quality of public services. The expected final outcome is certainty in terms of time and quality of public services, digitalization and transparency, as well as zero rate of corrupt practices and illegal levies in the service unit.

The strength of this strategy is to try to influence the level of public satisfaction regarding services provided by the relevant government units. This can be measured by conducting an independent survey. The drawback of this strategy is supervision of the ZI areas must be enhanced, as the locus of corrupt practices or illegal levies will shift from inside the office area to outside, or that of which will be paid indirectly to other parties. One example is illegal levies for visiting people held in custody by the investigators. In the past, illegal levies were paid directly by visitors to the officers, yet since Integrity Zone was established, payments were made by visitors to the people they visit, who will give it to the cell-block chief, who will then give it to the officers. Another example is the Integrity Zone in the Port area, where the practice of collecting illegal levies now moves to the outer area of the Port.

To support a government that is clean from corruption, public support is needed, thus a stronger and more massive anti-corruption education for the public would be needed. In addition, more fundamental changes are also needed on the side of the government system in preventing and taking action against petty corruption, such as by optimizing the use of corruption whistleblowing system and/or corruption-related complaint-handling system in each agency.

Strategies, Policies, and Programs to Strengthen the Capacity of Democratic Institutions

A projected increase in the score of democratic institutions' capacity at 96.76 or an increase by 13.98 points can be achieved by implementing a number of programs, as follows:

a. Political education and Pancasila ideology reinforcement to political party administrators
b. Funding support to political parties
c. Democratic strengthening facilitation in the regions
d. Improvement of domestic political policies (in the form of policy recommendations)

e. Publication of information related to the implementation of general elections and public participation

Program policy focuses on a number of key aspects, i.e., the capacity of political parties, improved quality of domestic political policies (in the form of studies), and publication of information to the public related to general elections. These three things will further ensure the institutionalization of democracy by increasing the capacity of political party administrators and domestic political policy makers to carry out their functions. The same applies for the outreach to community groups to disseminate information regarding general election.

Another important thing that needs program intervention is increasing the integrity and independence of election organizers, i.e., the General Election Commission (KPU) and the General Election Supervisory Body (Bawaslu). IDI indicates a decline in this aspect. This has an effect on public trust and participation in general elections, thus more meaningful interventions are needed. The same applies for strengthening representative bodies, where the public gets more and meaningful space to ensure that their aspirations are represented. The secretariat of representative bodies has the capacity to better aggregate public aspirations, especially in the legislative and budgetary functions; this is to address public criticism regarding the hasty and opaque process of drafting certain laws, and also regarding access to information on budget preparation.

A number of additional interventions are needed to ensure more meaningful institutionalization of democracy, i.e., protecting freedom of expression and addressing discriminatory practices based on gender, ethnicity, and group. Both would require further program intervention.

Strategies, Policies, and Programs to Achieve the Target of Improving Civil Registration

Some reasons of why children do not have birth certificates include their parents' awareness of the importance of birth certificates, the parents' marital status and residential status, geographical conditions or limited access to information for the parents.

According to the Ministry of Women's Empowerment and Child Protection, the challenging geographical conditions and difficulties in accessing the District Civil Registry Office result in high costs or difficulties for people living in remote areas. Another cause is the public's idea that the requirements for making birth certificates are many and troublesome, as well as lack of knowledge about the importance of birth certificates for their children's lives.

Five policies to achieve the target of birth certificate ownership are as follows:

a. Bringing services closer to the community in urban and rural villages, as well as provision of services in all Representative Offices of the Republic of Indonesia for Indonesian citizens (WNI) abroad.
b. Improving civil registry services to be simple, expedited, and innovative.
c. Engaging various government sectors and elements of society to be actively involved in disseminating the importance of civil registration for residents and Indonesian citizens abroad, with the requirements and procedures.
d. Providing services to all people who are vulnerable in population administration and special groups in obtaining population documents.
e. Increasing the knowledge and active participation of people who are vulnerable in population administration and special groups in registering population administration events and vital events.

In registering births, three aspects must be met: the availability of birth registration facilities (not only in district capitals, especially in large areas) and clear and effective dissemination of information in large urban settlements and remote areas. The third aspect is the interoperability of population data between government agencies. The government should also increase information campaigns on the ease of birth registration and the key benefits for the children.

Q. Goal 17 Strengthen the Means to Implement and Revitalize the Global Partnership for Sustainable Development

Goal 17 of SDGs is to Strengthen the Means of Implementation and Revitalize the Global Partnership for Sustainable Development with the following targets:

- Target 17.1: Strengthen domestic resource mobilization, including through international support to developing countries, to improve local capacity for tax and other revenue collection.
- Target 17.2: Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7% of Gross National Income for Official Development Assistance (ODA/GNI) to developing countries and 0.15 to 0.20% ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20% ODA/GNI to least developed countries.
- Target 17.3: Mobilize additional financial resources for developing countries from multiple sources.
- Target 17.4: Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at helping with debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress.
- Target 17.5: Adopt and implement investment promotion regimes for least developed countries.
- Target 17.6: Enhance North-South, South-South, and triangular regional and international cooperation on and access to science, technology, and innovation, and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.
- Target 17.7: Promote the development, transfer, dissemination, and diffusion of environmentally sound technologies to developing countries on favorable terms, including on concessional and preferential terms, as mutually agreed.
- Target 17.8: Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology.
- Target 17.9: Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South, and triangular cooperation.
- Target 17.10: Promote a universal, rules-based, open, non-discriminatory, and equitable multilateral trading system under the World Trade Organization, including through the conclusion of agreements under its Doha Development Agenda.
- Target 17.11: Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020.

- Target 17.12: Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access.
- Target 17.13: Enhance global macroeconomic stability, including through policy coordination and policy coherence.
- Target 17.14: Enhance policy coherence for sustainable development.
- Target 17.15: Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development.
- Target 17.16: Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology, and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.
- Target 17.17: Encourage and promote effective public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.
- Target 17.18: By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing states, to increase significantly the availability of high-quality, timely, and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location, and other characteristics relevant in national contexts.
- Target 17.19: By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries.

Indicators to be discussed in the roadmap are:

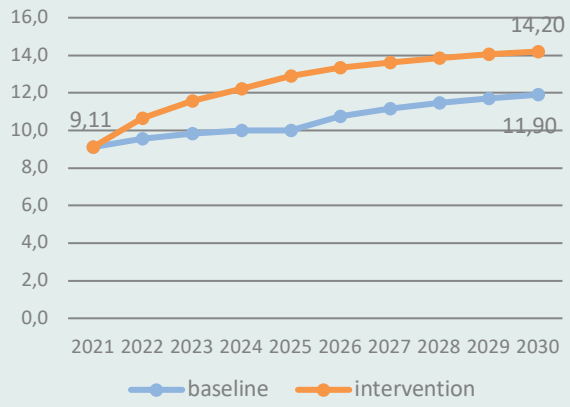
a) Indicator 17.1.1.(a) Ratio of tax revenue to GDP.
b) Indicator 17.8.1* Percentage of internet users
c) Indicator 17.11.1.(b) Indonesia's Share of Global Export

1. Target Achievements for Goal 17

Target Achievements for Strengthening Domestic Resource Mobilization by Increasing Tax Revenue Ratio

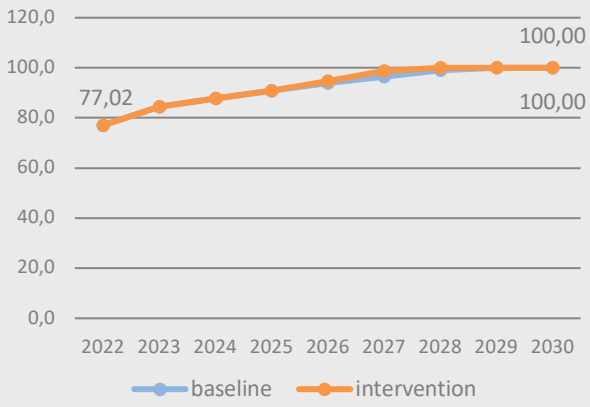
Increasing tax revenue—as part of the efforts to increase state revenue (Indicator 17.1.1.*) and in correlation with the proportion of domestic budget funded by domestic taxes (Indicator 17.1.2.*)—is a strategic measure to maintain macroeconomic stability to achieve fiscal sustainability in support of pro-stability, pro-growth, and pro-equity policies.

Figure 2.75 Indicator 17.1.1.(a) Ratio of tax revenue to GDP. (%)



Note: Baseline projection uses the logarithm model and intervention projection refers to the logarithm model.

Figure 2.76 Indicator 17.8.1* Percentage of internet users (%)



Note: Baseline projection uses the power model and intervention projection is not needed as target will reach 100% by 2024.

At the same time, greater tax revenues also open up wider space for financing various programs to achieve other SDG indicators in an interlinkage perceptive.

Nevertheless, increasing tax revenue is a challenging and complex agenda due to external and internal aspects. First, externally, tax revenue dynamics will follow the dynamics of global economy, particularly in relation to fluctuations in commodity prices and Indonesia's export in the international market, as well as international political-economic relations within and between regions. An upswing in global economy opens up wider space for national—even sub-national—tax revenues. Conversely, the opposite would happen in a downswing. Greater complexities of the issue are due to external factors that are beyond the control of the tax authority. Global uncertainties might happen and escalate in such a way with potentially negative impact on tax revenues.

Second, internally, this issue is also related to the economic, administrative, and social dimensions. In the economic dimension, tax revenue can promote growth and stability, yet the opposite could also happen. There is a reciprocal nature between economic growth and stability on the one hand and tax revenue on the other. Thus, economic growth and stability become necessary condition for tax revenue, both direct and indirect taxes—and the state revenue as a whole.

Further, in the administrative dimension, tax activities must be responsive to institutional and infrastructure issues in a rapidly changing era. The institutional issue concerns tax policy and administration in responding to changes in the economic structure.

Meanwhile, infrastructure issue refers to the provision of hardware and software to support the tax administration. The complexity of this issue comes to the fore in line with the rapid and massive changes in information technology and digital technology as characterized by creative destruction. Tax administration cannot avoid this change, it should make adjustments in a quick and flexible manner. Meanwhile, in the social dimension, the challenge of increasing tax compliance is correlated with tax culture. Even today, the tax culture has not been formed solidly and massively among taxpayers, and tax evasion and tax avoidance are often detected in many cases. At the same time, demands about taxpayers' compliance need to be balanced with responses in enforcing the law and taxpayers' compliance. Issues regarding the ethical behavior of tax officials

and governance—even those that lead to legal issues—continue to be important and inseparable tax agenda.

It is clear that the SDG target in increasing the tax ratio is not an easy task, particularly considering that tax revenues only started to rebound after being contracted due to the COVID-19 pandemic. Although positive changes in the amount of tax revenue per annum are visible, recent historical data shows that Indonesia's tax ratio is far from ideal — remaining within the range of 9–10%. Based on this illustration, the intervention scenario to achieve tax ratio of 14% of GDP in the next seven years will be challenging, particularly considering that the tax ratio targets outlined in the Ministry of Finance's 2020–2024 Strategic Plan (Renstra Kemenkeu) are 8.38–9.09% and 8.59–9.55% in 2023 and 2024, respectively.

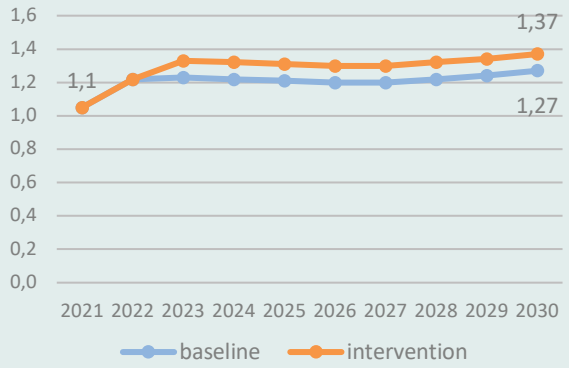
Target Achievements for Increasing the use of Enabling Technology, Particularly Information and Communication Technology, by Increasing the Percentage of Internet Users.

An increase in the population of internet users—together with an increase in the percentage of customers who have access to fixed broadband networks to the total number of households (Indicator 17.6.1.(a)) and an increase in the percentage of sub-districts covered by fiber optic network infrastructure (Indicator 17.6.1.(b))—is an important step for sustainable development. The Internet itself has been and will continue to become increasingly vital in line with increasing intensity of government, business, and community activities that rely on this technology for various needs, such as connectivity, information exchange, increased productivity and efficiency, innovation generation, and job creation. This vital role continues to become stronger as the internet intersects with the increasingly transformative and fast-moving digital government, digital economy, and digital society, along with the unintended effect on digital divide. It all moves in parallel with the presence of new technologies, such as artificial intelligence, blockchain, cloud computing, and the 'Internet of Things' (IoT)—all of which need to be underpinned by adaptive and supportive regulatory framework. At the same time, the internet also serves to help achieving the SDG indicators, so that interlinkages are formed strongly.

The projection shows that internet use has reached the majority of the Indonesian population, it is also predicted that by the end of the 2030 SDG targets will be 100% achieved. That way, the idea of connecting the unconnected will soon be realized to support the national digital transformation in the framework of Indonesia's digital independence and sovereignty.

Based on the current performance, the quantitative target of internet users is no longer a crucial issue, but instead needs to be complemented and enriched with qualitative targets in the form of expanding and deepening internet utilization towards more innovative-productive activities by building an inclusive broadband ecosystem—involving the youth, seniors, and the elderly, women, persons with disabilities, and communities in isolated geographies areas in the outermost, frontier, and disadvantaged regions (3T) to ensure that the principle of no one left behind is also implemented in the internet ecosystem. The challenges that arise with regard to the generation of innovative-productive activities in the next few years are the preparation of regulatory framework in fast-changing technologies, as well as support for digital government, digital economy including digital start-ups, and digital society, and reducing gaps in digital access, literacy, and skills,

Figure 2.77 Indicator 17.11.1.(b) Indonesia's Share of Global Export



Note: Baseline and intervention projections use the projections created by the Directorate of Macro Planning and Statistics Analysis, Bappenas.

Target Achievements for Increasing Export Market Share

Indonesia's export performance continues to be dominated by commodity products that have low-value and low-value-added, bulky and have high logistics costs, and employ workers with relatively low skills. In order to encourage quality growth, Indonesia's exports need to be supported to be more diversified, have high value-added, able to absorb skilled labor, and globally competitive.

Over the past several periods until 2022, Indonesia's market share of international export has been relatively stagnant, with a global share of around one percent and 1.2% in 2022. This is because Indonesia is still relying on exports of commodities and exports of low-value products. It takes significant efforts to change Indonesia's export structure into higher-value, value-added, and high-tech exports. In addition, efforts are also needed to expand the market share of and access to export.

Indonesia's export destination countries are dominated by China (23.76%), the United States (10.18%), and Japan (8.95%). It takes efforts to expand the export markets to countries that have great potential in terms of population increase, so that they become Indonesia's largest consumers in the future. Thus, in 2030, it is expected that Indonesia's market share will increase in China (25.90%) and India (9.29%), as well as Africa (2.72%), countries that are projected to have increased population in 2030. Indonesia also needs to increase its contribution as a supplier in regional trade production chain, namely in East and Southeast Asia. The expansion of Indonesia's export to non-traditional countries, i.e., Africa, the Middle East, and South Asia, is also very important. In addition, export market share in Europe and the United States must be maintained as many restrictions, such as higher quality standards and green trade, are emerging.

The projection shows that Indonesia's share of global exports is increasing, and it is estimated that in SDG's final year in 2030 it will reach 1.37% through policy interventions on the main sectors, i.e., (i) livestock and fisheries; (ii) agriculture and plantations; (iii) food, beverage, and tobacco industry; (iv) base metal industry; (v) machinery and electrical equipment industry; (vi) transportation industry; and (vii) other manufacturing industries.

2. Achievement Strategies for Goal 17

Achievement Strategies for Strengthening Domestic Resource Mobilization by Increasing Tax Revenue Ratio

The strategy of "Optimizing state revenues through sustainable administrative reforms and adaptive tax policies while maintaining the investment climate"—which has been set forth in the Indonesia SDG Roadmap Towards 2030 published by Bappenas—remains relevant and important to be strengthened, or even to have it accelerated. This strategy can be outlined into two classes of policies, i.e., general policies and technical policies, as intervention measures to achieve the targets.

General Policies

The general policy direction of taxation to increase the tax ratio as stated in the Ministry of Finance's 2020–2024 Strategic Plan consists of three groups. First, tax extensification and intensification by improving the function of the 'Center for Tax Analysis' (CTA). Second, increased access to third-party data, including data derived from the 'Automatic Exchange of Information' (AEOI) program. Third, improvement of tax regulations.

In addition, in relation to increasing people's purchasing power, investment climate, and national industrial competitiveness, tax policies also include (a) synchronizing/aligning the tax rules; (b) providing fiscal incentives in the form of Income Tax (PPh) and Government-borne Import Duties; and (c) increasing the utilization of Bonded Logistics Centers (PLB) to reduce logistics costs.

The government's efforts as stated in the 2024 Government Work Plan (RKP) include: (1) accelerating tax policy reform to gradually shift the structure of tax revenue in line with changes in the structure of a more productive economy; (2) exploring new sources of tax revenue that can reduce dependence on natural resources and support the energy transition; (3) promoting better compliance and integration of technology in the tax system; (4) expanding the tax base through intensification and extensification; (5) strengthening synergy through joined programs, data utilization, and law enforcement; (6) maintaining the effective implementation of the new tax law (UU HHP) to boost an increase in the tax ratio; and (7) implementing increasingly targeted and measured tax incentives to support business climate and competitiveness, as well as to accelerate high added value economy.

Technical Policies

At the technical level, some measures are taken in the areas of administration, regulation, innovation, and services. To improve the tax administration system, the following measures are taken: (a) modernization of the information system at the Directorate General of Taxation (DGT) by building a tax administration information system with a new technology platform, which covers the entire core functions of tax administration ('Core Tax Administration System', CTAS) ranging from registration, payment, filing, supervision, audit, investigation, collection, objections, and appeals, which are consolidated through an integrated accounting system; (b) the application of electronic tax invoices (e-invoices) nationwide; (c) application of stratification and classification of offices based on the taxpayer's segment; and (d) development of a risk-based taxpayer compliance management model ('Compliance Risk Management', CRM).

In improving the tax regulations related to the Job Creation Law, the Government and the House of Representatives have also formulated and enacted Law No. 7 of 2021 on the Harmonization of Tax Regulations (UU HPP). The law aims to:

a. Increase sustainable economic growth and support the acceleration of economic recovery;
b. Optimize state revenues to finance national development independently towards a just, prosperous, and thriving Indonesian society;
c. Establish a tax system that is more equitable and legally certain;
d. Implement administrative reforms, consolidative tax policies, and expansion of the tax base; and
e. Improve voluntary compliance of Taxpayers.

Specifically, the law calls for the preparation and implementation of policy regarding the Roadmap on Carbon Tax and Carbon Market that are closely related to the emission reduction strategies in Goal 13. This is further translated into Presidential Regulation (Perpres) No. 98 of 2021 on the Implementation of Carbon Economic Value (NEK).

As an innovative step in accessing third-party data information, the Ministry of Finance collaborates with agencies, institutions, associations, and other parties, and pushes for the implementation of Automatic Exchange of Information (AEOI) with the issuance of Law No. 9 of 2017 on the Enactment into Law of the Government Regulation in Lieu of Law No. 1 of 2017 on Access to Financial Information for Tax Purposes as a form of the Indonesian Government's commitment to the global initiative.

Further, in delivering simple, inexpensive, fast, and accurate tax services, the Ministry of Finance has made a number of initiatives which include (a) the establishment of Micro Tax Offices and the provision of 'Mobile Tax Unit' (MTU); (b) standardization of One-Stop Integrated Service (TPT); (c) ease in filing Tax Returns through electronic channel; (d) simplification of business processes and addition of payment channels to facilitate tax payment; (e) MSME development through the 'Business Development Services' (BDS) program; (f) implementation of tax inclusion programs in the national education curriculum to increase public awareness of tax obligations; and (g) improvement in the quality of tax information services by increasing the capacity of call center.

Strengths

Tax reform is a standard and requirement of a civilization in line with the development of economy and society. It is the impetus for the formulation and implementation of more fair and effective tax policies.

Expansion of tax subjects and objects is possible, including other subjects and objects for state revenue, such as customs and excise and non-tax state revenue (PNBP). This can be seen, for example, in productive economic activities, such as the digital economy, which develops very fast as demonstrated in e-commerce, online travel, online media, and ride hailing sectors.

In regard to authority, access and exchange of data with various data sources is also possible. This is supported by the availability of taxpayers' data, of taxpayers registered under their Single Identity Number (NIK) and Tax ID Number (NPWP), as well as in the data of taxpayers who participated in Voluntary Tax Disclosure (PPS) program. This is also supported by the availability of information technology to collect and utilize data of taxpayers and tax objects, including the use of digital forensic activities. In line with that, the expansion of payment channels has now been supported by the availability

of various marketplace platforms and modern retail stores that have proven to be technically capable and secure.

Challenges

Tax reform is not a low-cost investment. The tax authority is faced with real and serious challenge to demonstrate the reform's positive impact on tax revenue. The expansion of tax subjects and objects also requires knowledge, awareness, and commitment of other tax stakeholders, both within and outside the government.

Transaction databases, both digital and non-digital, must continue to be explored and developed. This requires increasing the technical capacity of tax administrators to be able to keep up with the development of digital technology.

Areas of Improvement

Tax reform can be expanded and deepened towards ethical and legal enforcement for tax officers, as well as towards creating tax culture among taxpayers. This means that tax reform is not only about improving the administration and technology of the tax ecosystem, but also improvements in governance and ethics of tax officers. At the same time, tax reform can take the form of completed, scheduled, and technically measured commitments

The expansion of tax objects and subjects can be directed at the extensification of region-based taxation by developing a complementary tool of "Tax Area Mapping" that describes the economic potential of a region and the designation of tax targets. In line with that, comprehensive regulations of a technical nature in electronic transactions and the digital data economy can be formulated and developed adaptively. At the same time, the expansion of tax objects and subjects is important to continue to be directed and oriented towards the principle of user experience (UX) as an active form of "Know Your Customer" (KYC).

Data on tax base and tax objects can be used effectively to produce the profiles of taxpayers and tax objects along with their tax characteristics and behavior. It is important to see data in a new perspective, i.e., as a 'resource or mine for tax revenue'. Overall, Indonesia's tax ecosystem can be directed towards sustainable taxation to balance sustainable financing and sustainable budgeting that have been initiated in deficit financing and state expenditure.

Extra efforts need to be pursued by transforming State Finance policy as stated in the National Long-Term Development Plan (RPJPN) of 2025–2045. The direction of tax revenue policy as stated in the 2025–2045 RPJPN includes (i) acceleration of tax policy reform and tax administration reform in line with the transformation into a more productive economic structure; (ii) increased tax base through law enforcement and taxpayer compliance, and by encouraging the informal sector to transform into formal sector; (iii) exploration of new sources of tax revenue (such as sin tax, carbon tax) as well as from non-tax sources in order to reduce dependence on natural resources; and (iv) provision of appropriate fiscal incentives to spur investment and development of regional-based priority sectors.

Achievement Strategies for Increasing the Use of Enabling Technology, Particularly Information and Communication Technology, by Increasing the Percentage of Internet Users

General Policies

The policy of investing in high-speed internet infrastructure in urban and rural villages as well as public service hotspots, as stated in the Strategic Plan of the Ministry of Communication and Informatics (Renstra Kominfo) 2020–2024, is an important general policy in achieving the expansion of internet users. This investment involves providing physical connectivity networks and IT-supporting infrastructure of '4G'—even '5G', primarily to non-commercial areas, including the '3T' areas (outermost, frontier, and underdeveloped regions) that are still in need. Included in this infrastructure investment is to complete the development of SATRIA 1 and SATRIA 2 satellites as well as the preparation of fiber-optic-based fixed broadband services to all sub-districts, or even villages. This general policy acts as a necessary condition for the technical policies that follow after.

This general policy on infrastructure investment, as stated in the 2020–2024 Strategic Plan of the Ministry of Communication and Informatics, is also supported by several supporting general policies. First, to support the application of forward-looking technology. Second, to develop digital talents/human resources and the digital economy ecosystem. Third, to implement the National Data Centre Integration and government's digital transformation. Fourth, to accelerate the completion of primary legislation. Fifth, to orchestrate public communication that involves national and subnational governments. Sixth, to improve the quality of internal management services.

Technical Policies

The above general policies are translated into a number of technical policies in providing ICT infrastructure to all regions across Indonesia, with good quality and publicly affordable services. This role has become very significant in line with the COVID-19 pandemic and its mitigation policies that require internet and technology support. Internet broadband with the quality and speed of 4G, or even 5G, is the main requirement not only for people of the working class, but also for people and communities in teaching and learning and business activities.

The above policies are translated into several groups of technical policies. First, the provision of fast and affordable broadband internet in non-commercial areas. Through the Telecommunication and Information Accessibility Agency (BAKTI), the Universal Service Obligation (USO) funds are used to provide and maintain access to telecommunication and broadband internet services in non-commercial areas, and provide satellite capacity to support these services.

Second, the acceleration of broadband internet provision in commercial areas. This policy is implemented in the sub-district fiber-connectivity program to reach every sub-district in Indonesia with fixed broadband access networks/services through intensive coordination with stakeholders. In line with this, facilitation is also given to the operators to provide 4G cellular access to underserved areas in commercial areas. In addition, the installation of fixed broadband networks by operators are also better facilitated with the necessary regulations. At the same time, fixed broadband penetration into households is also carried out, including better quality telecommunications services for the public.

Third, policies supporting a sustainable IT industry. In this regard, a series of technical policies are prepared, i.e., policies that maintain the level of investment in telecommunications operators. This is also followed by regulations to support the efficiency of the telecommunications industry. In line with that, policies are also developed to encourage new business models and the sustainability of the telecommunications industry.

Furthermore, there are two other technical policy groups to support and strengthen these policies. First, improving the quality of telecommunication services, consisting of (a) Construction of Telecommunication Monitoring Centers; and (b) Measurement of telecommunication service quality, namely Quality of Services (QoS) and Quality of Experience (QoE). Second, the preparation and implementation of 5G nationally. This includes the preparation for the implementation of 5G at the national level, i.e., the preparation of roadmap and the designation of locations. In line with that, the implementation of 5G connectivity in the new capital city of Nusantara (IKN) has been specified to achieve 100% coverage of fiber optic networks and 4G mobile cellular services, and is ready to implement 5G technology.

Strengths

a. The provision of fast and affordable broadband internet has become a demand and standard of civilization—both in non-commercial areas and even more in commercial areas—in line with the development of technology and society. This is the impetus for the formulation and implementation of policies for providing more equitable and effective broadband internet.
b. The IT sector is an industry that keeps growing. Supporting infrastructure is strongly needed. Investment in this sector and the supporting sector will continue to take shape and grow to move towards sustainable IT investment.
c. Improved service quality is a follow-up or concomitant demand embedded as the software that supports the hardware investment.
d. Technically, 5G technology has been applied and developed in various developed countries. Not only Indonesia can adopt and adapt it, but it can also make technical and non-technical improvements in its dissemination.

Challenges

a. Indonesia's vast and varied geography is a real challenge that must be anticipated. The consequence is that a huge investment is always needed for the provision of physical broadband internet infrastructure.
b. The activities in providing physical internet infrastructure and its supporting components still have to deal with the limited use of the internet in productive and innovative economic activities. In line with that, the digital divide remains a serious challenge today and for some time into the future.
c. Support services in internet utilization need to be improved and managed in a cluster of standards with defined and measurable outcomes.
d. The development of 5G technology is still limited in terms of technical implementation and investment.

Areas of Improvement

a. To keep up with the speed of physical infrastructure development, policy improvement can include comprehensive and sustainable development of digital human resources, ranging from 'digital literacy', 'digital talent', to 'digital ethics' and 'digital era leadership'.
b. Another required balance is to strengthen the digital economy ecosystem by facilitating MSMEs/Micro Enterprises in doing online business, digital technology by farmers/fishers, and digital start-ups. This includes support for activating participation in the digital ecosystem for persons with disabilities, seniors and the elderly, marginalized communities, and other disadvantaged groups. In line with that, the areas of improvement can also include the formation of instruments and the mapping of the digital divide and its determinants to be done periodically by age groups (the youth, seniors, and the elderly), gender, location (geography),

persons with disabilities, etc. to create policies that are oriented towards user-X, customized, and specific.

Improvements can also be driven towards the completion of primary legislation supporting the digital ecosystem, particularly the Personal Data Protection Bill and the implementing regulations for the Law on Job Creation in the IT sector which promotes the acceleration and expansion of digitalization of government, business, and community activities.

Achievement Strategies for Increasing the Market Share of Global Exports

General Policies

The direction of foreign trade policy as stated in the 2020–2024 National Medium-Term Development Plan (RPJMN) is focused on boosting the growth of foreign trade of Indonesian goods and services by using global production chains and expanding export products and destination markets, implemented through the following strategies: (i) increasing diversification, added value, and competitiveness of export products and services; (ii) increasing access and deepening of export markets; (iii) increasing participation in global production networks; and (iv) increasing the effectiveness of the Preferential Trade Agreement (PTA)/Free Trade Agreement (FTA)/Comprehensive Economic Partnership Agreement (CEPA) and economic diplomacy.

Technical Policies

At the technical level, the export enhancement and expansion strategy is focused on (i) increasing exports of medium and high value-added industrial products; (ii) increasing export of services by increasing the capacity of service providers based on competence, harmonization of regulations in the service sector, and availability of trade statistics on service; (iii) strengthening export and import information platforms that include market information, regulations and procedures, as well as incentives and advocacy on bilateral and multilateral cooperation; (iv) developing export-oriented marketplaces, including those that can be utilized by MSMEs and technology start-ups to supply products and services to the international markets, and (v) facilitating increased competitiveness of Indonesian goods and services brands.

Increasing access to and deepening of export markets is carried out through (i) support for export and import financing; (ii) strengthening business-to-business cooperation schemes; (iii) market expansion to Africa, Latin America, and Eastern Europe.

Meanwhile, increasing participation in global production networks is carried out through (i) providing fiscal incentives for raw materials through ease of import for export purposes and (ii) facilitation of imported raw materials for export purposes.

Further, improving the effectiveness of the Preferential Trade Agreement (PTA)/Free Trade Agreement (FTA)/Comprehensive Economic Partnership Agreement (CEPA) and economic diplomacy is carried out through (i) strengthening trade representatives abroad; (ii) offering integrated promotions; and (iii) expanding Indonesia's active participation in international organizations and initiatives such as ASEAN, WTO, APEC, OECD, and other regional/sub-regional cooperation.

Strengths

Indonesia's export market share has increased compared to 22 years ago. In 2001 Indonesia's export share was recorded at 0.9%, but 2022 saw the highest global market share of 1.2%. Going forward, Indonesia's share of exports could potentially increase in line with the expansion of market access, diversification and increase in the added value of export products, as well as the utilization of trade agreements.

Indonesia still has an untapped potential for exports to major trading partners such as China, US, India, Japan, and ASEAN countries for which export value reaches USD58.8 billion. Indonesia also has the opportunity to increase its share of exports to countries that are projected to have high level of population and consumption, such as Africa and India. In 2030, Africa's population will reach 1.7 billion, India's 1.5 billion, and China's 1.4 billion, thus predicted to be the largest consumer for increasing Indonesia's exports.

With abundant and highly-varied natural resources, Indonesia has great opportunities to boost exports of fishery and agricultural products, exports of natural resource-based industrial products such as the food and beverage industry and base metal industry, as well as industries with high value-added products that are connected to the regional supply chains, such as machinery and electrical equipment; and means of transportation.

The potential export of Indonesia's halal products to the Organization of Islamic Cooperation (OIC) countries is also expected to increase Indonesia's export market share, primarily of products such as halal food, Muslim fashion and cosmetics and pharmaceuticals. In 2020, Indonesia's halal product global export was worth USD8.6 billion, placing Indonesia as the 9th largest exporter in the world and the 2nd largest exporter among OIC countries.

Various bilateral and regional trade cooperation (PTA/FTA/CEPA) are expected to increase Indonesia's access to market, especially in reducing tariff and non-tariff barriers in both traditional and non-traditional markets.

Challenges

Supply Side:

The low competitiveness of Indonesia's export products due to low industrial productivity due to various supply-side factors that cause high-cost economy. This includes the following:

a. Access to energy sources in various parts of Indonesia remains less affordable, and energy costs are relatively more expensive compared to its peers.
b. Labor productivity is relatively lower than its peers because quality of human resources (education and skills) was less than optimal, labor costs are relatively more expensive, labor movement between sectors and between regions is relatively slow, and a small number of experts in high-tech sectors.
c. Limited technology and innovation in R&D, both by the government and businesses, causing low product competitiveness.
d. Access to and supply of raw materials are not optimal, both domestic and imported.
e. Limited infrastructure for the connectivity and unequitable development of areas between regions, as well as rather high logistics costs, causing economic imbalances and hindering efficiency in domestic and global supply chains.
f. Industrial and investment policies are yet to fully promote exports.
g. The low acceptance rate of export products in the destination countries as the quality of export products and regulations have not reached international standards.
h. Low export competitiveness as export products are mainly commodities, due to limitations in product diversification and low participation in the global value chain.
i. Various issues related to export financing due to issues related to business scale, type of financing, accessibility, risks, and high transaction costs.
j. Lack of optimal ecosystem for sound business competition in Indonesia.

k. No integration of trade information and facilitation, particularly on exports, causing inefficiencies for businesses to access export information and to export.
l. Standardization of export products is not optimal, costly product certification, and complex licensing processes to meet international standards.
m. Low awareness at the subnational level to take actions to develop and diversify exports in their region.
n. Climate change and environmental challenges causing uncertainties that could potentially reduce export supplies, especially food and agricultural products.
o. The potential for developing and increasing the use of digital technologies (IoT, AI, VR, and blockchain) that will gradually be introduced into the production process.

Demand Side:

a. Geopolitical tensions in a number of major trading regions have led to increased protectionist policies and high trade barriers (NTMs) in several countries.
b. Increased potential of market disruptions associated with many factors, such as fluctuations in global commodity prices that can create volatility in international markets. In addition, climate change causing climate uncertainties which could potentially lead to export restrictions by some countries.
c. Low competitiveness of domestic exports as it is dominated by commodities, due to limitations in product diversification and low participation in the global value chain.
d. Decarbonization policies in several countries to promote green trade and accelerate the transition to a low-carbon economy.

Areas of Improvement

General improvements

a. There is a need for diversification of Indonesia's industrial products that are competitive in international trade.
b. The promotion of Indonesian products in the international markets needs to be improved. The government can support effective promotional campaigns, as well as expand participation in trade shows and international promotional events. In this case, branding and a positive image of Indonesia should also be improved.
c. Simplifying trade procedures and reducing bureaucracy can boost trade growth. The government should strengthen policies and regulations related to the export-import processes, including licensing, customs procedures, and other trade regulations. This includes the facilitation of and assistance for obtaining IPR.
d. Improving human resources of businesses through training and education. Improved human resources may spur new innovations.

Technical Improvements

Demand Side

a. Increasing export market expansion to countries that have the largest consumer potential, such as Africa, China, and India through increased trade diplomacy.
b. Increasing the effectiveness of trade promotion and cooperation by increasing the number of principal trade representatives in China, India, Africa.
c. Strengthening economic diplomacy and establishing CEPA, mainly Indonesia-India.
d. Opening direct flights to potential destination countries (China, India, Africa) in airports other than the Soekarno-Hatta airport.
e. Strengthening international banking services by establishing more national banking representatives overseas to facilitate export financing facilitation.

Supply Side

a. Increasing the number of new exporters entering the market through training and mentoring.
b. Harmonizing the information systems which include market and buyer information, supply chains from upstream to downstream, international product standardization and licensing that has not been integrated between Ministries/Agencies. These are aimed to increase the integration and digitalization of trade facilitation by way of (i) reducing the creation of new platforms; (ii) provision of up-to-date data and information; (iii) dissemination and assistance for businesses to have access.
c. Strengthening exports of the livestock and fisheries sectors; (ii) agriculture and plantations; (iii) food, beverage, and tobacco industry; (iv) base metal industry; (v) machines and electrical equipment industry; (vi) transportation industry; and (vii) other manufacturing industries.
d. Strengthening access to supply chain information from upstream to downstream, particularly for livestock and fishery products as well as agriculture and plantations.
e. Ease of access to raw materials by minimizing importation barriers to raw materials.
f. Supporting the use of renewable energy by providing fiscal and non-fiscal incentives to prepare for the green trade transition.
g. Increasing R&D to encourage innovations and efficiency in the production process of high value-added export products.
h. Facilitating businesses to obtain financing support from export financing institutions or related fund management institutions, such as providing low-cost business and export loans for prospective exporters, diversifying the types of funding, facilitating businesses in obtaining alternative financing without any collateral, including better outreach on the role of export product insurance.
i. Accelerating logistics and distribution improvements, including main and supporting infrastructure, productive human resources, and digitalization.
j. Increasing diversification of export products such as halal products and Muslim fashion to OIC countries, gastronomic exports by opening more Indonesian restaurants or main franchise in East Asia & Southeast Asia, as well as spice products in India.

CHAPTER III

INTERLINKAGES ANALYSIS SDGs INDICATORS

CHAPTER III
INTERLINKAGES ANALYSIS BETWEEN SDGS INDICATORS

A. Mapping the Interlinkages of SDGs Indicators

This chapter presents interlinkages analysis between SDGs indicators based on data from 191 SDGs indicators in Indonesia. Interlinkages analysis between SDGs indicators can provide better understanding on how progress in one indicator can affect achievement in other indicators. Interlinkages between SDGs goals, targets, and indicators can be used to identify strategic priorities and effective actions to accelerate comprehensive SDGs achievements. Interlinkages analysis between SDGs indicators is helping to understand policy and intervention implications on various aspects of sustainable development, enabling more appropriate and efficient decision making. Thus, Indonesia's SDGs roadmap is expected to become more inclusive, holistic, integrated, and effective to support achieving sustainable development.

Centrality values in the SDGs roadmap illustrate how far an indicator is connected to other indicators in the SDGs indicator network. Although SDGs interlinkages analysis uses provincial-level data, centrality values are national in nature and mapping of priority indicators in this roadmap is also done at the national level. Meanwhile, proximity values illustrate the ease of using a region's capacity among various SDGs indicators depending on the degree of similarity between these indicators.

Table 3.1 displays a list of indicators based on their centrality values obtained from interlinkages analysis between indicators. The table shows which indicators have stronger interlinkages with other indicators in the context of SDGs. The information provides a big picture of indicators that have significant influences in achieving overall sustainable development goals.

Furthermore, based on proximity and centrality values of the analyzed 191 indicators, it can be visualized as shown in Figure 3.1. It shows that at least 36 indicators with the highest centrality values are the core of the network. These indicators are related to health (healthcare facilities, health workers, and national health insurance/JKN), justice (birth certificate and security), proper water and sanitation, education (education completion rate, school infrastructure, and ICT), inequality (underdeveloped villages), energy (electricity), food (stunting), adequate housing, and environment (air quality, emission reduction). These indicators reflect essential requirements that are the foundation and leverage for achieving other indicators. These findings are consistent with findings reported by UNESCAP (2016).

Based on centrality values (Table 3.1) and the visualization (Figure 3.1), priority indicators with the highest centrality values are identified. There are some basic service-related indicators with high centrality values, such as access to healthcare facilities (3.1.2*), having a birth certificate (16.9.1.(a) & 16.9.1.(b)), access to proper drinking water and sanitation (6.1.1*, 6.2.1*, and 1.4.1*), and access to health workers (3.1.2*). These indicators have strong interlinkages with other indicators and may potentially have broad impacts.

Indicator 3.1.2* "Proportion of ever-married women 15–49 years of age whose latest birth process is (b) carried out in a healthcare facility", for instance, have the highest centrality value among 191 analyzed indicator-dimensions. The indicator is related to 18 other indicators at proximity values above the 0.7 threshold. Those related indicators are, among others, women whose birth process is attended by skilled health personnel (3.1.2*_1), access to National Health Insurance/JKN (3.8.2.(a)), stunting (2.2.1*), access to proper water and sanitation (1.4.1*_2, 6.1.1*, 6.2.1*_2), disaster strategy (1.5.4*), primary/SD and lower secondary/SMP education completion rate (4.1.2*_1, 4.1.2*_3), ICT skills (4.4.1.(a)_1), women in managerial positions (5.5.2*_1), electrification (7.1.1*), underdeveloped villages (10.1.1.(b)), victims of violence (11.7.2.(a) &, 16.1.3.(a)), reduction of greenhouse gas emission (13.2.2.(a)), and

coverage of birth certificate (16.9.1.(a), & 16.9.1.(b)). Detailed interlinkages for other indicators can be viewed in Figure 3.1 and SDGs interlinkages dashboard.

Furthermore, other important indicators to accelerate SDGs achievement is ICT skills (4.4.1.(a)), health worker density and distribution (3.c.1*), reduce the number of underdeveloped villages (10.1.1.(b)), electrification (7.1.1*), reduce stunting (2.2.1*), and primary and secondary education completion rate (4.1.2*).

Success in achieving these indicators can positively influence achievement of other indicators. Therefore, developing and improving the quality of these indicators can significantly contribute to achieve SDGs targets and improve overall public welfare.

Interlinkages analysis between SDGs indicators in this roadmap is consistent with recommended SDGs targets in previous Indonesia's roadmap. In the previous roadmap, there are four SDGs targets identified as major priorities, namely Free primary and secondary education (Target 4.1), Doubling energy efficiency (Target 7.3), Universal health coverage (Target 3.8), and Increase renewable energy (Target 7.2). Furthermore, acceleration of SDGs achievements in the previous roadmap is also supported by provision of basic services, such as access to adequate housing (11.1), and proper drinking water (6.1) and energy (7.1).

The current study provides a more detailed results compared to the interlinkages analysis between SDGs indicators in the previous roadmap. Results from the interlinkages analysis between SDGs indicators in this roadmap affirmed the importance of achieving these targets as represented by indicators with quite high centrality values among the targets including, completion rates of primary education (SD), lower secondary education (SMP), and upper secondary education (SMA), coverage of electrification, coverage of National Health Insurance, eradication of leprosy and malaria, as well as coverage of access to adequate housing.

Even though both use provincial-level data, the centrality sequence in this roadmap showed a slight difference compared to the study by Anna, et al. (2021). Top centrality in the study by Anna, et al. (2021) is dominated by indicators related to education, then followed by indicators on health and justice (birth certificate). These differences may be caused by the difference in performance data being used, where the roadmap uses data from 2021, encompassing the period when the COVID-19 pandemic occurred. Consequently, health-related indicators are dominating centrality values in this roadmap, followed by education indicators.

Indicators with high centrality values in this roadmap are relatively consistent with findings from previous studies. Access to basic services, such as healthcare, clean water, and sanitation, continue to be the main focus. Previous studies, such as El-Maghrabi et al. (2018), identified that clean water and sanitation, health, poverty eradication, affordable and clean energy, gender equality, sustainable cities and communities, are some of the goals with strong correlation to one another. Even the study by Komarulzaman et al., (2020) with district-level scope identified similar priority indicators, such as access to healthcare services (health workers, healthcare facilities), having a birth certificate, and sanitation, also followed by access to electricity and information technology. The latest study by Anna et al. (2021) also discovers that indicators related to basic services, such as proper sanitation, education, electricity, and internet, are indicators that have strong interlinkages with other indicators.

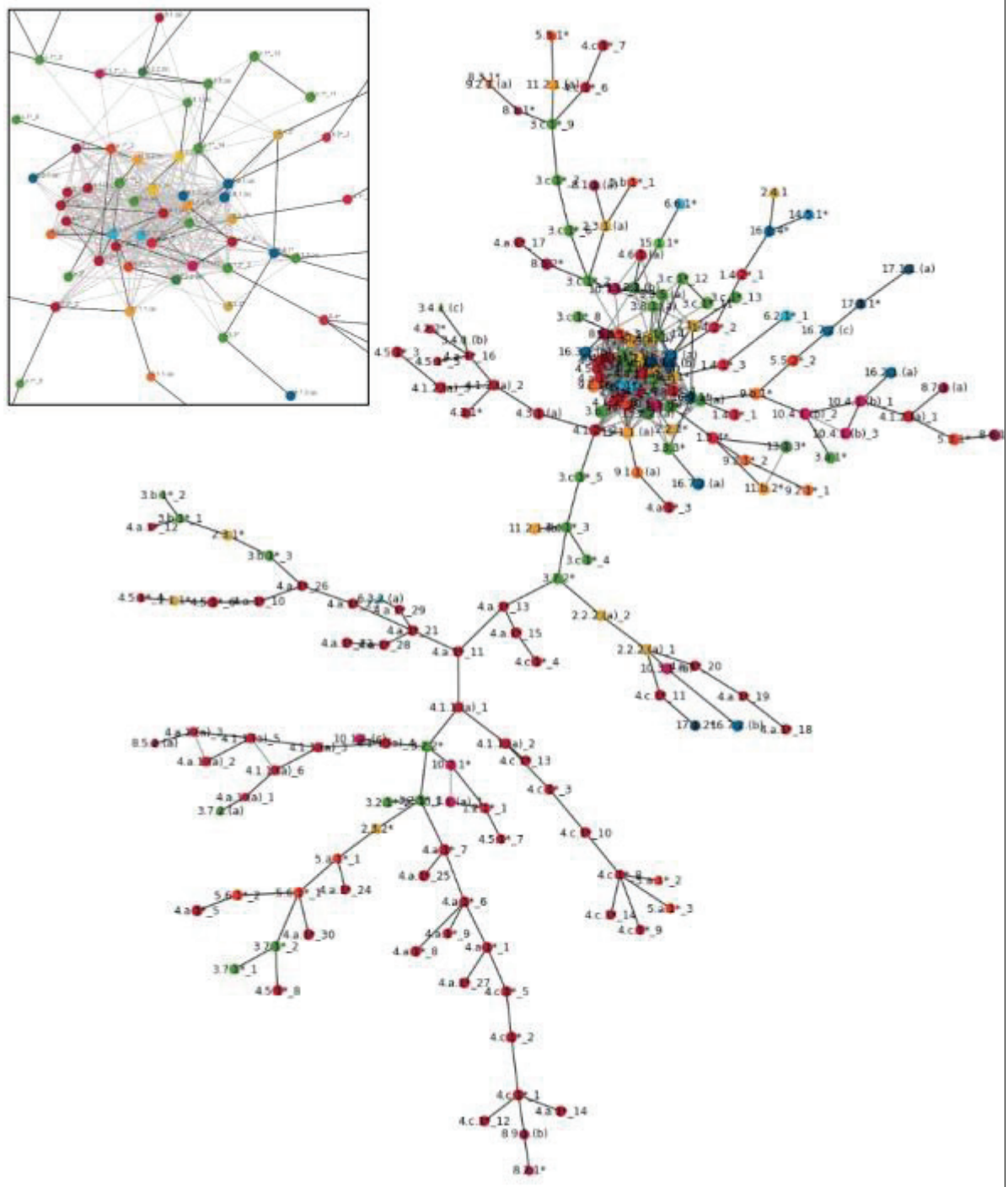
Table 3.1 SDGs Centrality

No.	Code	Name	Centrality	No.	Code	Name	Centrality	No.	Code	Name	Centrality	No.	Code	Name	Centrality
1	3.2.2*_2	Childbirth in Healthcare Facilities	84.15	49	2.2.2*	Wasting	76.57	97	15.1.1*	Forest Area	63.84883	145	2.3.1*	Production per employed person in agriculture	55.91
2	16.9.1.(1)	Birth Certificate for low-income 40%	84.11	50	3.8.1.(a)	Unmet health needs	76.38	98	4.a.1*_25	Sanitation - Vocational Schools (SMK)	63.80	146	3.7.1*_1	Modern Family Planning: Women of Reproductive Age	55.77
3	16.9.1.(b)	Children Birth Certificate	84.11	51	16.3.1(a)	Reporting by Victims of Violence	75.47	99	3.c.1*_4	Specialist Doctors	63.12	147	17.1.1.(a)	Tax Ratio	55.56
4	6.1.1*	Improved Drinking Water	83.82	52	10.1.1*_1	Gini	75.26	100	14.5.1*	Conservation of marine waters	62.83	148	2.4.1	Productive and sustainable farming	55.39
5	6.2.1*_2	Improved Sanitation	83.59	53	10.4.1(b)_2	Social Insurance for Employment: non-wage earners	75.05	101	16.7.2.(c)	Equality	62.67	149	4.a.1*_23	Sanitation - Lower Secondary Schools (SMP)	55.34
6	1.4.1*_2	Access to Basic Services: sanitation	83.59	54	1.4.1*_1	Access to Basic Services: drinking water	74.81	102	4.a.1*_1	Electricity - Primary Schools (SD)	62.62	150	2.3.2*	Income of small-scale farming	55.09
7	3.1.2*_1	Childbirth by Skilled Health Personnel	53.57	55	13.2.2.(b)	Reduction in GHG emission intensity	74.38	103	4.a.1*_17	Water - Special Needs Schools (SLB)	62.54	151	4.a.1*_13	Computer - Lower Secondary Schools (SMP)	54.66
8	4.4.1.(a)_1	Adolescent ICT	82.98	56	3.c.1*_6	Nurses	74.34	104	4.c.1*_6	Undergraduate/4-year Diploma Teachers - Upper Secondary Schools (SMA)	62.47	152	8.9.1.(b)	Domestic Tourists	54.12
9	3.c.1*_14	Biomedical Workers	82.75	57	4.6.1.(a)	Literacy ≥ 15 years	74.31	105	5.6.1*_2	Women's decision: Couples of Reproductive Age	62.06	153	5.b.1*_1	Mobile phones (>0 year)	53.97
10	3.c.1.1*_1	Pharmacists	82.73	58	3.c.1*2	Midwife workers	74.09	106	11.2.1.(a)	Convenient Access for Public Transportation	62.00	154	4.a.1*_18	Water - Lower Secondary Schools (SMP)	53.88
11	10.1.1.(b)	Underdeveloped Villages	82.56	59	1.4.2*_2	Land Right: Lease/Rent	73.84	107	4.c.1*_4	Undergraduate/4-year Diploma Teachers - Special Needs Schools (SLB)	61.83	155	4.1.1.(a)_5	Minimum proficiency: Reading - Upper Secondary Schools (SMA)	53.65
12	7.1.1*	Electrification	82.47	60	4.a.1*3	Electricity - Lower Secondary Schools (SMP)	73.36	108	4.5.1*_8	GGAP_APKPT	61.79	156	4.a.1*_28	Hand washing - Lower Secondary Schools (SMP)	53.19
13	2.2.1*	Stunting	82.44	61	9.1.1.(a)	All season road	73.23	109	4.1.2.(a)_2	Upper Secondary Education Drop Out	61.73	157	4.c.1*_8	Certified teachers: Total	53.17
14	4.1.2*_3	Lower Secondary Education Completion Rate	82.31	62	5.5.2*_2	Women: Echelon 2	73.06	110	3.c.1*_9	Public health workers	61.71	158	10.1.1.(c)	Independent Villages	53.01
15	4.a.1*_4	Electricity - Upper Secondary Schools (SMA)	82.12	63	5.3.1*	Have Married <18 years	72.91	111	8.7.1.(a)	child workers	61.65	159	5.a.1*_3	Women farming in own land	52.61
16	3.c.1*_12	Physical Therapists	82.06	64	3.c.1*_8	Environmental health workers	72.51	112	3.7.1*_2	Modern Family Planning: Couples of Reproductive Age	61.62	160	4.1.1.(a)_3	Minimum proficiency: Reading - Lower Secondary Schools (SMP)	52.35
17	11.1.1.(a)	Adequate Housing	81.87	65	3.a.1*	Smoking	72.48	113	4.1.1.(a)_4	Minimum proficiency: Mathematics - Lower Secondary Schools (SMP)	61.50	161	4.a.1*_9	Internet - Upper Secondary Schools (SMA)	51.51
18	16.9.1*	Under 5 years Birth Certificate	81.84	66	8.6.1*	NEET	72.34	114	4.a.1*_14	Computer - Upper Secondary Schools (SMA)	61.46	162	4.c.1*_14	Certified teachers: Vocational Schools (SMK)	51.18
19	11.7.2.(a)	Victims of Violence	81.67	67	4.3.1.(a)	APK PT	72.08	115	4.c.1*_11	Certified teachers: Special Needs Schools (SLB)	61.43	163	4.c.1*_9	Certified teachers: Kindergarten (TK)	51.10
20	16.1.3.(a)	Victims of Violence	81.67	68	10.4.1.(b)_1	Social Insurance for Employment: wage earners	71.70	116	1.2.1*_1	Poverty	61.21	164	4.1.1.(a)_6	Minimum proficiency: Mathematics - Upper Secondary Schools (SMA)	50.99
21	3.c.1*_11	Medical Technicians	81.50	69	4.1.2.(a)_1	Primary Education Drop Out	71.53	117	10.1.1.(a)_1	Poverty	61.21	165	2.1.1*	Prevalence of Undernourishment	50.87
22	4.5.1*_1	GGAP_APMSD	81.42	70	8.5.2*	Open Unemployment	71.28	118	4.a.1*_30	Hand washing - Vocational Schools (SMK)	61.20	166	5.5.1*	Women: Provincial House of Representatives	50.69
23	4.5.1*_2	QGAP_APMSD	81.42	71	9.2.1*_2	Manufacturing added-value/capita	71.27	119	4.c.1*_5	Undergraduate/4-year Diploma Teachers - Lower Secondary Schools (SMP)	61.10	167	4.a.1.(a)_2	Bullying: Lower Secondary Schools (SMP)	50.24
24	13.2.2.(a)	Reduction in GHG emission	81.40	72	4.a.1*_7	Internet - Special Needs Schools (SLB)	71.18	120	4.a.1*_6	Internet - Primary Schools (SD)	60.97	168	5.a.1*_1	Farmland ownership: men	49.36
25	2.1.2*	Food Insecurity (FIES)	81.16	73	1.4.2*_1	Land Right: Ownership	71.12	121	4.a.1*_8	Internet - Lower Secondary Schools (SMP)	60.82	169	4.a.1*_24	Sanitation - Upper Secondary Schools (SMA)	48.91
26	4.1.2*_1	Primary Education Completion Rate	81.07	74	10.4.1.(b)_3	Social Insurance for Employment: construction service	71.04	122	8.1.1.(a)	GDP per capita	60.74	170	4.5.1*_7	QGAP_APKSMA	48.04
27	9.c.1*	Mobile Broadband	80.99	75	4.1.2.(a)_3	Lower Secondary Education Drop Out	70.70	123	17.1.1*	Government revenue	60.68	171	4.a.1*_19	Water - Upper Secondary Schools (SMA)	48.01
28	3.3.5.(a)	Leprosy eradication	80.80	76	4.5.1*_3	GGAP_APKSMP	69.55	124	3.2.1*_1	Under 5 years mortality	60.68	172	3.b.1*_1	Immunization - Measles	47.46
29	4.4.1.(a)_2	Adult ICT	80.66	77	2.3.1.(a)	Agriculture added-value	68.76	125	3.b.1*_3	Immunization: Complete	60.40	173	4.a.1.(a)_3	Bullying: Upper Secondary Schools (SMA)	45.91
30	3.3.3.(a)	Malaria eradication	80.25	78	3.c.1*_7	Nutrition workers	68.58	126	10.2.1*	<50% of Median Income	60.40	174	8.2.1*	GDP Growth per employed person	44.70
31	4.1.2*_2	Upper Secondary Education Completion Rate	80.12	79	3.c.1*_5	General practitioners	68.56	127	3.2.1*_2	Infant mortality rate	59.92	175	4.a.1*_16	Water - Primary Schools (SD)	44.14
32	3.c.1*_13	Clinical Psychologists	80.11	80	16.2.1.(a)	Child violence	67.92	128	5.6.1*_1	Women's decision: Women of Reproductive Age	59.76	176	4.a.1*_29	Hand washing - Upper Secondary Schools (SMA)	44.14
33	3.8.2.(a)	National Health Insurance	79.94	81	9.2.1*_1	Manufacturing added-value/GDP	67.31	129	4.c.1*_3	Undergraduate/4-year Diploma Teachers - Primary Schools (SD)	59.13	177	4.2.2*	Organized Leaning	41.95
34	5.5.2*_1	Women: Managerial Positions	79.69	82	2.2.2.(a)_2	Desirable Dietary Pattern (PPH): 2100	67.23	130	6.6.1*	Land quality index	59.00	178	5.a.1*_2	Farmland ownership: women	41.82
35	16.7.2.(a)	Capacity of Democratic Institutions	79.57	83	3.7.2*	Adolescent Birth Rate	67.22	131	4.a.1*_27	Hand washing - Special Needs Schools (SLB)	58.74	179	4.5.1*_4	QGAP_APKSMP	38.38
36	3.3.3*	Malaria	78.51	84	2.2.2.(a)_1	Desirable Dietary Pattern (PPH): 2000	67.14	132	4.1.1.(a)_2	Minimum proficiency: Mathematics - Primary Schools (SD)	58.61	180	4.5.1*_5	GGAP_APKSMA	37.50
37	11.6.2.(b)	Air Quality	78.27	85	16.1.4*	Safe to Walk Alone	66.91	133	4.a.1*_26	Hand washing - Primary Schools (SD)	58.08	181	4.a.1.(a)_1	Bullying: Primary Schools (SD)	36.66
38	5.b.1*_2	Mobile phones (>5 years)	78.21	86	3.c.1*_3	Dentists	66.63	134	4.a.1*_21	Sanitation - Primary Schools (SD)	57.91	182	3.7.2.(a)	Total Fertility Rate	35.67
39	4.a.1*_2	Electricity - Special Needs Schools (SLB)	78.84	87	4.c.1*_7	Undergraduate/4-year Diploma Teachers - Vocational Schools (SMK)	66.53	135	4.c.1*_13	Certified teachers: Upper Secondary Schools (SMA)	57.69	183	8.1.1*	GDP Growth per capita	34.56
40	3.b.3*	Essential Medicines in Healthcare Facilities	78.64	88	11.2.1.(b)	Serviced by Public Transportation	66.39	136	4.a.1*_11	Computer - Primary Schools (SD)	57.54	184	8.5.2.(a)	Underemployment	33.15
41	1.5.4*	Disaster strategy	78.46	89	4.a.1*_5	Electricity - Vocational Schools (SMK)	65.81	137	4.a.1*_10	Internet - Vocational Schools (SMK)	57.25	185	4.a.1*_12	Computer - Special Needs Schools (SLB)	30.64

42	11.b.2*	Disaster strategy	78.46	90	4.c.1*_2	Undergraduate/4-year Diploma Teachers - Kindergarten (TK)	64.98	138	4.a.1*_22	Sanitation - Special Needs Schools (SLB)	57.20	186	9.2.1.(a)	Manufacturing GDP Growth	29.35
43	13.1.3*	Disaster Strategy	78.46	91	3.2.2*	Neonatal mortality rate	64.87	139	17.1.2*	Tax-funded budget	57.05	187	3.b.1*_2	Immunization: DPT-3	24.69
44	8.5.1*	Average Wage	78.34	92	4.a.1*_15	Computer - Vocational Schools (SMK)	64.76	140	4.a.1*_20	Water - Vocational Schools (SMK)	56.70	188	6.3.2.(a)	Water quality index	14.93
45	1.4.1*_3	Access to Basic Services: hand washing	78.15	93	10.3.1.(a)	Freedom Index	64.75	141	4.c.1*_10	Certified teachers: Primary Schools (SD)	56.39	189	3.4.1.(b)	High Blood Pressure	14.11
46	6.2.1*_1	Hand-Washing Facilities	78.15	94	16.7.2.(b)	Freedom Index	64.75	142	4.c.1*_12	Certified teachers: Lower Secondary Schools (SMP)	56.25	190	3.4.1.(c)	Obesity	10.67
47	7.1.2.(b)	Gas	77.78	95	4.c.1*_1	Undergraduate/4-year Diploma Teachers - Total	64.73	143	4.3.1*	Participation in Education and Training	56.19	191	8.3.1*	Informal non-farm (%)	2.04
48	9.b.1*	High Technology Export	76.94	96	4.5.1*_6	UGAP_APKSMA	64.00	144	4.1.1(a)_1	Minimum proficiency: Reading - Primary Schools (SMP)	56.19				

Note: Table is sorted by centrality values.

Figure 3.1 Network of Indonesia's 190 SDGs indicator-dimensions



Note: (a) The black line depicts a skeleton based on the Maximum Spanning Tree algorithm; The gray line indicates additional connections with proximity greater than the threshold of 0.7 (b) The size of the node (circle) is based on the centrality value; and (c) the color of the node corresponds with the color of the SDG goals.

1. Priority Indicators by Pillar

This sub-chapter describes the mapping of priority indicators by pillar in the SDG interlinkages analysis. This mapping supports the mapping of priority indicators in the previous sub-chapter. The mapping in this sub-chapter is expected to provide further insights into the indicators that are the main focus in each pillar. In addition, the academic paper also provides an analysis of the identification of priority indicators by goal. On the other hand, the visualization of the interlinkages of 191 indicators is available in the SDG interlinkages dashboard for each of the indicators.

Based on the centrality values listed in Table 3.1 and Figure 3.1, it is evident that indicators on social pillar tend to have high centrality value. Further, Table 3.2 shows the grouping of priority indicators based on centrality ranking, which includes the four pillars of development in the SDGs (Social, Economy, Environment, and Justice and Governance) extracted from Table 3.1. Screening was carried out by grouping indicators (which have been sorted based on their centrality value) by ensuring that the group includes indicators from all pillars of development in the SDGs. Based on this process, the first group has 12 indicators, the second group has 15 indicators (ranked 13–27). Further, the third group has 17 indicators (ranked 28–44). This sub-chapter describes the mapping of priority indicators for group 1 and 2.

In the first group, the recommended priority indicators on the social pillar are mainly related to health and education. The first health-related indicator is indicator 3.1.2*_2 Proportion of ever-married women 15–49 years whose latest birth process is (b) carried out in a healthcare facility, with 1st centrality. This indicator is also related to indicator 3.1.2*_1 Proportion of ever-married women 15–49 years whose latest birth process is (a) attended by skilled health personnel (7th centrality). Other priority indicators in health are strongly related to the distribution of health workers, namely indicator 3.c.1*_14 Density and distribution of health workers–Biomedical Technical Workers, and indicator 3.c.1*_1 Density and distribution of health workers–Pharmacists (9th and 10th centrality, respectively). These four indicator-dimensions highlight the importance of equitable access and quality of healthcare services in all regions in Indonesia.

Then, the recommended priority indicators in the social pillar, particularly education, is indicator 4.4.1.(a)_1 Proportion of adolescents (aged 15–24 years) with information and communication technology skills (8th centrality). This shows the need for investment in digital education for the younger generation, especially in facing rapid technological developments.

Further, based on the centrality value in Table 3.1 and Table 3.2, the next priority indicators include the pillar of justice and governance. In this sector, the indicator "Percentage of population at the bottom 40% of income who have birth certificates" (16.9.1.(a)) and "Percentage of children who have birth certificates" (16.9.1.(b)) has high centrality values (2nd and 3rd centrality). These two indicators reflect the importance of having identity documents as it has consequences on the legal aspects and social protection. On the other hand, this shows the need for the fulfillment of basic rights under a more inclusive legal protection framework, especially for children and vulnerable groups.

The next priority indicators in environmental pillar are indicators related to water and sanitation, namely indicator 6.1.1* (a) Proportion of households using safely-

managed drinking water services (Proper Drinking Water) (Ladder 4), and indicator 6.2.1*_2 (b) Proportion of Households Using Improved Sanitation (4th and 5th centrality, respectively). On the other hand, there are indicators that belong in the category of social pillar, but fit better in the environmental pillar in terms of issues and content, namely indicator 1.4.1*_2 Proportion of population/households with access to basic services: (2) access to basic sanitation services (6th centrality). The indicator highlights the importance of access to safe drinking water and proper sanitation.

Priority indicators in the previous three pillars of development need to be supported by indicators in the economic pillar. The priority indicators in the economic pillar are "Number of underdeveloped villages" (10.1.1.(b)) and "Electrification ratio" (7.1.1*) which have high centrality values (11th and 12th centrality). These two indicators reflect the need for inclusive and sustainable economic development, with a focus on developing basic infrastructure and access to energy that can improve the welfare of people in remote areas.

In the second priority group, there are 9 indicators of social pillar that have high centrality, particularly in relation to hunger, health and education. In terms of hunger, two indicators have fairly high interlinkages with other indicators, namely the prevalence of stunting among children under 5 years (2.2.1*), and the prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (2.1.2*). This shows the importance of improving child nutrition and health in achieving the goals of inclusive and sustainable social development. These two indicators are a priority because they reflect the problem of malnutrition in children that has an impact on their growth and development.

In terms of health, indicators related to the density and distribution of health workers are again included in the priority indicators, namely indicator 3.c.1*_12 Density and distribution of health workers - Physical Therapists, and indicator 3.c.1*_11 Density and distribution of health workers - Medical Technicians. This finding again emphasizes the importance of equitable distribution of quality healthcare services in all regions in Indonesia.

In terms of education, four indicators are included in this second priority group, namely indicator 4.1.2*_3 Completion rate of lower secondary education (SMP)/similar level, indicator 4.a.1*_4 Proportion of schools with access to: (a) electricity – upper secondary schools (SMA), indicator 4.5.1*_2 Net Enrollment Rate (NER) in primary education (SD)/similar level: (c) bottom/top quintile, and indicator 4.1.2*_1 Completion rate of primary education (SD)/similar level. These indicators demonstrate the importance of ensuring the completion of equitable, high-quality (including the organs of education), and more inclusive elementary education (primary and lower secondary). In particular, this priority also highlights the importance of adequate access to electricity in schools to create a learning environment that is conducive.

In the environmental development pillar, indicators with high centrality included in the second group are indicator 11.1.1.(a) Percentage of households with access to adequate and affordable housing, indicator 11.7.2.(a) Proportion of the population experiencing violent crimes in the last 12 months, and indicator 13.2.2.(a) Potential reduction in greenhouse gas (GHG) emission. These findings underline the need to ensure that every household has a reasonable, safe, and environmentally friendly place to live.

The importance of safe environment is also covered in the priority indicators in the justice and governance pillar, which are, indicator 16.9.1* Proportion of children under 5 years of age whose births have been registered with a civil authority, by age, and indicator 16.1.3.(a) Proportion of the population who were victims of violent crimes in the last 12 months. This reiterates the importance of legal certainty, especially protection from violent crimes and effective law enforcement.

Furthermore, the economic pillar in this priority group is represented by 1 indicator, the Proportion of population covered by mobile broadband (9.c.1*). This indicator again highlights the importance of inclusive and equitable access and use of information and communication technology as a means to improve connectivity, digital inclusion, and drivers of development in general.

Overall, the priority indicators in each pillar covered various important aspects such as health, education, infrastructure, environment, legal protection, and access to technology. By considering the centrality value and the interlinkages between indicators, it is expected that the selected priority indicators can be a useful guide for policy makers and development practitioners in leading their work towards achieving SDGs effectively and efficiently. By prioritizing these indicators, it is hoped that actions will be more targeted and have a more significant impact in achieving the sustainable development goals.

Table 3.2 Selected Priority Indicators by Pillar

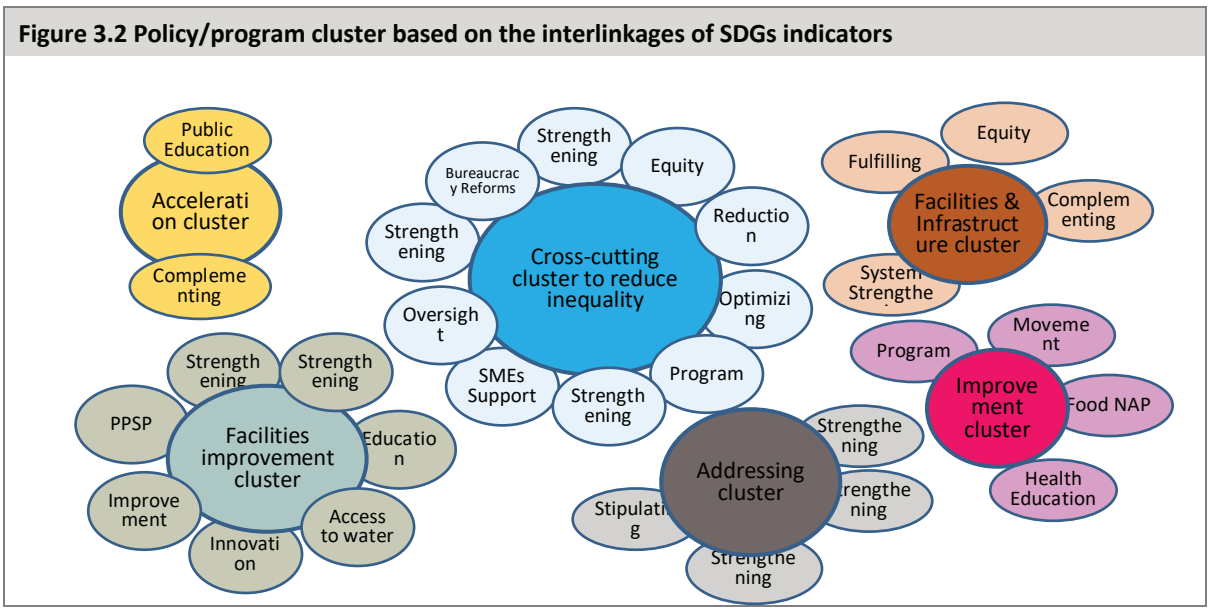
Priority Group	Pillar	Indicator Code	Indicator Name	Rank
1	Social	3.1.2*_2	Proportion of ever-married women 15–49 years of age whose latest birth process is (b) carried out in a healthcare facility	1
	Law	16.9.1.(a)	Percentage of population aged 0–17 years at the bottom 40% of income who have birth certificates	2
	Law	16.9.1.(b)	Percentage of children who have birth certificates	3
	Environment	6.1.1*	(a) Proportion of households using safely-managed drinking water services (Improved drinking water) (Ladder 4)	4
	Environment	6.2.1*_2	(b) Proportion of households using improved sanitation services.	5
	Social	1.4.1*_2	Proportion of population/households with access to basic services: (2) access to basic sanitation services	6
	Social	3.1.2*_1	Proportion of ever-married women 15–49 years of age whose latest birth process is (a) attended by skilled health personnel	7
	Social	4.4.1.(a)_1	Proportion of adolescents (aged 15–24 years) with information and communication technology (ICT) skills	8
	Social	3.c.1*_14	Density and distribution of health workers - Biomedical Technical Workers	9
	Social	3.c.1*_1	Density and distribution of health workers - Pharmacists	10
	Economy	10.1.1.(b)	Number of underdeveloped villages	11
	Economy	7.1.1*	Electrification ratio	12
2	Social	2.2.1*	Prevalence of stunting among children under 5 years of age	13
	Social	4.1.2*_3	Completion rate of lower secondary education (SMP)/similar level	14
	Social	4.a.1*_4	Proportion of schools with access to: (a) electricity - upper secondary schools (SMA)	15

Social	3.c.1*_12	Density and distribution of health workers - Physical Therapists	16
Environment	11.1.1.(a)	Percentage of households with access to adequate and affordable housing	17
Law	16.9.1*	Proportion of children under 5 years of age whose births have been registered with a civil authority, by age	18
Environment	11.7.2.(a)	Proportion of the population experiencing violent crimes in the last 12 months	19
Law	16.1.3.(a)	Proportion of the population who were victims of violent crimes in the last 12 months	20
Social	3.c.1*_11	Density and distribution of health workers - Medical Technicians	21
Social	4.5.1*_1	Net Enrollment Ratio (NER) in primary education (SD)/similar level: (a) women/men	22
Social	4.5.1*_2	Net Enrollment Ratio (NER) in primary education (SD)/similar level: (c) bottom/top quintile	23
Environment	13.2.2.(a)	Potential reduction in greenhouse gas (GHG) emission	24
Social	2.1.2*	Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale	25
Social	4.1.2*_1	Completion rate of primary education (SD)/similar level	26
Economy	9.c.1*	Proportion of population covered by mobile broadband	27

Finally, in selecting the priority indicators, centrality value can be used as a reference to determine the indicators with the most significant relevance for achieving SDGs. Nevertheless, it is important to note that the selection of these priority indicators is only one of the aspects in planning and implementation of the sustainable development agenda. Therefore, interpretation of the centrality should also consider the local context, available data, and national priorities in determining the most relevant and impactful indicators to achieve the SDGs. In this regard, the next section will explain the application of indicators mapping with priority policies/programs.

2. Clustering of Priority Policies Based on Interlinkages of SDGs Indicators

Figure 3.2 Policy/program cluster based on the interlinkages of SDGs indicators



In this sub-chapter, an additional analysis will be performed that links the results of discussion in Chapter 2 (Targets and Strategies for Achieving SDG Indicators) for each goal with the results of discussion of the SDG interlinkages analysis in sub-chapter 3.1. In other words, a policy clustering analysis will be carried out based on the interlinkages of SDG indicators. This clustering has an important purpose in determining priority policies that will turn into priority programs and activities. Being informed about the priority indicators is key in identifying the most effective and efficient policies to achieve SDGs. By understanding the relationship between SDG indicators, we can group policies that have the same focus and goals to enable better resource allocation and more optimal outcomes. This clustering analysis provides a strong foundation for decision-making in determining priority policies that can have an overall positive impact in achieving SDGs.

Nevertheless, it is important to note that this analysis has some uncertainties that are common due to the statistical nature that underlies the interlinkages analysis. Therefore, it is highly recommended that the results of this analysis are contrasted and confirmed with other analyses if they are to be used as a basis for analyzing priority policies or budget allocations. Using a holistic approach and by considering various aspects, the analysis will be stronger and can provide a more solid foundation in decision making.

The analysis starts by tagging the policies/programs as outlined in the analysis of each goal (Chapter 2) along with the indicators to be achieved. As many as 350 relevant policies/programs were identified. Of those, 55 indicators are tagged as measures of success. This finding clearly shows that the 55 SDG indicators can be achieved through various policies/programs. In other words, there is a potential to increase synergy through coordination between programs so that SDG can be achieved in a more cost-effective way. The cost-effectiveness nature of this synergy would of course require a more in-depth analysis of how effective (impact) each policy/program is in achieving the SDG indicators, so that resources are proportionally distributed to the programs.

The subsequent analysis includes analyzing the interlinkages between programs/policies based on the information obtained from the previous tagging exercise. The purpose of this analysis is to identify the potential for better synergies by (a) forming program/policy clusters that have a shared objective of achieving the same indicators, and (b) prioritizing programs that aim to improve SDG indicators that have strong interlinkage.

The next steps after tagging are to (1) identify other indicators that are related to the indicators targeted by the policies/programs; (2) set priorities based on policies/programs whose indicators are linked to many other indicators; (3) identify indicators that have a high level of centrality, and then create program clusters that include the suitable indicators (see Annex "Interlinkages of Key SDG Indicators in the Roadmap with Other SDG Indicators").

From the above analyses, for example, we can identify a number of priority program clusters as follows (see Figure 3.2).

Policy/program cluster 1: Improving children's nutrition quality. Programs in this cluster include the public movement for healthy living; strategic policy on food and nutrition (preparation of a National Action Plan on food and nutrition); various public health programs; and increasing public knowledge, awareness, and awareness of healthy lifestyle. This policy cluster aims to improve public nutrition (Indicator 2.2.2*), especially

for children. It is very strategic as it is an important pathway to improve social mobility, so that children of the poor can escape poverty in their adulthood and will ultimately reduce social inequality in the society, one of the main objectives of the SDGs agenda.

Policy/program cluster 2: Improving the quality and distribution of human resources, facilities and infrastructure of health. Included in this cluster are efforts for a more balanced distribution of health workers, equipping all community health centers with major facilities such as ultrasound examinations, strengthening the referral system, as well as facilities and infrastructure to meet contraception demand. The main target of this cluster is improving indicator 3.1.2* proportion of women whose birth process is attended by skilled health personnel.

Policy/program cluster 3: Accelerating vaccination/immunization. Included in this program cluster are public education to increase acceptance for raising the frequency of vaccination to children, as well as adding two new antigens to the routine immunization schedule for children. This cluster is aiming at SDGs indicator 3.2.1* under-five mortality per 1,000 live births.

Policy/program cluster 4: Improving containment of communicable diseases, particularly Malaria. Programs in cluster 4 include strengthening diagnostics of communicable diseases, improving treatment quality (for instance, using drug combinations), improving treatment synergy between the government and private sector, strengthening Malaria information system, and determining priority areas for intervention. This program cluster is aiming at SDGs indicator 3.3.3* Malaria incidence per 1,000 population. Persistently high Malaria incidence, especially in mothers and children, is leading to other problems such as anemia, premature birth, low birth weight babies, and stunting, which will have a large knock-on effect on other SDGs targets.

Policy/program cluster 5: Improving access to proper and safe drinking water and sanitation. This policy cluster is generally about improving access to proper drinking water. Identified programs that support this policy cluster include developing subnational governments' capacity and increasing cooperations between provinces/districts/cities; improving institutional governance and capacity of administrators; developing and managing drinking water supply system (SPAM); increasing public awareness to apply water-saving behaviors; access to piped water (10 million home connections); preparing the roadmap for Safe Drinking Water; strengthening drinking water platform in urban areas with innovative and effective investment financing; collaboration between provinces/districts/cities by establishing a single Subnational Drinking Water Utility; upgrading the status of subnational drinking water utilities into subnational limited liability companies (Perseroda); increasing the role of non-state actors; advocating for water-saving behaviors, maintaining personal hygiene and neighborhood cleanliness, implemented through Community-Based Drinking Water and Sanitation Provision (PAMSIMAS) approach; accelerated urban sanitation development program (PPSP); developing, mentoring, regulating, supervising the administration of proper and safe drinking water and sanitation supply system. This policy cluster targets SDGs indicators 6.1.1* Proportion of households using safely-managed drinking water services (Proper Drinking Water) and 6.2.1* Proportion of Households Using Improved Sanitation.

Policy/program cluster 6: Cross-cutting policies to reduce inequality. This is a cross-cutting cluster to reduce inequality. The identified programs are originally intended to target other indicators besides inequality, but clustered in programs/policies with a direct target to reduce inequality. Policies or programs in this cluster are Equity of access to

education; Strategic program to reduce stunting; Optimizing village fund; MSME support program; Strengthening infrastructure for agriculture and MSMEs; Strengthening business competition oversight; Tax and regulatory reforms in mining sector; Strengthening bureaucracy reform; addressing financial crimes and money laundering; Strengthening social protection programs; optimizing progressive income tax and luxury goods sales tax. All programs in this cluster are aiming at reducing the figure in indicator 10.1.1* Gini Ratio, which is a headline indicator for inequality.

Policy/program cluster 7: Accelerating database reform for an integrated population data (Social registry reform). Policies in this cluster are generally intended to realize a modern integrated population database. Using this database, social protection can be more optimized and redistribution through progressive taxation that is required to finance development can be better realized. Programs that are part of this cluster are, among others, Oversight of Population Administration; Oversight of Population and Civil Registration Apparatus; Larger budget to be allocated for birth registration.

CHAPTER IV
SDGs FUNDING STRATEGIES

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A. Projection of SDGs financing with a top-down approach (aggregate)

The updated baseline is based on disbursements or real financial data in the 2015–2022 period. The financial data reflected real circumstances during COVID-19 along with additional financial information on international public financing and domestic private financing. The new baseline calculation for the projection of development financing is based on 2015–2020 State Budget realization data spent by ministries/agencies, OECD funds, and loans from private banks, which have factored in the COVID-19 pandemic situation.

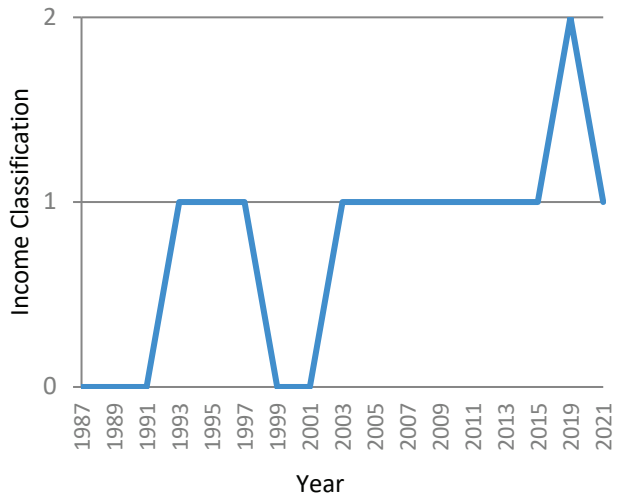
The aggregate projection is generated in three steps. First, assume that Indonesia will become a high-income country by 2045. Additionally, the government budget is also assumed to be allocated to achieve SDGs targets and the 2045 Vision simultaneously. This calculation is intended to compare projected financial requirements that have to be allocated against the baseline condition. Second, prepare intervention scenarios based on the SDGs financing baseline trend, then add NZE financing published by Bappenas in the Low Carbon Development Indonesia (LCDI) scheme. Third, calculate Indonesia's potential to raise private sector financing for SDGs.

Projection Based on Indonesia 2045 Vision

Becoming a high-income country is the aim of every country to achieve well-being for its people, including Indonesia. However, impacts of the COVID-19 pandemic in 2020 has pushed Indonesia's position from an upper middle-income country down to a lower middle-income country. SDGs serves as a window of opportunity for Indonesia to achieve its 2045 Vision, and at the same time, to sustainably grow to become a high-income country.

Indonesia's progress for achieving high-income level is shown in Figure 4.1.

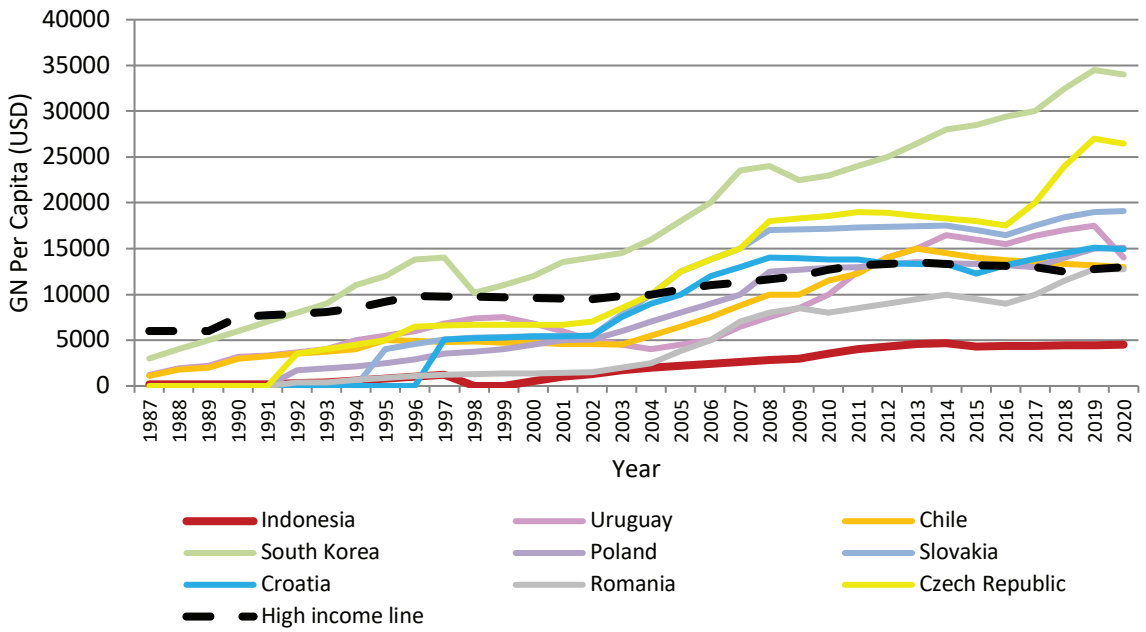
Figure 4.1 Indonesia's development status based on income classification



Note: 0 is low income, 1 is lower middle-income, 2 is upper middle-income, 3 is high income; source: these figures are created by the authors based on the World Bank's criteria and classification

Economic growth needs investment, especially to support infrastructure development, education, health, environment, and other development sectors. Chile, Uruguay, South Korea, Poland, Croatia, Romania, Slovakia, and the Czech Republic are among the countries that have successfully achieved high economic growth. Figure 4.2 shows the positive trend of developing countries which may become high-income countries.

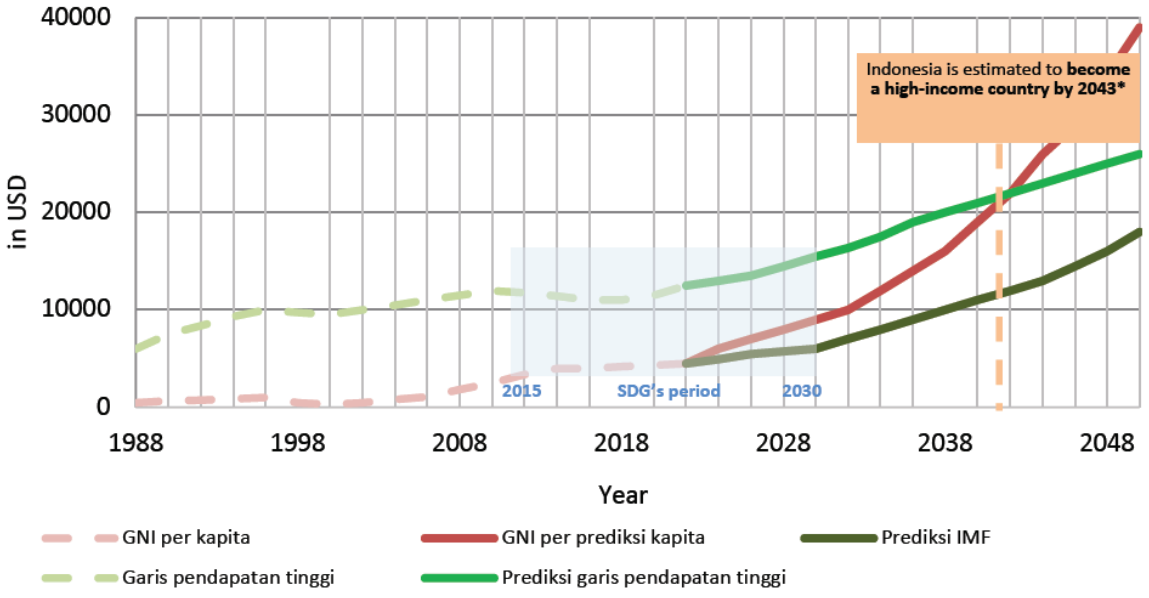
Figure 4.2 Gross national income per capita of high-income nations



Source: World Development Indicators, World Bank

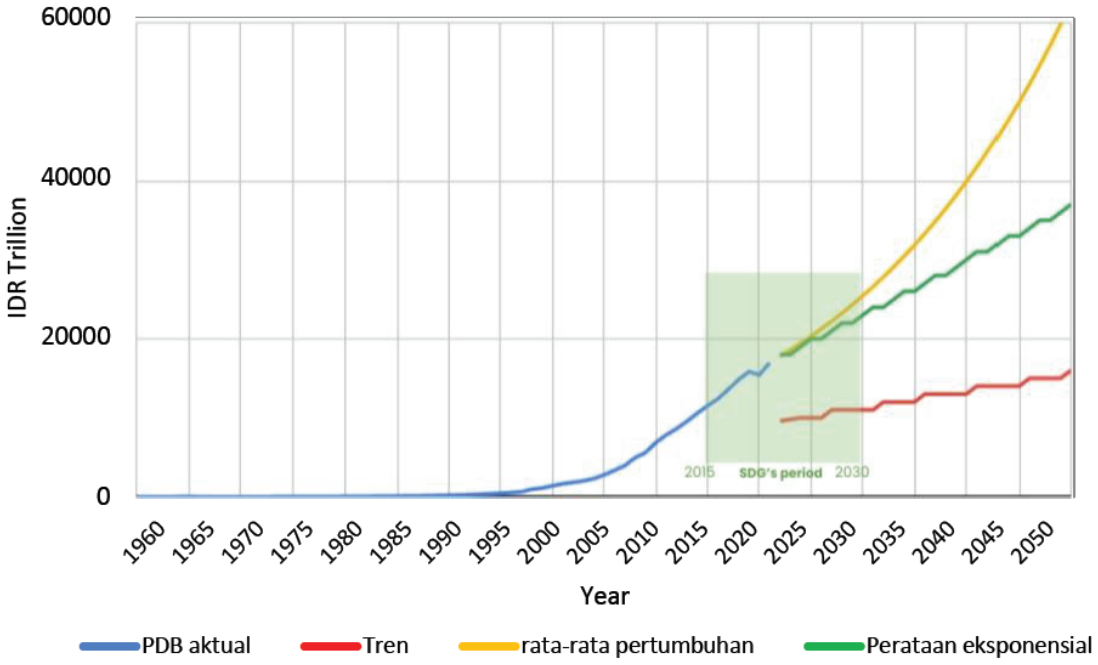
Sustainable economic growth can support Indonesia's 2045 vision. According to a report entitled "Indonesia 2045: Sovereign, Advanced, Equitable, and Prosperous" published by Bappenas in 2019, Indonesia is projected to become a high-income county in the next two decades. The prediction drawn from the average growth of GNI per capita and prediction from the high-income line show that Indonesia can reach the high-income country threshold by 2043. The projected timeframe is similar to that of other countries in their journey to becoming advanced countries. Indonesia's GNI per capita is projected to reach USD22,725, while the high-income line is at USD22,491, making Indonesia's GNI just above the high-income line. The projection is based on the average GNI growth per capita in the last 40 years, which is 8.9%. Figure 4.3 shows GNI per capita trend and the high-income line. As shown in Figure 4.4, Indonesia is estimated to cross the high-income country threshold by 2043. In that year, Indonesia is estimated to have a GDP per capita of USD22,725 (IDR333.3 million), surpassing the GNI threshold for high-income countries at USD22,491 (IDR329.9 million). In the SDGs implementation period (2015–2030), Indonesia's GDP growth is estimated to grow by 4.6% per year on average. By 2030, GDP is projected to reach USD785.9 billion or IDR11,526.33 trillion, or doubling the GDP in 2015.

Figure 4.3 Indonesia's GNI per capita and high-income nations



Source: Authors' illustration; note: GDP per capita and the high-income line showing the threshold to be in the category of high-income country from 2022 to 2050 are projections based on average exponential smoothing from 1987 to 2021 *Estimated based on several assumptions, including political and economic stability, and annual GDP growth of at least 8%.

Figure 4.4 Indonesia's GDP Growth (actual and projected)

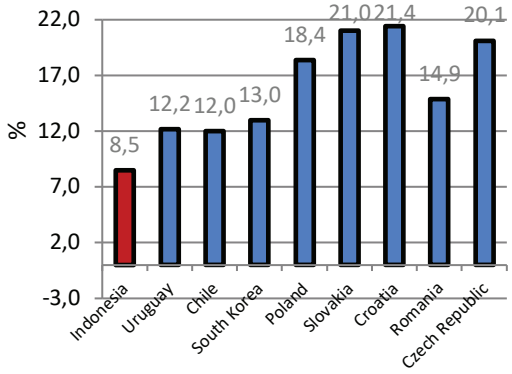


Source: Actual GDP data collected from WDI, and team calculation for 2023–2050

Public budget and private investment play significant role to support the Indonesia's development agenda. Figure 4.5 shows that Indonesia's government budget to GDP ratio is relatively low compared to other countries. This indicates that private sector financing in

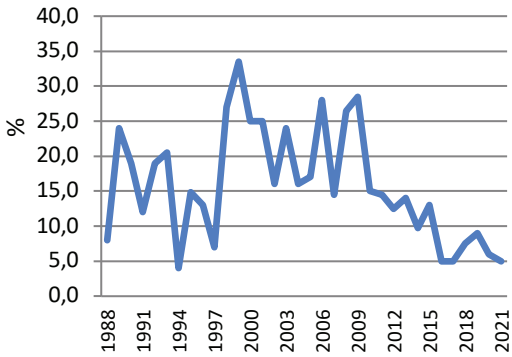
Indonesia needs to be accelerated to achieve 2045 Vision. Effectiveness and efficiency are the keys to integrated budget management for development. The government needs to maintain the quality of budget allocation, particularly in response to the drop in government expenditure to GDP within the last decade (Figure 4.6).

Figure 4.5 Average government expenditure to GDP ratio (%), (1987–2021)



Source: World Development Indicators, World Bank

Figure 4.6 Growth of Indonesia's Government Expenditure to GDP

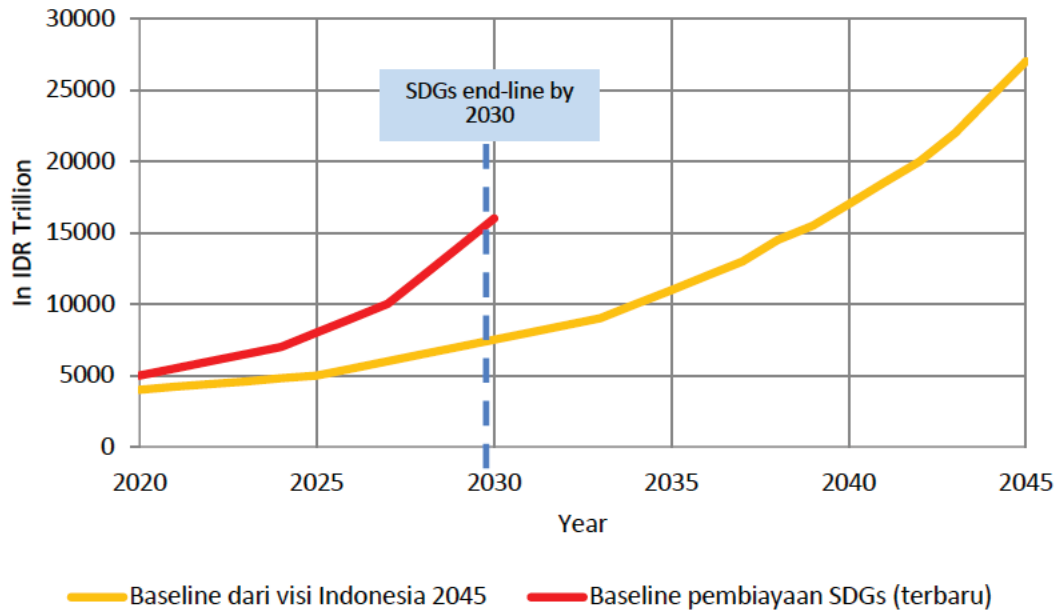


Indonesia needs a GNI growth of 8% per year (on average) to achieve a high-income level by 2045. Under that assumption, the government has to maintain its expenditure growth at 16% per annum. Furthermore, the calculation of the government's expenditure requirements uses the following assumptions:

a. Calculation of the budget requirements to become a high-income country ignores GNI per capita target and does not take into account requirements to achieve all SDGs indicators.
b. The budget used in estimating budget requirements are the total government budget, while other sources, such as private and foreign sources outside of the government budget, are considered exogenous sources.
c. The estimated budget requirements to reach the high-income country threshold by 2045 is based on elasticity coefficient of government budget against GDP per capita. The estimate is based on an elasticity approach summarized in Table 4.4 Column 1. SDGs targets that are taken into account are often time-bound and must be achieved by 2030. In light of this, elasticity, which measures the sensitivity of one economic variable against other variables, can be used to estimate the relevant budget requirements.

Figure 4.7 compares requirements for financing baseline SDGs and for achieving Indonesia 2045 Vision. There are some differences between the two as the latter does not include several financing sources outside of government budget, such as private financing flow, which include domestic bank loans and religious funds.

Figure 4.7 Requirements for Financing the SDGs Baselines and Indonesia 2045 Vision



Note: Baseline projection is calculated using exponential smoothing, and intervention is projected at a rate of increase based on the reported Model in Table 4.4.

Projection for SDGs financing intervention

The required financing for SDGs baseline in the 2021–2030 period is projected to be nearly double the previous roadmap. With an assumption that Indonesia can achieve the target of becoming a high-income country by 2045, calculations about the required financing for SDGs also refer to the target. The required financing is 2.8 times greater in the updated calculation compared to the previous calculation. The previous calculation reached IDR853,404 trillion (USD58,187 billion), while the latest calculation reached IDR299,312 trillion (USD20,408 billion) in the 2020–2045 period.

Indonesia is committed to achieving net-zero emissions (NZE) by 2060. This is listed in the Low Carbon Development Indonesia (LCDI) Initiative published by Bappenas (Bappenas, 2021). The LCDI report calculated the cost to achieve NZE on top of the business-as-usual development cost. The latest calculation on the required financing for SDGs has integrated the cost to achieve net-zero emission (Equation 4). This adds the highest NZE costs as calculated by Bappenas (Bappenas, 2021) (see Table 4.3).

Table 4.3 Estimated cost to achieve net-zero emission (NZE) ambition

Year	Cost per year*	
	In IDR trillion	In USD billion
2021–2030	2,200–2,933	150–200
2031–2040	10,267–14,667	700–1.000
2041–2050	19,067–23,467	1,300–1,600
2051–2070	30,800–32,267	2,100–2,200

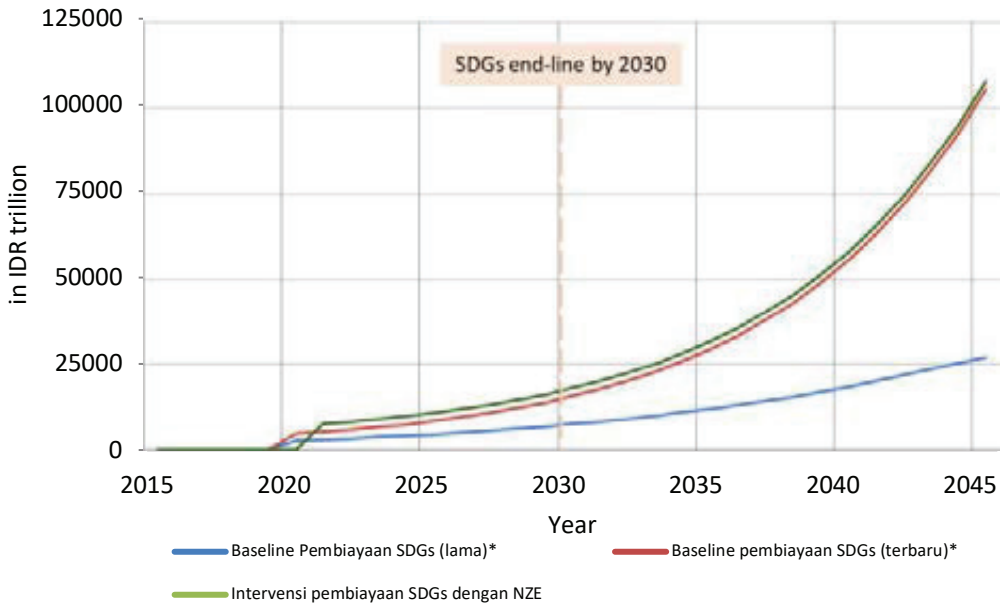
Source: LCDI report (Bappenas, 2021); * cost to achieve NZE on top of BAU development financing

The consideration to include this cost is because carbon costs such as through taxes and carbon trading have yet to be integrated into the financing for development activities. This is one of the main costs to achieve environmental sustainability aside from social and governance aspects.

$$(NZE\ unit\ cost)_n + SDGs\ intervention\ with\ NZE_n = ss_n + ipd\ f_n + sj_n \quad (4)$$

Figure 4.8 illustrates the comparison between various financial requirement scenarios to achieve SDGs. Adding NZE costs into the calculation raises the financial requirement by about 34% from 2020 to 2030.

Figure 4.8 SDGs financing requirement scenarios



*Baseline SGDs roadmap is extended to 2045 using the growth pattern of the SDGs financing needs calculation between 2020 and 2030.

Projection for the required increase in private investments in SDGs

Leveraged financing is a strategy to fill in the financial gap in SDGs financing. Figure 4.9 is taken from SDGs financing requirement scenarios in Figure 4.8. It shows the different contributions from public and private funding to meet SDGs financing requirements, taking into account net-zero emission (NZE). Two types of public financial data are compared in Figure 4.9: (1) public financing sourced from the national government budget and (2) public financing sourced from national and subnational government budget, illustrating different annual growth levels, respectively at 10% and 13.45%. The different growth levels in public financing determine the amount of financing gap needed to be filled by private funding (see Table 4.4 for detailed data on the financing gap and private funding leverage ratio).

Figure 4.9 Public and Private Financing Projections for Indonesia's SDGs

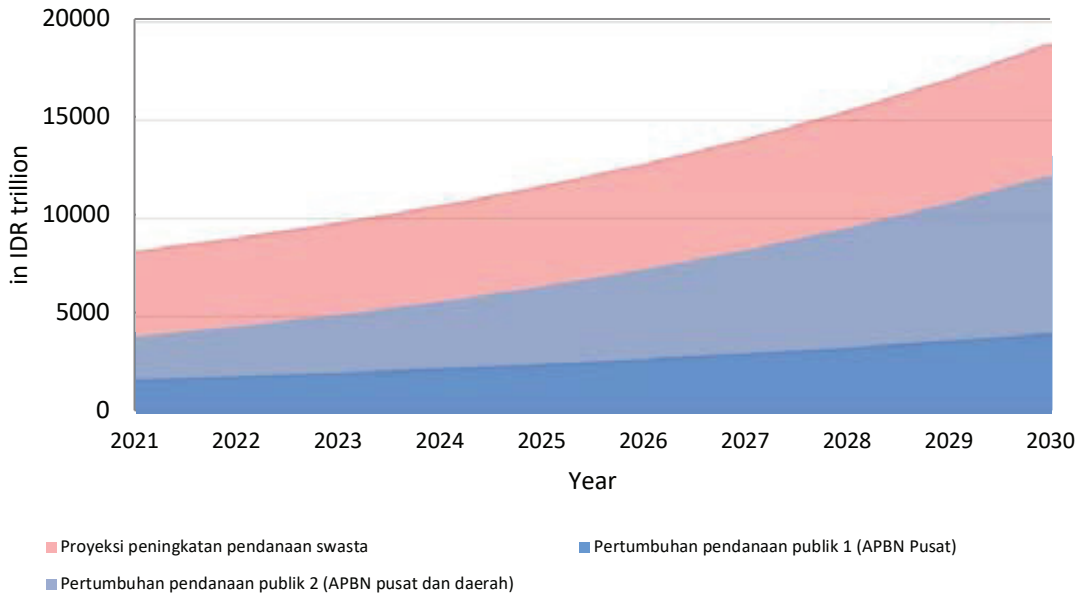


Table 4.4 Public and private financing projections to achieve SDGs

Year	Public funding growth 1 (National Govt. Budget) IDR Trillion	Public funding growth 2 (National and Subnational Govt. Budget) IDR Trillion	Private financing growth to fill the gap (in public funding growth 1) IDR Trillion	Private financing growth to fill the gap (in public funding growth 2) IDR Trillion	Projection of private leverage ratio (in public funding growth 1)	Projection of private leverage ratio (in public funding growth 2)
2021	1,707	3,933	6,602	4,376	3.9	1.1
2022	1,881	4,462	7,114	4,533	3.8	1.0
2023	2,073	5,062	7,700	4,711	3.7	0.9
2024	2,284	5,743	8,369	4,910	3.7	0.9
2025	2,516	6,515	9,133	5,134	3.6	0.8
2026	2,772	7,391	10,006	5,387	3.6	0.7
2027	3,055	8,385	11,002	5,672	3.6	0.7
2028	3,366	9,513	12,140	5,993	3.6	0.6
2029	3,708	10,792	13,439	6,355	3.6	0.6
2030	4,086	12,244	14,921	6,763	3.7	0.6

The SDGs financing, particularly in developing countries, is expected to grow considerably in the effort to achieve SDGs (United Nations et al., 2022). During the COVID-19 pandemic, the

financing gap skyrocketed far ahead of development cooperation budget across the world. Capital markets aligned with sustainable development can play an important role to fill the gap in SDGs financing. However, this requires better collaboration between actors to ensure that various elements and standards are applied to mobilize private capital for developing countries in accordance with SDGs. Furthermore, sustained communication, outreach, and dialog among public and private stakeholders are the key to develop innovative financing mechanisms. The next section will discuss innovative financing options for public and private funding through the lens of macro policies and role-based strategies.

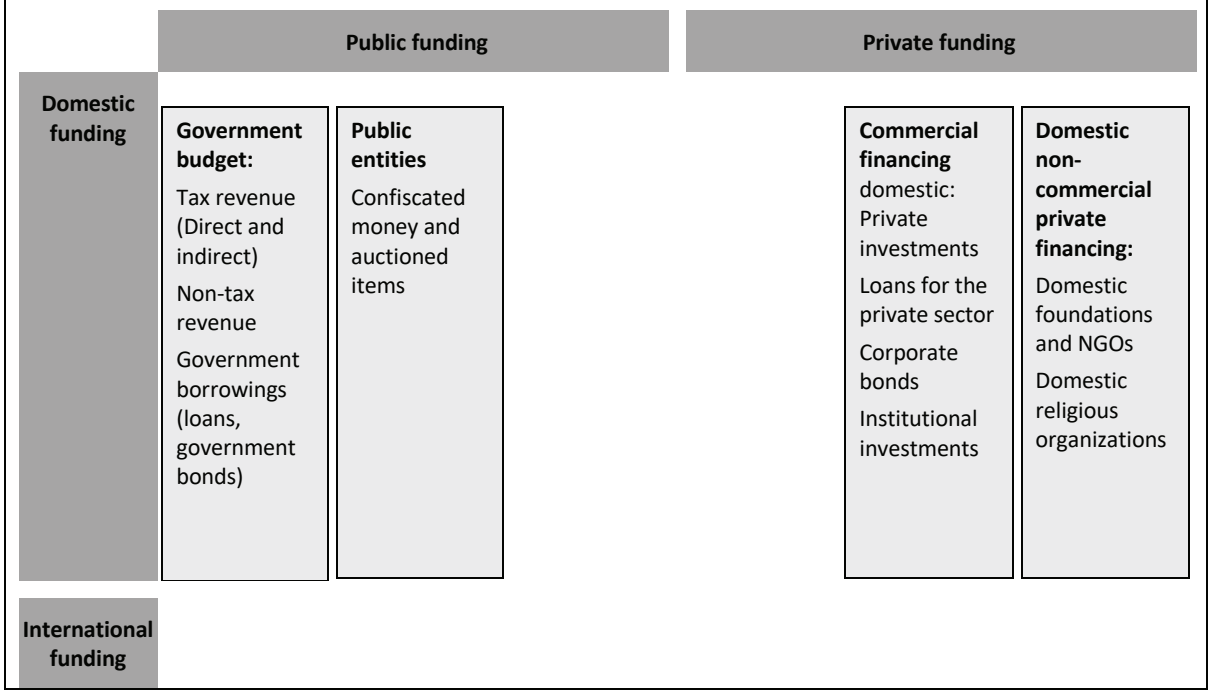
Top-Down Financing Strategies

This section provides recommendations on top-down financing strategies. First, macro policy financing strategies are developed based on the Integrated National Financing Framework (INFF). Second, role-based financing strategies are focused on the responsibilities given to each stakeholder to finance SDGs implementations.

Macro policies-based financing strategies

Financing strategies in the INFF can provide a framework to reinforce the potential synergy and feedback from various policies. Policy-based priority setting can be carried out in three ways: (1) ensure effective implementation by reviewing integration, sustainability, and risk information among policies, instruments, and financing regulatory frameworks, (2) identify opportunities to interact between parties and opportunities to access technical support as well as capacity building support from development partners, (3) identify the most optimal instruments, modalities, and sustainable financing partnerships to support development (INFF, 2020a)

Figure 4.10 Public and private financing components from domestic and international sources



	Development cooperation: Overseas Development Aid (ODA) grants ODA loans Humanitarian aids Other official fund flows South-south cooperation	**Public-private financing** Investments using mixed financing and co-financing through public-private partnerships via: Special purpose vehicles (SPV) for project financing Equity investments by State-Owned Enterprises (SOEs) and private companies in the capital market Insurance/risk-sharing	**International private financing:** FDI Export credits Investments Portfolios Hedge funds	**International non-commercial private financing:** Remittances International foundations and NGOs Domestic religious organizations

In Indonesia, the INFF is formulated based on dialogues among various government and non-government actors to map out the sustainable development financing and cooperation landscape. Results from such dialogues help identify various sources of financing (see Figure 4.10) and become the base for developing strategies to increase investments, manage risks, and achieve sustainable development priorities. Furthermore, to optimize the use of limited resources, identifying the right financing is needed to maximize the benefits from public and private investments through proper financing, fiscal, and institutional policies, and financial support mechanisms (United Nations et al., 2022).

Macro policy financing strategies make use of short-term opportunities, and align and reinforce existing government strategies in financing policies to bring about macroeconomic, fiscal, and social stability in the medium and long term (Neunuebel et al., 2022). A number of financing flows have been developed as part of the core objective to facilitate policy and institutional reforms (policy actions).

a. Policies to increase budget allocation for SDGs are, among others (1) develop principles for policy makers to encourage alignment and harmony in programs with various aims that often overlaps; (2) develop methods and technical means to encourage collaboration among agencies responsible for many development aspects in the same location or village or region, such as the implementation of low carbon development program involving many ministries/agencies, such as the Ministry of Environment and Forestry, and Ministry of Agriculture, which play important roles in the agriculture, forestry, land

use management, and waste, as well as the Ministry of Energy and Mineral Resources, Ministry of Trade, Ministry of Transportation, which are involved in the energy, industry, and transportation sectors; (3) stipulate a contingency budget for sustainable development to mitigate fiscal shocks. The budget is set aside to cover unexpected costs and risk exposures during development, such as disease outbreaks or natural disasters. Such shocks can lead to revenue loss and increased expenditure (demands for social safety net and, in the case of natural disasters, expenditure for recovery), which complicate budget planning and implementation, and worsen fiscal risks.

b. The policy to increase private investments in SDGs includes developing coordination and collaboration mechanisms among actors, such the investment board, government (for instance, the Ministry of State-Owned Enterprises), multilateral development banks, bilateral donors, and other relevant institutions to track, monitor, and involve investors that may potentially contribute to SDGs, such as in health, education, energy, and environment sectors. In the context of governance for such multi-level governments, this requires frequent support to accelerate coordination and negotiation among stakeholders, such as task forces, work groups, or committees. Consistent and routine communication and coordination is the key to build internal understanding within and between institutions.

c. The policy to increase international public financing effectiveness includes updating aid effectiveness declaration and operationalizing coordination principles that cover not only bilateral financing, but also philanthropic and religious organizations.

Box 4.4. Definition of economic value mechanism

According to the Regulation of the Ministry of Environment and Forestry No. 21 of 2022, the implementation of carbon economic value depends on three main mechanisms explained as follows:

- Carbon trading: A market-based mechanism to reduce GHG emission through the sale and purchase of carbon units (proof of carbon ownership), enabling a party, which produces more carbon emission that it has the allocation for, to buy unused carbon emission allocations from other parties. This also include carbon compensations to compensate for the emission produced by a business activity.
- Result-based payments: An incentive or payment, which is based on verified and/or certified reductions in GHG emission, and other verified benefits besides carbon.
- Carbon levy: A form of tax, duty and excise, and other state levy based on carbon content and/or potential carbon emission and/or amount of carbon emission and/or performance of climate change mitigation actions. Carbon tax must be imposed on carbon emissions that negatively impact the environment, which is charged to individuals and businesses that purchase goods containing carbon and/or carry out activities that generate carbon emissions, and must be paid.

All of the above mechanisms will increase funding flow into Indonesia. The last mechanism is a new government revenue item and may potentially increase Indonesia's budget space for SDGs expenditure.

d. The policy to increase private sector contribution in the implementation of carbon economic value (CEV) is crucial to help achieve SDGs, especially in relation to climate

change action and GHG emission reduction. The market for sustainable and carbon funding in developing countries is rapidly growing, especially in Asia, as private investors are increasingly looking for investments with positive climate impacts.

Role-based financing strategy

Many stakeholders need to be involved if SDGs targets are to be achieved by 2030. The next strategy emphasizes the importance of clarifying the roles and mandates of each stakeholder involved in SDGs. This financing strategy is much clearer when there is clarity among stakeholders on which party is responsible, based on their roles and mandates. This is why a role-based financing strategy is required: (1) The structure and capacity of stakeholders and institutions help provide an effective and holistic financing strategy (INFF, n.d.). (2) Focusing on roles of the actors to overcome silos and ensure a more relevant reform (United Nations et al., 2022). (3) Oftentimes nobody steps in as a bridge between the roles; thus, blended finance is developed gradually. (4) Through policy and reform mechanisms, the government may consider taking on the role of bridging and coordinating as part of the strategic management to align programs financed by public institutions and the private sector.

Financing for development projects in Indonesia is still considered very risky and financial institutions are reluctant to finance new projects. Implementers of development projects tend to be diverse, with many of them in the small to medium enterprise space, having limited financial (and sometimes technical) capabilities to produce high-quality documentations and develop high-quality projects strong enough to obtain the required permits, licensing, and financing.

This is an issue especially for small-scale projects because due diligence and risk assessment being done for smaller projects have a similar scope with those done for large projects. Thus, costs incurred for a small project become relatively similar to a large project, but with a much smaller revenue. The risk of transaction failure in financing a development project happened because of the mismatch in risk faced by project developers and financial institutions.

Overcoming the risk of financing failure by aligning roles

Different stakeholders have different ways of assessing risk. To push a larger volume of investment through innovative financing, there is a need to align the risk management framework used by the relevant stakeholders, i.e. project developers, loan providers, intermediaries, and regulators. Loan providers and investors are interested in a stable policy environment to ensure project implementation (IMF, 2022b). They need certainty on legal protection if a project becomes mired in legal disputes. A regulatory framework is ideal if it is autonomous, accountable, transparent, and predictable (UN-OHRLLS, 2021). This is one of the major prerequisites for loan providers and private sector participation. Another characteristic of an ideal regulatory framework is strongly related to the harmonization of domestic policies, standards, and guidelines with international standards (UN-OHRLLS, 2021). Synchronizing the roles and responsibilities of relevant parties clarifies the proportion of risk-sharing among funders, implementers, and beneficiaries, as well as policymakers.

Some of the important roles and responsibilities in financing strategies are listed below and should be considered for alignment to improve public and private sectors interest to finance or invest in SDGs achievement.

a. Intermediaries, such as financing demand aggregators: The role of intermediaries in financing demand is to distribute funds from donors, grants, and investments to support sustainable development in Indonesia. Some examples of these intermediaries are

Environmental Fund Management Agency (BPDLH/*Badan Pengelola Dana Lingkungan Hidup*) and PT Sarana Multi Infrastruktur (PT SMI). Conveners provide the space to match and coordinate.

b. Conveners play an important role in supporting development projects and the government by convening all stakeholders to achieve SDGs, particularly in sustainable financing. One example is UN organizations (such as UNDP, UNEP, etc.) that act as the UN's SDGs organizers in Indonesia.

c. Guarantors provide guarantees to strategically cut investment risks while mobilizing private resources: A guarantor can provide effective instruments for the borrowers by facilitating long-term and low-cost financial loans. Guarantees from MDB, IFIs, and donors have potential appeal and effectiveness, even though the use is limited, especially in large projects. These guarantors have helped countries with certain risk ratings to reprofile expensive commercial debts to more advantageous terms. They have also helped governments to attract private sector participation in loan restructurings.

d. Financial regulators, auditors, and credit rating agencies: There is a need to define the roles of institutions carrying out the tasks to regulate, oversee, audit, and rate financial service activities in banking, capital markets, and non-banking financial sectors relevant to sustainable development. For instance, in Indonesia, the Financial Services Authority (OJK/*Otoritas Jasa Keuangan*) plays a role as financial regulator and the Supreme Audit Institution (BPK/*Badan Pemeriksa Keuangan*) plays a role as financial auditor.

e. Financial policy makers and authorities appointed to provide guidance and conduct planning: The appointed institution can widen its working coverage in formulating policies related to the financial and fiscal sectors, and help Indonesia in mitigating and adapting to climate change through planning and financial directions. This includes developing well-defined financial and fiscal policies, which are crucial to fund investments and private sector involvements in development projects.

f. Portfolio managers, including debt management: Portfolio managers and debt management in Indonesia, such as the Indonesia Investment Authority (INA), can play a role in sustainable financing to manage and adjust their investment objectives to the yield. There is also the Directorate General of Financing and Risk Management (DJPPR/*Direktorat Jenderal Pengelolaan Pembiayaan dan Risiko*) under the Ministry of Finance that manage Government Borrowings and Government Securities (SBN/*Surat Berharga Negara*).

B. Projection of SDGs financing based on a bottom-up approach for various indicators

Indicator 1.2.1. (a): Proportion of population living below the national poverty line, by sex and age

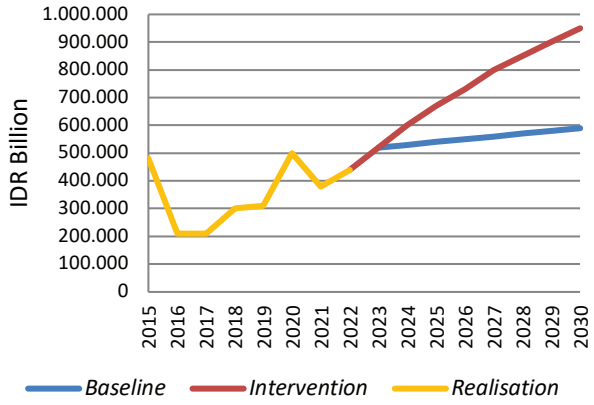
1. Calculation of financing requirements

Requirements for poverty alleviation are projected to increase annually towards 2030. Figure 4.11 is a projection of the financing required to achieve poverty alleviation targets. In this regard, financing is required to ensure that poor individuals or households (living below the national poverty line) who have just crossed above the poverty line can stay above the line, as well as to increase financing capacity for intervention. The formula used to calculate financing requirements is based on the calculation for unit cost as follows:

$$Financing\ requirements_t = \left(\frac{\Delta Budget_{2015-2022}}{\Delta POV_{2015-2022}}\right) x (POVtargeted_{\ t} - POVtargeted_{\ t-1}) x (1 + Inf_t)^n \qquad (5)$$

The rising trend of cost will be reduced from 2023 to 2030, where starting from 2023, the cost will increase by about 10.2% annually until 2030. Meanwhile, in the baseline scenario, the cost required will increase by 6.2% on average per year. This is caused by two things. First, the target set for that year, for example, if there is an increase in the poverty alleviation target for 2023, then the financing required will increase as well.

Figure 4.11 Financing requirements for poverty alleviation



Second, closer to 2030, there will be a drop in financing requirements as poverty alleviation has grown closer to the set target. The unit cost for poverty alleviation is constant, but the target figure to be achieved influences the total cost per year. Further, the total cost per year is adjusted to inflation for that year.

Calculations related to financing requirements follow equation 5 that consists of three parts. However, the first thing that needs to be done is calculating the unit cost using realization data. To do that, data from 2015 to 2022 is obtained from Statistics Indonesia (BPS), specifically the variables of poverty (POV) and budget spent for poverty alleviation (BUDGET) taken from the notes to government budget under the social protection fund (Ministry of Finance, 2022). Sections of the equation 5 above are explained as follows: The first part is the average ratio of the difference between budget realization and percentage of poverty during the year observed. The second part is the difference of poverty figure from the targeted year (POVtargeted), which is 2023 to 2030, referring to the baseline and intervention scenarios in the previous year. When calculating financing requirements for 2023, the figure used is from the previous year, which is 2022, using the published real poverty figure. The third part is calculation for inflation target (Inf) using the future value formula for a time period.

Table 4.5 Financing requirement gap in poverty alleviation

Year	Scenario cost (IDR billion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	525,430	527,067	34,248	34,355
2024	551,177	590,480	38,170	40,892
2025	576,877	649,550	39,358	44,317

2026	601,531	712,964	40,434	47,924
2027	625,259	772,902	41,408	51,186
2028	648,180	827,629	42,293	54,002
2029	670,290	880,618	43,089	56,610
2030	691,638	930,133	43,802	58,906
Total	**4,890,381**	**5,891,344**	**322,802**	**388,190**

2. Financing strategies

Alleviating extreme poverty requires a financing strategy with sources from public and private financing. Some of the main strategies to use financing for alleviating extreme poverty are, among others (1) calibrate interlinkages with other goals in SDGs, for example goal 1, 3, 8, 10, and 11; (2) harmonize social protection fund and private bank loans for SMEs in order to create jobs for the poor (for instance, Small Business Loans/KUR) and government subsidies (ADB, 2020; Bappenas, 2017), and public funds, such as village fund and subnational transfer (World Bank, 2020a); and (3) reformulate guidelines and monitoring of foreign investments (Afandi et al., 2017).

Indicator 2.2.1. (a): Prevalence of stunting among children under 5 years of age

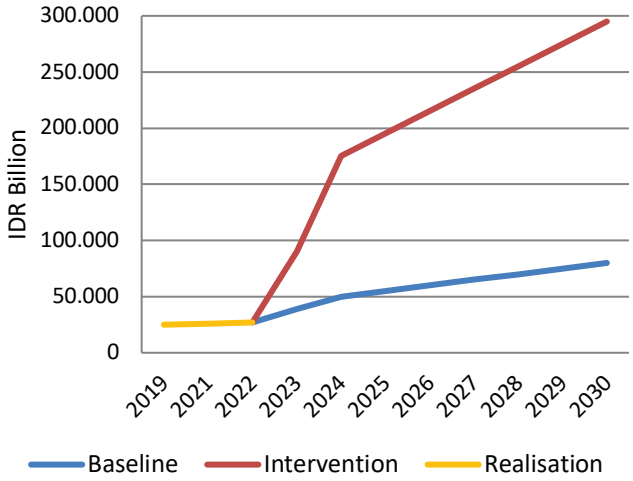
1. Calculation of financing requirements

Some assumptions must be used to calculate the required financing to achieve target indicator 2.2.1.(a) Prevalence of stunting among children under 5 years of age. First, if the target for stunting reduction percentage is increased, then the financial requirements will also increase. The unit cost is formulated as follows:

$$Unit\ cost\ (Rp/\%) = \frac{Cost\ realization\ 2019–2022\ (Rp)}{Average\ percentage\ of\ stunting\ reduction\ 2015–2019(\%)} \quad (6)$$

The realized cost used as a reference to estimate financing requirements between 2023 and 2030 is the cost specifically allocated to prevent and reduce stunting. The expenditure paid for programs such as targeted nutrition intervention and strengthening promotion and prevention initiatives by increasing immunization service. Before 2019, the program to reduce the prevalence of stunting has already been a priority; yet, there is no specific published information about the budget allocated for this program in Book 2, Notes to the Financial Statements and State Budget of the Republic of Indonesia. Second, calculation for the financing requirements is based on the percentage change in stunting reduction for year n and year n-1, multiplied by the unit cost of reducing the prevalence of stunting by 1%.

Figure 4.12 Required financing to reduce prevalence of stunting among children under 5 years of age



Based on Figure 4.12, between 2015 and 2019, there has been a general increase in financing requirements to reduce stunting percentage as the indicator showed a gradual reduction.

The pattern is reflected in the prediction of financing requirements for baseline and intervention scenarios. However, because the intervention scenario projected a reduction in stunting, then the intervention scenario went through a significant acceleration compared to the baseline scenario. Furthermore, the financing required to achieve the target is very significant. The financing required to support the target in the intervention scenario is projected to be four times larger than the baseline scenario (Table 4.6).

Table 4.5 Financing requirement gap in poverty alleviation

Year	Scenario cost (IDR billion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	40,397	109,385	2,633	7,130
2024	46,214	173,342	3,200	12,004
2025	51,718	191,790	3,529	13,085
2026	57,080	210,198	3,837	14,129
2027	62,359	228,593	4,130	15,139
2028	67,675	248,837	4,416	16,236
2029	73,024	267,250	4,694	17,180
2030	78,409	285,675	4,966	18,092
Total	**476,877**	**1,715,071**	**31,404**	**112,995**

2. Financing strategies

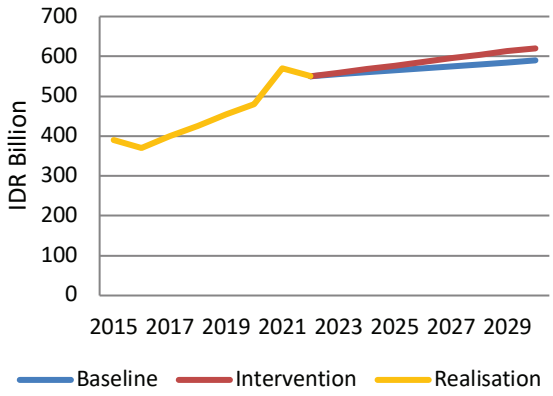
Innovative financing to address the prevalence of stunting can refer to a number of schemes. First, external financing, such as the Global Financing Facility for Women, Children, and Adolescents (GFF). Second, Indonesia needs an integrated and multisectoral approach, such as public-private partnership, intended to reduce the percentage of stunting among children under 5 years of age (Utami, 2019). Third, any investment must include action plans that are nutrition-specific and nutrition-sensitive (Shekar et al., 2017; Utami, 2019). Fourth, political support and funding are needed to push for this agenda (Bhutta et al., 2020).

Indicator 4.1.2: Education completion rate

1. Calculation of financing requirements

The scope of education in this projection covers primary, lower secondary, and upper secondary education. Financing requirements to meet the targeted education quality can be viewed in Figure 4.13, with the indicator being used in the calculation is the education completion rate (ECR) in the primary, lower secondary, and upper secondary education.

Figure 4.13 Financing requirements to increase education completion rate



The method used to calculate the indicator's average is the weighted average (WECR) where the weightings use correlation coefficients from education completion rate at each level: primary, lower secondary, and upper secondary, related to education financing.

Formulas 7, 8, and 9 provide the detailed calculation steps. Formula 7 is the main formula used to calculate financing requirements to increase education completion rate. Formula 4 calculates the weighted average of indicators, while formula 5 calculates the correlation between indicators and financing requirements. The target for education completion rate is the WECR calculation that uses predicted figures from 2023 to 2030.

$$Financing\ requirements\ _t = \left(\frac{\Delta Budget\ _{2015-2022}}{\Delta POV\ _{2015-2022}}\right) \times (POVtargeted\ _t - POVtargeted_{t-1}) \times (1 + Inf_t)^n \quad (7)$$

$$WECR = \left(\frac{(Corr\ sdECR\ _{sd}) + (Corr\ ssmpdECR\ _{smp}) + (Corr\ smaECR\ _{sma})}{(ECr\ sd + ECR\ smp + ECR\ _{sma}}\right) \quad (8)$$

$$Corr\ _t = \left(\frac{\sum \left(ECR\ _t - \underline{ECR\ _{2015-2022}}\right)\left(Budget\ _t - \underline{Budget\ _{2015-2022}}\right)}{\sqrt{\sum \left(ECR\ _t - \underline{ECR\ _{2015-2022}}\right)^2 \sum \left(Budget\ _t - \underline{Budget\ _{2015-2022}}\right)^2}}\right) \quad (9)$$

Financing requirements to achieve the baseline and intervention targets have increased, and the gap between the baseline and intervention has widened as well (see Table 4.7). Closing the gap will be a significant challenge.

Table 4.7 Total financing gap to increase education completion rate

Year	Scenario cost (IDR billion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	544	550	35	36
2024	547	559	38	39
2025	554	570	38	39
2026	560	580	38	39
2027	565	590	37	39
2028	570	600	37	39
2029	575	610	37	39
2030	579	620	37	39
Total	**4,493**	**4,680**	**297**	**309**

2. Financing strategies

Examples of financing strategies to increase education quality in Indonesia are, among others, scholarships and grants (World Bank, 2020a), Indonesia endowment fund for education (LPDP, n.d.), education fund provided by State Budget and Subnational Budget (Saputra, 2018), and partnership for education investment through universities or education institutions (Global Business Guide, n.d.).

Indicator 6.2.1: Proportion of households using safely-managed sanitation services and hand-washing facilities with soap and water

1. Calculation of financing requirements

According the WHO (n.d.), indicator 6.2.1 focused on the Proportion of households who use, at the very least, basic sanitation services not shared with other households. This indicator also includes the use of safely-managed sanitation services. Before calculating the unit cost, the indicator should first be converted from percentage to million households using improved sanitation. Data on the number of households in Indonesia is sourced from Statistics Indonesia (BPS), but data matching the study period is very limited and is only available for 2015, 2016, 2018, and 2019. Total cost allocated for sanitation improvement programs was taken from Special Allocation Fund for Physical Development (DAK Fisik) and foreign grants. Thus, the cost to improve sanitation per million households is calculated based on total cost divided by the number of households using improved sanitation. Data sources related to the annual target of proportion of households using improved sanitation is discussed in Chapter 2.

In the calculation of cost projection to achieve the targeted households using improved sanitation by 2030, the unit cost is determined based on the highest cost per million households using improved sanitation (see Formula 5 below). Between 2015 and 2019, the highest unit cost occurred in 2018, amounting to IDR46.96 billion (USD3.203 million) per one million households. Unit cost is assumed to be constant from 2023 to 2030, but adjusted to the inflation rate.

$$Unit(Cost) = max(cost\ per\ household\ with\ access\ to\ proper\ sanitation\ 2015–2019) \quad (10)$$

Figure 4.14 shows the reduced budget allocation for sanitation during COVID-19 (from 2019 to 2021). However, in 2022, the figure rose again by 8.5% compared to the previous year. From 2023 to 2030, the gap in required financing between baseline and intervention scenarios is quite significant. Of course, financing requirements for intervention surpassed the requirements for baseline. Average cost for intervention is 13% higher than the baseline scenario until 2030 (see Table 4.8).

Figure 4.14 Financing requirements to achieve target households using improved sanitation

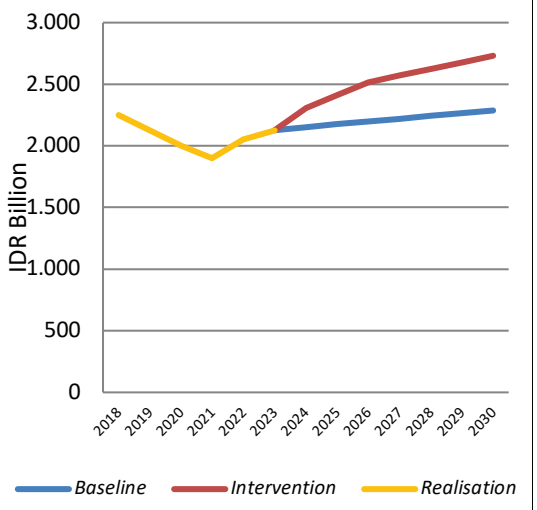


Table 4.8 Total financing gap to achieve target households using improved sanitation

Year	Scenario cost (IDR billion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	2,127	2,208	139	144
2024	2,150	2,309	149	160
2025	2,175	2,413	148	165
2026	2,198	2,517	148	169
2027	2,221	2,570	147	170
2028	2,243	2,624	146	171
2029	2,265	2,678	146	172
2030	2,287	2,731	145	173
Total	**17,666**	**20,050**	**1,029**	**1,180**

2. Financing strategies

OECD (2010) has identified major challenges in financing to provide infrastructure for drinking water. These challenges include lack of bankable projects and limited funding availability for domestic operators. To overcome financing issues in providing water infrastructure, there are several available mechanisms and financing strategies to support clean water and sanitation in Indonesia including, among others; first, Indonesian cooperatives offering micro financial services in the form of loans and savings for waste, sanitation, and hygienic products (WASH) (Impact Investment Exchange (IIX), 2021). Second, a platform to crowdfund for sustainable investments (ibid), Indonesia clean water fund initiated by the government (Sukmawijaya, 2022). Third, public-private partnership (PPP) schemes (Ministry of Finance, 2020), and capital/transfer for clean water from governments at the national,

subnational, local, and village levels (UNICEF, 2016). Fourth, corporate social responsibility (CSR) contributions to finance sanitation infrastructure at the subnational level can be an opportunity to fill in the financing gap (Abeysuriya et al., 2007). Last, green investments and bonds (ADB, 2022).

Indicator 7.1.1.(a): Energy consumption per capita

1. Calculation of financing requirements

Proportion of the population with access to electricity is counted through electricity consumption per capita from statistics provided by the state-owned electricity company (PLN) from 2015 to 2020 (2020; 2019; 2018; 2017; 2016; 2015). Energy consumption per capita is defined as the kWh (kiloWatt hours) amount of electric energy used or consumed from various energy sources, both directly or indirectly, divided by the population in a region for the period of one year (Statistics Indonesia, n.d.).

Projection of electricity consumption from 2021 to 2030 is discussed in the previous chapter of this report. The calculated financing requirements to achieve target indicator 7.1.1 is based on unit cost from an average of highest power generation cost between 2015 and 2021, as published by the PLN (2020; 2019; 2018; 2017; 2016; 2015). Average power generation cost is rising significantly every year.

Figure 4.15 Financing requirements for energy consumption per capita

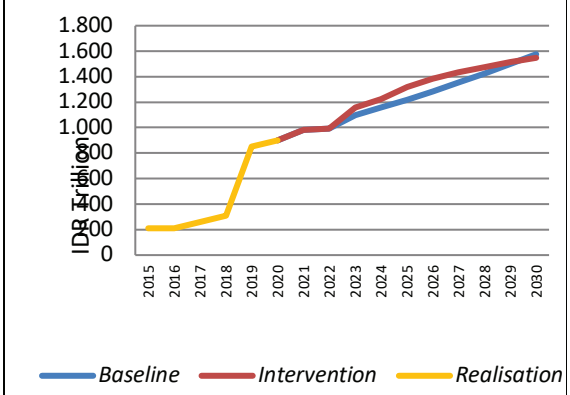


Table 4.9 Total financial requirement gap for energy consumption per capita

Year	Scenario cost (IDR trillion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	1,099	1,158	71,602	75,461
2024	1,157	1,224	80,100	84,734
2025	1,219	1,318	83,192	89,914
2026	1,285	1,382	86,347	92,868
2027	1,353	1,432	89,579	94,846
2028	1,424	1,475	92,901	96,264
2029	1,498	1,514	96,305	97,296
2030	1,576	1,548	99,794	98,048
Total	**10,609**	**11,050**	**699,820**	**729,431**

Figure 4.15 shows that financing for energy consumption per capita in 2019 has increased sixfold compared to 2018. This is mostly influenced by the increase in operational costs, such as maintenance, energy loss, and staffing. The calculated financing requirements to achieve the target is very much influenced by the calculated projection in increasing electricity consumption

per capita. Therefore, financing requirements for the intervention scenario are not very different from the baseline scenario due to the small difference between both projections related to target electricity consumption per capita.

Unlike other indicators where financing requirements differed a lot between the baseline and intervention scenarios, the difference in this indicator is not significant (only IDR441 trillion or USD30 billion) (see Table 4.9).

Furthermore, by 2030, the financing requirements in the baseline scenario are slightly larger than the intervention scenario. The average difference in financing requirements between the two scenarios is 4.4%, where financing requirements in the intervention are still higher than the baseline scenario.

2. Financing strategies

Some strategies and financing mechanisms to support affordable and clean energy in Indonesia are public financing instruments such as government investments (*penyertaan modal pemerintah*) in PT. PLN and PT. SMI as state-owned enterprises, Feed-in-Tariff (FiT) (Sitorus et al., 2018), and fiscal incentives. Furthermore, instruments such as public-private partnership (PPP) include the Indonesia Infrastructure Guarantee Fund (IIGF) (Ibid.). There are also financing schemes for providing electricity to rural and remote areas. Through the PPP program, providing electricity to rural areas becomes one of the business sectors that is open for collaboration with non-government enterprises. Under this program, businesses can provide electricity access to these areas under several financing schemes, such as the viability gap fund (VGF) and availability payment (Mursanti and Tumiwa, 2019).

Indicator 7.2.1: Renewable energy in the energy mix

1. Calculation of financing requirements

In accordance with Government Regulation No. 79 of 2014 on National Energy Policy, renewable energy is energy derived from renewable energy sources, such as geothermal, wind, bioenergy, sun, waterfall, and movements and temperature differences in sea layers. Therefore, renewable energy in the energy mix (%) is a proportion of renewable energy consumption to total final energy consumption.

The calculated financing requirements to achieve the target renewable energy mix by 2030 is based on an average of the highest cost for electricity generation from various renewable energy sources. The highest energy generation cost between 2015 and 2021 is set as the unit cost of generation per kWh from renewable sources. Therefore, the unit cost applied for calculation is IDR7,808.77 (USD0.53) per kWh. The selected unit cost is constant with inflation adjustment every year for the baseline and intervention scenarios. The targeted renewable energy mix projected from 2021 to 2023 is discussed in Chapter 2.

Figure 4.16 Financing requirements to increase percentage of renewable energy in the energy mix

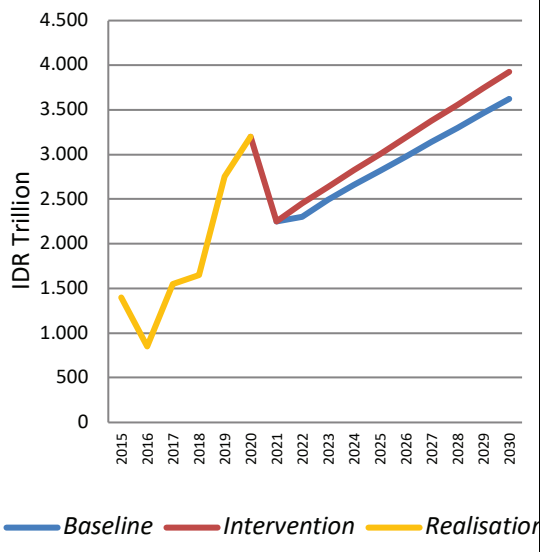


Table 4.10 Total financial requirement gap to increase the percentage of renewable energy in the energy mix

Year	Scenario cost (IDR trillion)		Scenario cost (USD billion)	
	Baseline	Intervention	Baseline	Intervention
2023	2,496	2,641	163	172
2024	2,657	2,825	184	196
2025	2,818	3,008	192	205
2026	2,979	3,192	200	215
2027	3,140	3,375	208	224
2028	3,301	3,559	215	232
2029	3,462	3,743	223	241
2030	3,623	3,926	229	249
Total	**24,478**	**26,269**	**1,615**	**1,733**

Based on Figure 4.16, prior to COVID-19, if the percentage of renewable energy in the energy mix increases, then the cost to make that happen will also increase. This trend is reflected in the financing requirements for both scenarios. However, the financing requirement gap between the two will gradually grow larger as the targeted renewable energy mix is very different. In the baseline scenario, during the final year, the total increase of renewable energy mix is 0.17%, while in the intervention scenario, the change of renewable energy mix is 0.21% by 2030.

Based on Table 4.10, total financing requirement gap between the two scenarios amounted to IDR1,791 trillion (USD122.1 billion). The financing requirement gap between the two scenarios will grow larger year after year. Average financing requirements in the intervention scenario will be 7% more expensive per year compared to the average financing requirements in the baseline scenario.

2. Financing strategies

To achieve the targeted renewable energy mix by 2030, there are several financing strategies to be considered. First, viability gap funding, project development funding, and credit enhancements for investments (ADB, 2019), including green investments and bonds (ADB, 2022). Second, mixed financial mechanism which was just launched for energy transition in Indonesia – the Energy Transition Mechanism (ETM) – a country-level platform to mobilize public and private funding sources (Salinatri, 2022).

1. Calculation of financing requirements

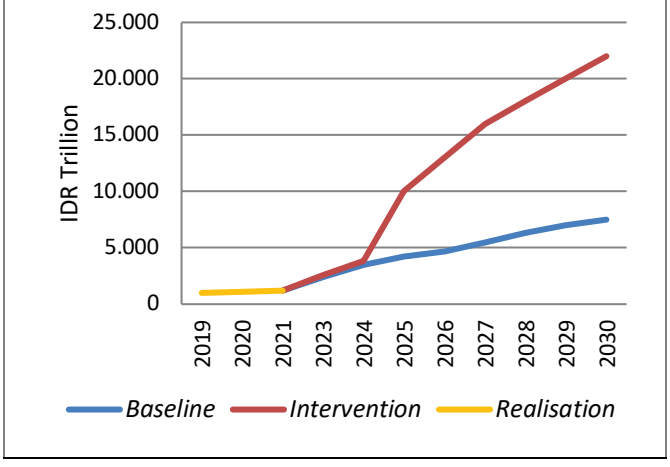
Projection for the financing requirements to support increasing the percentage of MSME with access to financial services is based on the total expenditure by the Ministry for Cooperatives and MSMEs and bank loans in sustainable financing from 2019 to 2020. From 2015 to 2020, the Ministry has expenditure for a priority program in non-debt financing intended to stimulate MSMEs in reinforcing their capital. Thus, calculation for the financing requirements assumes that one of the Ministry's expenditures is to carry out the priority program. Furthermore, considerations are not just taken on the government financing side, but also based on private financing mechanisms. The unit cost formula is:

$$Unit\ Cost\ (IDR\ trillion\ /\ \%) = \frac{the\ national\ budget + the\ private\ budget\ (in\ IDR\ trillion)}{\Delta\ percentage\ of\ SMEs\ access\ to\ financial\ services\ (in\ \%)} \qquad (11)$$

Furthermore, the unit cost is constant and is used to calculate financing requirements for the data period (2021–2030). There is no difference in the annual inflation rate between the baseline and intervention scenarios.

Based on Figure 4.17, up until the time when COVID-19 happened, financing for indicator 8.3.1(a) steadily increased. The trend continued in the baseline scenario. Even though the intervention scenario also has a positive trend, the gap in financing requirements between the two scenarios is quite significant. This is because the percentage of MSME with access to financial services in the intervention scenario is projected to increase seven times higher than the baseline. However, after 2025, the rate of increase in the intervention scenario will gradually slow.

Figure 4.17 Financing requirements to increase percentage of micro, small, and medium enterprises with access to financial services



Financing requirements in the intervention scenario is twice as expensive as the baseline scenario. By 2030, the gap in financing requirements will only increase. Furthermore, by 2030,

the difference in financing requirements between intervention and baseline scenarios will be IDR6,441 trillion (USD407.9 billion) (see Table 4.11).

Table 4.11 Total financing requirement gap to increase percentage of micro, small, and medium enterprises with access to financial services

Year	Scenario cost (IDR trillion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	1,471	1,605	95,909	104,613
2024	1,925	2,113	133,288	146,327
2025	2354	5,128	160,600	349,899
2026	2,756	6,898	185,248	463,647
2027	3,134	8,149	207,545	539,652
2028	3,496	9,125	228,112	595,381
2029	3,835	9,921	246,524	637,765
2030	4,158	10,600	263,340	671,287
Total	**23,129**	**53,538**	**1,520,567**	**3,508,572**

2. Financing strategies

A number of innovations in financing can support MSME to access financial services. First, the credit guarantee scheme (CGS) is intended to minimize the gap between supply and demand in MSME financing. The scheme involves the government as the guarantor, financing institutions as the loan providers, and MSME as the borrowers. The government's role in this scheme is to guarantee a certain percentage of the loan providers' loss when MSME failed to pay back their loans (Yoshino & Taghizadeh-Hesary, 2017). Another financing mechanism introduced by OECD (2015) is crowdfunding. This financing instrument utilizes technology for ease of access to financing services. Furthermore, the government should also play a role in financial instrument development because providing loans to MSME also involves a bigger risk for investors. Thus, the government as enabler must address these obstacles, such as financial stability and investor protection, which can impede innovation in financial instruments (OECD, 2015).

Indicator 8.9.1. (a): Number of international tourists

1. Calculation of financing requirements

To calculate the financing required to achieve the target indicator for SDGs, which is the number of international tourists, several assumptions are needed. First, the number of international tourists is projected to increase, so the cost required will also increase. The unit cost used in this calculation is the highest unit cost in the period between 2015 and 2021. Ultimately, there is no difference in the unit cost between the baseline and intervention scenarios.

Figure 4.18 shows a gradual decline in budget realization to increase the number of international tourists, especially during the COVID-19 pandemic. Before the pandemic, the

average amount of budget allocated for tourism functions was around IDR5,000 billion. Comparing the two scenarios, the baseline and intervention, to project financial requirements for this indicator, shows little difference. In the intervention scenario, the financial requirements started at a lower value compared to the baseline scenario. However, by 2024, the amount rises to about IDR7,500 billion. From 2024 to 2030, the intervention scenario is projected to have larger financing requirements compared to the baseline scenario in the attempt to increase the number of international tourists (see Table 4.12).

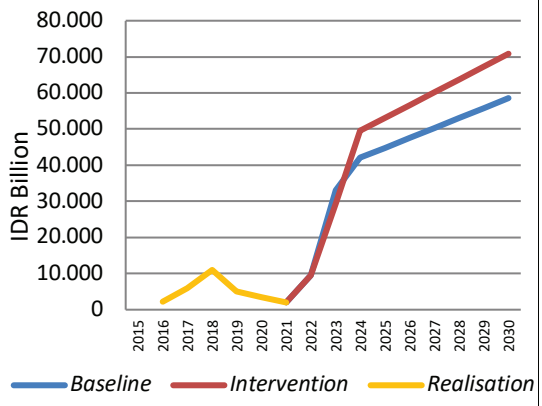
2. Financing strategies

UNWTO (2013) recommends a number of schemes to improve tourism businesses, particularly for small businesses and community-based tourism initiatives. First, a joint venture scheme between the private sector and the community. Second, encourage access to the right funding, such as micro-finance schemes. Further, in its latest publication, UNWTO (2023) prepared a financing solution for tourism businesses and SDGs. The alternative solution is intended to manage and integrate private and public resources. The recommendation covers financing schemes, such as green obligations, impactful investments, energy efficiency loan facilities, mixed financing, smart incentives for environmental certifications, and many more.

Table 4.12 Total financing gap to increase the number of visits from international tourists

Year	Scenario cost (IDR billion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	33,089	29,321	2,157	1,911
2024	42,013	49,543	2,909	3,431
2025	44,789	53,102	3,056	3,623
2026	47,554	56,665	3,196	3,809
2027	50,298	60,206	3,331	3,987
2028	53,062	63,750	3,462	4,160
2029	55,809	67,311	3,588	4,327
2030	58,574	70,858	3,710	4,488
Total	**385,187**	**450,756**	**25,409**	**29,735**

Figure 4.18 Financial requirements to increase the number of international tourists



Indicator 11.1.1. (a): Proportion of households with access to adequate and affordable housing

1. Calculation of financing requirements

Financing requirements to meet sustainable cities and communities are shown in Figure 4.19, where the indicator used in the calculation is the proportion of households with access to adequate and affordable housing (indicator 11.1.1.(a)). Total financing required for this indicator is calculated based on unit cost obtained from several real data, such as total expenditure of the

national government for housing function (Ministry of Finance, n.d.) and percentage of households with access to adequate and affordable housing (Statistics Indonesia, n.d.).

Figure 4.19 shows an increasing requirement trend up to 2030, both in the baseline and intervention models. Since 2019, the realized cost has slowed due to new classification adjustments for habitable homes, which refer to two criteria, namely a sufficient living space of at least 7.2 square meters per capita and the impact of budget policies focusing more on addressing the impacts of COVID-19 pandemic and national economic recovery (Ministry of Finance, 2023).

Subsequently, after 2022, financing requirements to achieve this indicator continue to increase from the 2020 level, in line with the Government policy to continue with priority infrastructure projects that have been delayed in 2020 due to the pandemic. By 2030, there is a significant financial requirement gap between the baseline and intervention scenarios (see Table 4.13). Thus, the financial requirements for intervention surpass that of basic requirements.

Figure 4.19 Financing requirements for access to adequate and affordable housing

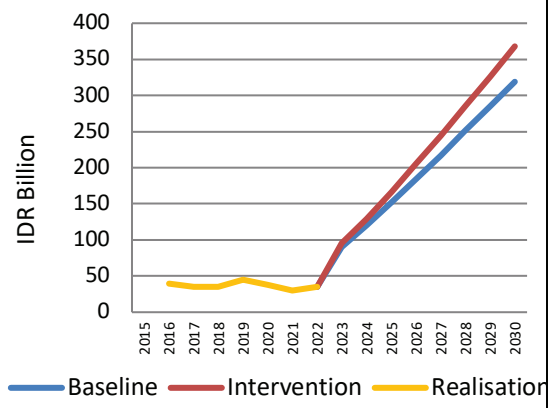


Table 4.13 Total financing requirement gap for access to adequate and affordable housing

Year	Scenario cost (IDR trillion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	90	95	6	6
2024	120	129	8	9
2025	152	166	10	11
2026	184	205	12	14
2027	217	244	14	16
2028	251	285	16	19
2029	285	326	18	21
2030	319	368	20	23
Total	**1,299**	**1,818**	**106**	**119**

2. Financing strategies

In light of the State Budget schemes for housing and infrastructure functions that are trending down in the last few years, the government needs to find other forms of financing schemes. This is important considering that one of the causes for the huge national backlog in Indonesia is limited financing for the housing sector from both the government and the private sector.

Aside from the State Budget, budget allocation for the housing sector can also be taken from government investment in the Housing Financing Liquidity Facility (FLPP/*Fasilitas Likuiditas Pembiayaan Perumahan*) program, a housing financing program aimed particularly for Low-Income Community (MBR/*Masyarakat Berpenghasilan Rendah*) and Middle-Income Community

(MBM/*Masyarakat Berpenghasilan Menengah*). In 2022, expenditure for the FLPP program amounted to IDR19.1 billion (USD 1.3 billion) (Ministry of Finance, 2023). Another funding scheme may come from State-Owned Enterprises through Workers' Insurance (BPJS Ketenagakerjaan), Badan Pertimbangan Tabungan Perumahan/Bapertarum, Nasional Housing (Perumnas/*Perumahan Nasional*), PT Taspen, and international funding support, such as from the World Bank, International Finance Corporation, and Asian Development Bank (ADB).

Indicator 13.2.2: Total greenhouse gas emission per year

1. Calculation of financing requirements

Financing requirements for Goal 13 are not calculated like any other indicators because the required funding to achieve the target has been calculated and submitted directly to the UNFCCC via the third two-yearly update reports containing the latest progress in the national climate change implementation. The amount of financing required to achieve the targeted climate action by 2030 is reported to be IDR4,000.2 trillion (USD272.7 billion). It must be noted that the amount may potentially double count various cross-sectoral indicators, for example the budget may be used to increase renewable energy mix, reduce GHG emissions, and support the poor in accessing electricity. This should be recognized as a limitation in this study.

As part of the UNFCCC implementation, Indonesia is obligated to report its activities related to climate change, covering every policy, regulation, institution, funding, and various climate change aspects, including greenhouse gas inventory, mitigation, adaptation, MRV (measurement, reporting, and verification), capacity building, and technology support. Through this document, Indonesia can also disseminate information on the obstacles/constraints in addressing the impacts of climate change and its many experiences and learnings from actions taken.

2. Financing strategies

In essence, financial requirements to achieve targets in SDG 13 cannot be assessed as an independent variable because SDG 13 also plays an important part in the successful implementation of 11 other goals, namely SDGs 1, 2, 3, 6, 7, 8, 9, 11, 12, 14, and 15, with 93 targets related to climate and environment focusing on energy, forestry, food resilience, health, and poverty (UNEP, n.d.).

Indicator 14.5.1: Coverage of marine conservation area

1. Calculation of financing requirements

Projection of the financing required to support marine ecosystem targets is based on government expenditure realization via Special Allocation Fund for Physical Development (DAK Fisik) for marine and fishery in 2018–2022. The assessment assumes that the unit cost value is derived from the average DAK Fisik published by the Ministry of Finance. Subsequently, the value is used to prepare the projection for funding requirements to meet the target from 2023 to 2030. To accelerate development, the national government has allocated DAK Fisik in the State Budget to be distributed to specific regions to support appropriate subnational activities in line with national priorities. DAK Fisik for marine and fishery is intended to support national development priority targets, especially food resilience and subnational development related to the management of conservation areas, coastal areas, and small islands.

Figure 4.20 Financial requirements to increase the coverage of marine conservation area

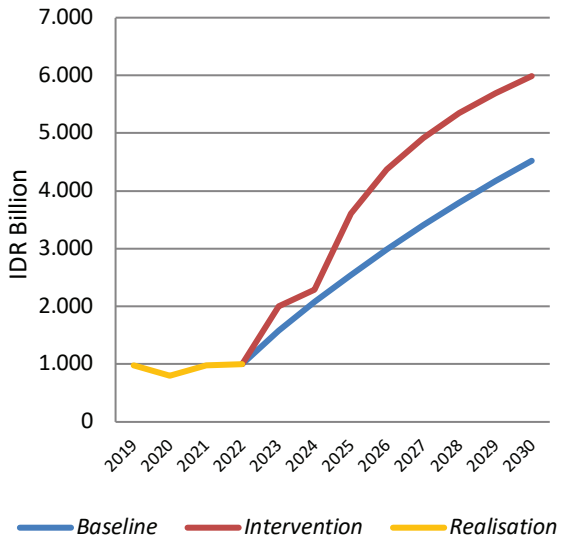


Table 4.14 Financing gap to increase the coverage of marine conservation area

Year	Scenario cost (IDR billion)		Scenario cost (USD million)	
	Baseline	Intervention	Baseline	Intervention
2023	1,579	1,994	103	130
2024	2,079	2,287	144	158
2025	2,545	3,602	174	246
2026	2,985	4,372	201	294
2027	3,402	4,919	225	326
2028	3,795	5,346	248	349
2029	4,168	5,691	268	366
2030	4,522	5,988	286	379
Total	**25,075**	**34,200**	**1,648**	**2,248**

Figure 4.20 and Table 4.14 show that financing requirements are gradually trending up, for both the baseline and intervention models, with the gap between the two models growing wider and wider by 2030.

2. Financing strategies

Financing strategies to support achieving the target for marine ecosystem in Indonesia are sourced from a combination of subnational and national budgets; the financing strategy is also supported by other programs, including financing from 'polluter pays principle' and strategic financing from international development organizations and private investors, including multilateral development bank (ADB, 2021). Furthermore, Indonesia also has innovative fiscal and economic instruments to support sustainable marine economy; such instruments include blue obligation (sukuk), ecology fiscal transfer (for instance, Ecology-Based National Budget Transfer (TANE/*Transfer Anggaran Nasional Berbasis Ekologi*), Ecology-Based Provincial Budget Transfer (TAPE/*Transfer Anggaran Provinsi Berbasis Ekologi*), and Ecology-Based District Budget Transfer (TAPE/*Transfer Anggaran Kabupaten Berbasis Ekologi*)) climate mitigation and adaptation from the national budget to create sustainable marine economy through the Ministry of Marine Affairs and Fisheries, official development assistance (ODA) for marine economy, where Indonesia is the world's largest beneficiary country, as well as foreign investments (PMA/*Penanaman Modal Asing*) in the fishery sector (OECD, 2021b).

CHAPTER V
CONCLUSION AND GOING FORWARD

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In a special report published May 2023, the UN Secretary General stated that many of the achievements for SDGs targets are moderately or severely off-track. This is despite the fact that SDGs is a promise that we must keep for the betterment of current and future generations. Therefore, the report declared the need for a fundamental shift in commitment, solidarity, financing, and actions. In no uncertain terms, the UN General Secretary urged all top state leaders to recommit in the remaining seven years of the SDGs agenda to take rapid, continuous, and transformative actions in order to fulfill the promise made in 2015.

In line with the global call, Indonesia understands the urgency of such fundamental shift because without it, any SDGs achievements will be hard to attain given the shorter time frame. Of course, the essential issue in such fundamental shift – including recommitting and accelerating – is a remapping of targets and achievement progress. With the remap, we can also refocus, which is crucial considering the limited resources and time.

The 2023–2030 SDGs Roadmap is a revision of Indonesia's prior SDGs roadmap because (a) feedbacks from the monitoring of SDGs achievements should be taken into account; (b) SDGs achievement scenarios need revisions due to previously unanticipated external factors such the crisis from COVID-19 pandemic. Furthermore, this roadmap also maps out the ongoing policies and programs and identifies what can still be optimized. As there are only seven years left to achieve SDGs, the efforts to refocus various actions also require information on what needs to be prioritized. The report provides analysis that identifies priority indicators as additional information for the government to carry out its priorities and financing strategies for these SDGs achievement programs.

The hope is that this roadmap can serve as a reference in the remaining seven years of the SDGs achievement agenda. More precisely, the roadmap is expected to become a reference in the government and for all stakeholders to achieve SDGs in (a) planning and determining the priority scale where critical areas can be identified. Thus, the government, various relevant organizations, and stakeholders can allocate resources effectively and efficiently to address the most urgent SDGs challenges; (b) carrying out coordination, especially in areas where various indicators and SDGs achievements are interlinked. This will ensure that the efforts are synchronized and synergized to maximize the impacts and avoid duplications; (c) monitoring and evaluation where a clear framework in the baseline scenario and intervention target can be relied on to track progress towards SDGs. Various milestones in this roadmap are the result of consensus from stakeholders and inputs from experts.

Thus, future monitoring is based on an accountable technocratic approach. As such, routine monitoring and evaluation based on this roadmap allow timely strategy improvements and adjustments, if needed; (d) communication and engagement of stakeholders, where the roadmap functions as a communication medium to engage and drive stakeholders at the national and subnational level towards a shared objective of achieving SDGs. This will help build partnerships, share information, and coordinate efforts between the government, civil society, private sector, and other stakeholders; (e) integrating SDGs into the medium-term and long-term development plans, in which the roadmap is also synergized with other development plans, so Indonesia's future development will always be kept within the sustainability corridor, while also maintaining coordination among sectors and among stakeholders, and engaging all parties in planning and implementation.

MINISTER OF NATIONAL DEVELOPMENT PLANNING/ HEAD OF NATIONAL DEVELOPMENT PLANNING AGENCY,

signed

SUHARSO MONOARFA

COPY OF APPENDIX II OF DECREE OF THE MINISTER OF NATIONAL DEVELOPMENT PLANNING/ HEAD OF NATIONAL DEVELOPMENT PLANNING AGENCY NO. KEP. 118/M.PPN/HK/08/2023 DATED 31 AUGUST 2023

PROJECTIONS OF MAIN INDICATORS

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	1.1.1*	Extreme poverty level	PCT	methodsx baseline	2022	2.5	2.5	2.14	1.81	1.51	1.24	0.98	0.73	0.49	0.26
1	1.1.1*	Extreme poverty level	PCT	logarithm intervention	2022	2.5	2.5	1.71	1.25	0.92	0.67	0.46	0.29	0.13	0
1	1.2.1*	Percentage of population living below the national poverty line, by sex and age	PCT	baseline	2022	9.54	9.54	8.51	8.21	7.92	7.64	7.37	7.1	6.85	6.61
1	1.2.1*	Percentage of population living below the national poverty line, by sex and age	PCT	intervention	2022	9.54	9.54	8.47	7.74	7.06	6.33	5.64	5.01	4.4	3.83
1	1.3.1.(b)	Proportion of workers covered by the social insurance for employment program: Formal Workers	PCT	power baseline	2022	57.46	57.46	60.51	61.15	61.75	62.32	62.86	63.38	63.87	64.34
1	1.3.1.(b)	Proportion of workers covered by the social insurance for employment program: Formal Workers	PCT	power intervention	2022	57.46	57.46	59.95	62.42	64.87	67.32	69.76	72.2	74.63	77.06
1	1.3.1.(b)	Proportion of workers covered by the social insurance for employment program: Informal Workers	PCT	linear baseline	2022	13.52	13.52	11.32	12.81	14.29	15.78	17.27	18.76	20.24	21.73
1	1.3.1.(b)	Proportion of workers covered by the social insurance for employment program: Informal Workers	PCT	power intervention	2022	13.52	13.52	13.76	17.54	22	27.23	33.3	40.27	48.23	57.26
2	2.1.1*	Prevalence of Undernourishment	PCT	methodsx baseline	2022	10.21	10.21	9.92	9.64	9.39	9.15	8.92	8.69	8.46	8.23
2	2.1.1*	Prevalence of Undernourishment	PCT	logarithm intervention	2022	10.21	10.21	6.92	5	4.5	4.21	4	3.84	3.71	3.6
2	2.1.2*	Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale	PCT	logarithm baseline	2022	4.85	4.85	4.89	4.91	4.84	4.79	4.76	4.74	4.72	4.7
2	2.1.2*	Prevalence of moderate or severe food insecurity in	PCT	logarithm intervention	2022	4.85	4.85	4.31	4	3.75	3.6	3.5	3.42	3.36	3.3

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
		the population, based on the Food Insecurity Experience Scale													
2	2.2.1*	Prevalence of stunting among children under 5 years of age	PCT	methodsx baseline	2022	21.6	21.6	21.27	20.95	20.65	20.36	20.07	19.78	19.49	19.2
2	2.2.1*	Prevalence of stunting among children under 5 years of age	PCT	intervention	2022	21.6	21.6	17.5	14	13	12	11	9.9	8.9	7.9
2	2.2.2*	Prevalence of wasting (weight for height) among children under 5 years of age, by type	PCT	baseline	2021	7.1	6.96	6.81	6.67	6.52	6.38	6.23	6.09	5.9	5.66
2	2.2.2*	Prevalence of wasting (weight for height) among children under 5 years of age, by type	PCT	intervention	2021	7.1	6.53	5.96	5.39	4.82	4.25	3.68	3.11	2.54	1.98
2	2.3.1*	Production volume per employed person by farming/animal husbandry/fishery/forestry agribusiness classification	ProdVol/EmployedClass	Intervention	2020	36.3	39.11	40.43	41.79	43.2	44.5	45.8	47.2	48.5	49.9
3	3.1.1*	Maternal Mortality Ratio (AKI)	Incidence per 100k	methodsx baseline	2020	189	181.37	176.08	171.21	166.84	162.74	158.84	155.07	151.41	147.87
3	3.1.1*	Maternal Mortality Ratio (AKI)	Incidence per 100k	intervention	2020	189	155	140	127	115	104	94	85	77	70
3	3.1.2*	Proportion of ever-married women 15–49 years of age whose latest birth process is (a) attended by skilled health personnel	PCT	methodsx baseline	2021	95.93	96.31	96.72	97.1	97.45	97.77	98.07	98.37	98.66	98.93
3	3.1.2*	Proportion of ever-married women 15–49 years of age whose latest birth process is (a) attended by skilled health personnel	PCT	Exponential intervention	2021	95.93	96.7	97.43	98.17	98.91	99.66	100	100	100	100
3	3.1.2*	Proportion of ever-married women 15–49 years of age whose latest birth process is (b) carried out in a healthcare facility	PCT	logarithm baseline	2021	88.91	90.11	91.37	92.54	93.63	94.66	95.62	96.54	97.41	98.24

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
3	3.1.2*	Proportion of ever-married women 15–49 years of age whose latest birth process is (b) carried out in a healthcare facility	PCT	Exponential intervention	2021	88.91	91.58	93.75	95.99	98.27	100	100	100	100	100
3	3.2.1*	(a) Under-Five Mortality Rate (AKBa) per 1,000 live births	Per 1k	methodsx baseline	2017	32	30.42	29.79	29.19	28.64	28.12	27.61	27.11	26.61	26.12
3	3.2.1*	(a) Under-Five Mortality Rate (AKBa) per 1,000 live births	Per 1k	logarithm intervention	2017	32	25.8	25.26	24.8	22.66	21.41	20.53	19.84	19.28	18.8
3	3.2.1*	(b) Infant Mortality Rate (AKB) per 1,000 live births	Per 1k	baseline	2020	16.9	15.75	14.94	14.18	13.49	12.83	12.2	11.58	10.97	10.38
3	3.2.1*	(b) Infant Mortality Rate (AKB) per 1,000 live births	Per 1k	intervention	2020	16.9	13.86	12.55	11.36	10.29	9.31	8.43	7.63	6.91	6.26
3	3.2.2*	Neonatal Mortality Rate (AKN) per 1,000 live births	Per 1k	baseline	2015	10.9	9.04	8.82	8.6	8.39	8.23	8.07	7.91	7.75	7.6
3	3.2.2*	Neonatal Mortality Rate (AKN) per 1,000 live births	Per 1k	intervention	2015	10.9	8.25	7.82	7.4	6.98	6.56	6.16	5.78	5.43	5.1
3	3.3.1*	Number of new HIV infections per 1,000 uninfected population	Per 1k	power baseline	2021	0.1	0.09	0.08	0.06	0.05	0.04	0.04	0.03	0.03	0.02
3	3.3.1*	Number of new HIV infections per 1,000 uninfected population	Per 1k	exponential intervention	2021	0.1	0.09	0.07	0.05	0.04	0.03	0.02	0.02	0.01	0.01
3	3.3.2*	Tuberculosis incidence per 100,000 population	Incidence per 100k	linear baseline	2020	301	298.42	294.62	290.82	287.02	283.22	279.42	275.62	271.82	268.02
3	3.3.2*	Tuberculosis incidence per 100,000 population	Incidence per 100k	linear intervention	2020	301	273.25	245.5	190	169.17	148.33	127.5	106.67	85.83	65
3	3.3.3*	Malaria incidence per 1,000 population	Per 1k	logarithm baseline	2021	1.12	0.89	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.8
3	3.3.3*	Malaria incidence per 1,000 population	Per 1k	linear intervention	2021	1.12	0.9	0.88	0.87	0.85	0.83	0.81	0.79	0.78	0.76
3	3.4.1.(a)	Percentage of smoking in the 10-18 years age group	PCT	logarithm baseline	2018	9.1	10.12	10.3	10.47	10.62	10.77	10.91	11.04	11.17	11.28
3	3.4.1.(a)	Percentage of smoking in the 10-18 years age group	PCT	logarithm intervention	2018	9.1	8.77	8.73	8.7	8.27	8.02	7.85	7.71	7.6	7.5
3	3.5.2*	Alcohol consumption (liter per capita) by the population aged 10–15 years within the last year	PCT	power baseline	2021	0.36	0.39	0.38	0.37	0.37	0.36	0.36	0.36	0.35	0.35

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
3	3.5.2*	Alcohol consumption (liter per capita) by the population aged 10–15 years within the last year	PCT	linear intervention	2021	0.36	0.38	0.36	0.35	0.34	0.32	0.31	0.3	0.29	0.27
3	3.7.2*	Adolescent birth rate (aged 15–19 years) per 1,000 women in that age group	Per 1k	exponential baseline	2017	36	27	25.49	24.07	22.72	21.45	20.25	19.12	18.05	17.04
3	3.7.2*	Adolescent birth rate (aged 15–19 years) per 1,000 women in that age group.	Per 1k	linear intervention	2017	36	24	21.6	19.2	16.8	14.4	12	9.6	7.2	4.8
3	3.7.2.(a)	Total Fertility Rate	Per 1k	baseline	2020	2.1	2.08	2.07	2.06	2.05	2.04	2.04	2.03	2.03	2.02
3	3.7.2.(a)	Total Fertility Rate	Per 1k	intervention	2020	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
3	3.8.2*	Proportion of population with large household expenditures on health as a share of total household expenditure or income: Proportion of health expenditures > 10 percent	PCT	exponential baseline	2021	1.97	1.74	1.53	1.35	1.19	1.05	0.93	0.82	0.72	0.64
3	3.8.2*	Proportion of population with large household expenditures on health as a share of total household expenditure or income: Proportion of health expenditures > 10 percent	PCT	logarithm intervention	2021	1.97	1.72	1.49	1.28	1.08	0.89	0.72	0.55	0.39	0.24
3	3.8.2*	Proportion of population with large household expenditures on health as a share of total household expenditure or income: Proportion of health expenditures > 25 percent	PCT	power baseline	2021	0.35	0.29	0.24	0.21	0.18	0.15	0.13	0.12	0.11	0.09
3	3.8.2*	Proportion of population with large household expenditures on health as a share of total household expenditure or income: Proportion of health expenditures > 25 percent	PCT	exponential intervention	2021	0.35	0.28	0.23	0.18	0.15	0.12	0.1	0.08	0.06	0.05

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
3	3.8.2.(a)	Coverage of National Health Insurance (JKN)	PCT	baseline	2022	91.77	91.77	92.32	93.75	95.03	96.18	97.24	98.21	99.11	99.95
3	3.8.2.(a)	Coverage of National Health Insurance (JKN)	PCT	intervention	2022	91.77	91.77	92.86	93.95	95.03	96.12	97.21	98.3	99.39	100
4	4.1.1.(a)	Proportion of children and young people in grade 5 achieving at least a minimum proficiency level in: (i) reading	PCT	intervention	2020	53.17	58	60	63	65.25	67.72	70.18	72.65	75.11	77.58
4	4.1.1.(a)	Proportion of children and young people in grade 5 achieving at least a minimum proficiency level in: (ii) mathematics	PCT	intervention	2020	22.87	28.3	29.2	30.1	32.45	34.08	35.7	37.33	38.95	40.58
4	4.1.1.(a)	Proportion of children and young people in grade 8 achieving at least a minimum proficiency level in: (i) reading	PCT	intervention	2020	30.1	58	60	63	65.5	68.1	70.7	73.3	75.9	78.5
4	4.1.1.(a)	Proportion of children and young people in grade 8 achieving at least a minimum proficiency level in: (ii) mathematics	PCT	intervention	2020	28.1	28.3	29.2	30.1	30.4	30.98	31.56	32.14	32.72	33.3
4	4.1.2*	Completion rate of primary education (SD)/similar level	PCT	baseline	2022	97.82	97.82	97.99	98.17	98.35	98.52	98.7	98.88	99.05	99.23
4	4.1.2*	Completion rate of primary education (SD)/similar level	PCT	intervention	2022	97.82	97.82	97.99	98.17	98.35	98.52	98.7	98.88	99.05	99.23
4	4.1.2*	Completion rate of upper secondary education (SMA)/similar level	PCT	baseline	2022	65.23	65.23	66.01	66.76	67.44	68.07	68.66	69.2	69.71	70.19
4	4.1.2*	Completion rate of upper secondary education (SMA)/similar level	PCT	intervention	2022	65.23	65.23	66.32	67.4	68.49	69.57	70.66	71.74	72.83	73.91
4	4.1.2*	Completion rate of lower secondary education (SMP)/similar level	PCT	baseline	2022	90.12	90.12	90.17	90.21	90.66	91.07	91.45	91.8	92.13	92.43
4	4.1.2*	Completion rate of lower secondary education (SMP)/similar level	PCT	intervention	2022	90.12	90.12	90.94	91.76	92.58	93.4	94.22	95.04	95.86	96.68

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
4	4.1.2.(a)	Dropout rate in primary education (SD)/similar level	PCT	baseline	2022	0.71	0.71	0.65	0.64	0.63	0.62	0.61	0.6	0.59	0.58
4	4.1.2.(a)	Dropout rate in upper secondary education (SMA)/similar level	PCT	baseline	2022	22.52	22.52	22	21.9	21.81	21.73	21.67	21.6	21.55	21.49
4	4.1.2.(a)	Dropout rate in upper secondary education (SMA)/similar level	PCT	intervention	2022	22.52	22.52	21.71	21.42	21.13	20.84	20.55	20.26	19.97	19.68
4	4.1.2.(a)	Dropout rate in lower secondary education (SMP)/similar level	PCT	baseline	2022	6.94	6.94	6.87	6.82	6.78	6.73	6.69	6.65	6.61	6.56
4	4.1.2.(a)	Dropout rate in lower secondary education (SMP)/similar level	PCT	exponential intervention	2022	6.94	6.94	6.77	6.69	6.62	6.55	6.48	6.41	6.34	6.27
4	4.2.2*	Level of participation in organized learning (one year before primary education age), by sex	PCT	baseline	2022	95.1	95.1	95.66	95.71	95.76	95.81	95.86	95.91	95.95	96
4	4.2.2*	Level of participation in organized learning (one year before primary education age), by sex	PCT	intervention	2022	95.1	95.1	95.98	96.5	96.87	97.16	97.39	97.59	97.76	97.91
4	4.3.1.(a)	Gross Enrollment Ratio (APK) in Higher Education (PT)	PCT	baseline	2021	31.19	31.16	32.37	33.59	34.8	36.02	37.23	38.44	39.66	40.87
4	4.3.1.(a)	Gross Enrollment Ratio (APK) in Higher Education (PT)	PCT	intervention	2021	31.19	31.16	32.41	33.67	34.92	36.18	37.43	38.68	39.94	41.19
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in Higher Education: (a) women/men	PCT	logarithm baseline	2022	109.67	109.67	108.95	108.27	107.64	107.05	106.49	105.96	105.46	104.98
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in Higher Education: (a) women/men	PCT	logarithm intervention	2022	109.67	109.67	108.95	108.27	107.64	106.78	105.09	103.39	101.7	100
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in Higher Education: (b) rural/urban	PCT	power baseline	2022	58.03	58.03	63.17	68.36	73.61	78.9	84.24	89.62	95.05	100.51
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in Higher Education: (b) rural/urban	PCT	exponential intervention	2022	58.68	58.68	65.04	72.09	79.91	88.57	98.17	100	100	100

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in Higher Education: (c) bottom/top quintile	PCT	baseline	2022	34.85	37.91	31.08	32.69	34.24	35.75	37.2	38.61	39.97	41.29
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in Higher Education: (c) bottom/top quintile	PCT	intervention	2022	36.6	37.91	40	43	46	49	52	55	58	61
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in upper secondary education (SMA)/vocational education (SMK)/similar level: (a) women/men	PCT	baseline	2022	105.53	105.53	105.3	105.07	104.84	104.61	104.39	104.16	103.94	103.72
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in upper secondary education (SMA)/vocational education (SMK)/similar level: (a) rural/urban	PCT	baseline	2022	91.58	91.58	91.91	92.25	92.58	92.91	93.24	93.57	93.9	94.23
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in upper secondary education (SMA)/vocational education (SMK)/similar level: (a) rural/urban	PCT	intervention	2022	91.58	91.58	92.32	93.07	93.81	94.55	95.29	96.02	96.76	97.49
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in upper secondary education (SMA)/vocational education (SMK)/similar level: (c) bottom/top quintile	PCT	baseline	2022	77.98	77.98	78.74	79.68	80.53	81.31	82.03	82.7	83.33	83.92
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in upper secondary education (SMA)/vocational education (SMK)/similar level: (c) bottom/top quintile	PCT	intervention	2022	77.98	77.98	79.06	80.14	81.25	82.36	83.49	84.63	85.78	86.93
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in upper secondary education (SMA)/vocational education (SMK)/similar	PCT	baseline	2022	58.37	58.37	59.84	61.6	63.39	65.2	67.03	68.86	70.7	72.54

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
		level: (a) with/without disabilities													
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in upper secondary education (SMA)/vocational education (SMK)/similar level: (a) with/without disabilities	PCT	intervention	2022	58.37	58.37	61.18	63.91	66.57	69.17	71.69	74.16	76.56	78.91
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in lower secondary education (SMP)/similar level: (a) women/men	PCT	baseline	2022	100.75	100.75	100.27	100.14	100.03	99.93	99.85	99.77	99.71	99.65
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in lower secondary education (SMP)/similar level: (a) women/men	PCT	intervention	2022	100.75	100.75	100.32	100.23	100.16	100.11	100.07	100.04	100.02	100
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in lower secondary education (SMP)/similar level: (a) rural/urban	PCT	baseline	2022	100.15	100.15	100.12	100.09	100.06	100.03	100.01	99.98	99.95	99.93
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in lower secondary education (SMP)/similar level: (c) bottom/top quintile	PCT	baseline	2022	98.12	98.12	97.15	97.33	97.49	97.63	97.77	97.9	98.01	98.12
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in lower secondary education (SMP)/similar level: (c) bottom/top quintile	PCT	intervention	2022	98.12	98.12	98.44	98.7	98.93	99.14	99.33	99.5	99.66	99.81
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in lower secondary education (SMP)/similar level: (d) with/without disabilities	PCT	baseline	2022	78.15	78.15	78.24	78.53	78.83	79.15	79.46	79.79	80.11	80.45
4	4.5.1*	(ii) Gross Enrollment Ratio (APK) in lower secondary education (SMP)/similar level: (d) with/without disabilities	PCT	intervention	2022	78.15	78.15	78.06	79.63	81.19	82.73	84.27	85.79	87.31	88.81
4	4.5.1*	Net Enrollment Ratio (NER) in primary education	PCT	baseline	2022	100.01	100.01	99.97	99.97	99.98	99.98	99.99	99.99	99.99	99.99

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
		(SD)/similar level: (a) women/men													
4	4.5.1*	Net Enrollment Ratio (NER) in primary education (SD)/similar level: (b) rural/urban	PCT	baseline	2022	99.55	99.55	99.59	99.64	99.68	99.73	99.77	99.82	99.86	99.91
4	4.5.1*	Net Enrollment Ratio (NER) in primary education (SD)/similar level: (b) rural/urban	PCT	exponential intervention	2022	100	100	100	100	100	100	100	100	100	100
4	4.5.1*	Net Enrollment Ratio (NER) in primary education (SD)/similar level: (c) bottom/top quintile	PCT	baseline	2022	99.81	99.81	99.83	99.84	99.85	99.86	99.87	99.88	99.9	99.91
4	4.5.1*	Net Enrollment Ratio (NER) in primary education (SD)/similar level: (d) with/without disabilities	PCT	baseline	2022	92.9	92.9	93.12	93.35	93.57	93.79	94.01	94.23	94.46	94.68
4	4.5.1*	Net Enrollment Ratio (NER) in primary education (SD)/similar level: (d) with/without disabilities	PCT	intervention	2022	92.9	92.9	93.23	93.55	93.88	94.2	94.53	94.85	95.18	95.5
4	4.c.1*	Percentage of teachers meeting qualifications in line with national standards by level and type of Education: (2) Percentage of teachers certified as educators	PCT	intervention	2020	67.5	91.41	78.2	81.8	86.68	88.25	89.83	91.4	92.97	94.55
5	5.3.1*	Proportion of women aged 20–24 years who were married or in a union before age 15	PCT	logarithm baseline	2022	0.46	0.46	0.51	0.5	0.5	0.49	0.49	0.48	0.48	0.48
5	5.3.1*	Proportion of women aged 20–24 years who were married or in a union before age 15	PCT	logarithm intervention	2022	0.46	0.46	0.5	0.49	0.48	0.48	0.47	0.46	0.45	0.44
5	5.3.1*	Proportion of women aged 20–24 years who were married or in a union before age 18	PCT	power baseline	2022	8.06	8.06	8.75	8.5	8.26	8.05	7.86	7.68	7.51	7.35
5	5.3.1*	Proportion of women aged 20–24 years who were	PCT	exponential intervention	2022	8.06	8.06	8.39	7.98	7.6	7.23	6.88	6.55	6.23	5.93

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
		married or in a union before age 18													
5	5.5.2*	Proportion of women in managerial positions	PCT	power baseline	2021	32.5	35.42	37.05	38.64	40.18	41.69	43.16	44.6	46.01	47.4
5	5.5.2*	Proportion of women in managerial positions	PCT	power intervention	2021	32.5	37	39.91	42.12	43.92	45.44	46.77	47.96	49.02	50
6	6.1.1*	(a) Proportion of households using safely-managed drinking water services (Improved drinking water) (Ladder 4)	PCT	baseline	2021	11.8	12.87	13.4	13.93	13.72	13.5	13.29	13.07	12.86	12.64
6	6.1.1*	(a) Proportion of households using safely-managed drinking water services (Improved drinking water) (Ladder 4)	PCT	intervention	2021	11.8	21.43	26.25	31.06	33.36	35.66	37.96	40.26	42.56	45
6	6.2.1*	(a) Proportion of households using hand-washing facilities with soap and water	PCT	methodsx baseline	2021	79.59	80.63	81.8	82.9	83.91	84.88	85.82	86.74	87.65	88.54
6	6.2.1*	(a) Proportion of households using hand-washing facilities with soap and water	PCT	exponential intervention	2021	79.59	83.31	85.87	88.51	91.23	94.03	96.92	99.9	100	100
6	6.2.1*	(b) Proportion of households using improved sanitation services.	PCT	methodsx baseline	2021	80.29	80.96	81.74	82.49	83.18	83.86	84.53	85.2	85.88	86.56
6	6.2.1*	(b) Proportion of households using improved sanitation services.	PCT	linear intervention	2021	80.29	83.52	86.76	90	91.67	93.33	95	96.67	98.33	100
6	6.2.1*	(b) Proportion of households using improved sanitation services.	PCT	intervention	2021	5.37	7.07	9.12	11.3	14.45	16.6	19.85	23.1	26.4	31.42
7	7.1.1.(a)	Electricity consumption per capita	kWh/capita	linear baseline	2021	1,123.00	1,189.44	1,228.65	1,267.85	1,307.06	1,346.27	1,385.48	1,424.69	1,463.90	1,503.11
7	7.1.1.(a)	Electricity consumption per capita	kWh/capita	power intervention	2021	1,123.00	1,253.87	1,337.39	1,400.00	1,491.72	1,548.13	1,589.45	1,622.25	1,649.56	1,673.00
7	7.2.1*	Renewable energy in the energy mix	PCT	linear baseline	2021	12.16	12.49	13.35	14.21	15.07	15.93	16.8	17.66	18.52	19.38

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
7	7.2.1*	Renewable energy in the energy mix	PCT	linear intervention	2021	12.16	13.14	14.12	15.11	16.09	17.07	18.05	19.04	20.02	21
7	7.3.1*	Primary energy intensity	BOE/IDR Mil	baseline	2021	133.9	129.85	126.17	122.86	119.55	117.35	115.14	113.67	112.93	111.83
7	7.3.1*	Primary energy intensity	BOE/IDR Mil	intervention	2021	133.9	129.01	124.63	119.43	113.5	110.53	108.68	106.45	104.22	102.37
8	8.1.1*	Growth rate of real GDP per capita	PCT	baseline	2022	4	4	4	4	4	4.1	4.1	4.1	4.2	4.2
8	8.1.1*	Growth rate of real GDP per capita	PCT	intervention	2022	4.4	4.4	4.4	4.4	4.5	4.7	4.8	5	5.2	5.7
8	8.2.1*	Growth rate of GDP per employed person	PCT	baseline	2021	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85
8	8.2.1*	Growth rate of GDP per employed person	PCT	intervention	2021	2.85	2.85	3	3.1	3.3	3.6	3.6	3.9	4.1	4.6
8	8.3.1.(a)	Percentage of Micro, Small, and Medium Enterprises (MSME) with access to financial services	PCT	logarithm baseline	2019	24.4	27.01	27.64	28.22	28.77	29.28	29.76	30.22	30.65	31.06
8	8.3.1.(a)	Percentage of Micro, Small, and Medium Enterprises (MSME) with access to financial services	PCT	logarithm intervention	2019	24.4	29.35	30.15	30.8	34.65	36.9	38.49	39.73	40.74	41.6
8	8.5.2	Open unemployment rate, by sex and age	PCT	linear baseline	2022	5.86	5.86	5.75	5.7	5.65	(5.6)	5.54	5.49	5.44	5.39
8	8.5.2	Open unemployment rate, by sex and age	PCT	intervention	2022	5.86	5.86	(5.6)	5.4	5.3	5.2	5.1	5	4.9	4.8
8	8.9.1*	Proportion of tourism contribution to total GDP	PCT	exponential baseline	2022	3.6	3.6	3.74	3.89	4.03	4.18	4.32	4.46	4.61	4.75
8	8.9.1*	Proportion of tourism contribution to total GDP	PCT	exponential intervention	2022	3.6	3.6	4.1	4.5	4.6	4.69	4.79	4.9	5	5.13
8	8.9.1.(a)	Number of foreign tourists	Number (millions)	linear baseline	2022	5.47	5.47	6.63	7.79	8.96	10.12	11.28	12.44	13.6	14.76
8	8.9.1.(a)	Number of foreign tourists	Number (millions)	linear intervention	2022	5.47	5.47	7.4	16.1	17.22	18.34	19.46	20.58	21.7	23.18
9	9.2.1*	Proportion of manufacturing value-added to GDP	PCT	exponential baseline	2021	20.55	20.32	20.15	19.98	19.82	19.65	19.49	19.32	19.16	19
9	9.2.1*	Proportion of manufacturing value-added to GDP	PCT	exponential intervention	2021	20.55	20.7	20.85	21	21.84	22.72	23.63	24.58	25.57	26.6
9	9.2.2*	Proportion of employment in the manufacturing industry sector	PCT	logarithm baseline	2021	14.27	13.78	13.58	13.39	13.22	13.06	12.9	12.76	12.62	12.49

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
9	9.2.2*	Proportion of employment in the manufacturing industry sector	PCT	logarithm intervention	2021	14.27	14.98	15.4	15.7	16.51	16.99	17.32	17.59	17.8	17.98
9	9.5.1*	Proportion of government research budget to GDP	PCT	baseline	2021	0.28	0.3	0.31	0.32	0.33	0.35	0.36	0.38	0.39	0.41
9	9.5.1*	Proportion of government research budget to GDP	PCT	linear intervention	2021	0.28	0.33	0.37	0.42	0.46	0.49	0.53	0.56	0.6	0.63
9	9.c.1*	Proportion of population covered by mobile broadband	PCT	logarithm baseline	2021	96.19	98.94	100	100	100	100	100	100	100	100
10	10.1.1*	Gini Ratio	Ratio	logarithm baseline	2022	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.37	0.37	0.37
10	10.1.1*	Gini Ratio	Ratio	logarithm intervention	2022	0.38	0.38	0.38	0.37	0.37	0.37	0.37	0.37	0.36	0.36
10	10.4.1.(b)	Proportion of workers covered by the social insurance for employment program: Formal Workers	PCT	power baseline	2022	57.46	57.46	60.51	61.15	61.75	62.32	62.86	63.38	63.87	64.34
10	10.4.1.(b)	Proportion of workers covered by the social insurance for employment program: Formal Workers	PCT	power intervention	2022	57.46	57.46	59.95	62.42	64.87	67.32	69.76	72.2	74.63	77.06
10	10.4.1.(b)	Proportion of workers covered by the social insurance for employment program: Informal Workers	PCT	linear baseline	2022	13.52	13.52	11.32	12.81	14.29	15.78	17.27	18.76	20.24	21.73
10	10.4.1.(b)	Proportion of workers covered by the social insurance for employment program: Informal Workers	PCT	power intervention	2022	13.52	13.52	13.76	17.54	22	27.23	33.3	40.27	48.23	57.26
11	11.1.1.(a)	Proportion of households with access to adequate and affordable housing	PCT	logarithm baseline	2021	60.9	63.09	64.88	66.55	68.11	69.58	70.96	72.27	73.51	74.69
11	11.1.1.(a)	Proportion of households with access to adequate and affordable housing	PCT	logarithm intervention	2021	60.9	67.49	71.34	74.08	79.95	83.39	85.83	87.72	89.26	90.57
12	12.3.1.(a)	Food Loss	kg/capita/year	baseline	2022	77.74	77.74	80.11	82	83.9	84.85	87.22	89.59	92.43	94.01
12	12.3.1.(a)	Food Loss	kg/capita/year	intervention	2022	77.74	77.74	77.26	77.26	76.79	76.31	77.26	77.74	77.74	78.4
12	12.3.1.(b)	Food Waste	kg/capita/year	baseline	2021	87.5	87.5	90	92.5	97.5	105.84	109.17	118.34	124.17	133.07
12	12.3.1.(b)	Food Waste	kg/capita/year	intervention	2021	87.5	86.67	84.17	75	70.83	67.5	65.83	65.83	65	64.88

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
13	13.2.2.(b)	Reduction in Emission Intensity	PCT	baseline	2015	0.72	0.81	-5.29	-9.35	-7.94	-11.44	-21.57	-27.31	-26.23	-26.7
13	13.2.2.(b)	Reduction in Emission Intensity	PCT	intervention	2015	0.4	-25.36	-33.52	-38.57	-38.55	-44.81	-55.08	-62.13	-62.37	-68.12
13	13.2.2*	Total Emission	Gton Co2eq	baseline	2010	1.33	2.1	2.06	2.08	2.23	2.26	2.11	2.07	2.22	2.33
13	13.2.2*	Total Emission	Gton Co2eq	intervention	2010	1.33	1.56	1.46	1.42	1.5	1.42	1.22	1.09	1.15	1.03
13	13.2.2.(a)	Percentage of cumulative emission reduction	PCT	baseline	2021	-26.59	-24.34	-22.4	-21.3	-20.14	-18.4	-16.99	-16.42	-16.02	-15.19
13	13.2.2.(a)	Percentage of cumulative emission reduction	PCT	intervention	2021	-26.59	-26.44	-26.61	-27.45	-28.12	-28.31	-28.82	-30.08	-31.49	-32.6
14	14.4.1*	Proportion of Fish Stocks within Biologically Sustainable Levels	PCT	linear baseline	2021	67.45	72.32	74.03	75.73	77.44	79.14	80.85	82.55	84.26	85.97
14	14.4.1*	Proportion of Fish Stocks within Biologically Sustainable Levels	PCT	exponential intervention	2021	67.45	76.05	78.33	80.67	83.09	85.58	88.14	90.78	93.49	96.29
14	14.5.1*	Coverage of protected areas in relation to marine areas	Thousand Ha	power baseline	2022	28.91	28.91	29.08	29.25	29.42	29.58	29.75	29.92	30.09	30.26
14	14.5.1*	Coverage of protected areas in relation to marine areas	Thousand Ha	linear intervention	2022	28.91	28.91	29.36	29.81	30.26	30.71	31.15	31.6	32.05	32.5
15	15.1.1*	Proportion of forest cover to total land area	PCT	baseline	2010	52	48.1	47.75	47.1	47	46.75	46.6	46.5	46.4	46.3
15	15.1.1*	Proportion of forest cover to total land area	PCT	intervention	2010	52	48.1	47.75	47.1	47	46.75	46.4	46.2	45.9	45.7
16	16.5.1.(a)	Anti-Corruption Behavior Index (IPAK).	Index	logarithm baseline	2022	3.93	3.93	3.92	3.95	3.98	4.01	4.03	4.06	4.08	4.1
16	16.5.1.(a)	Anti-Corruption Behavior Index (IPAK).	Index	logarithm intervention	2022	3.93	3.93	4.14	4.2	4.33	4.4	4.45	4.49	4.52	4.55
16	16.7.2.(a)	Democratic Institution Capacity Index	Index	logarithm baseline	2022	78.22	78.22	80.64	81.88	83.04	84.13	85.15	86.13	87.05	87.92
16	16.7.2.(a)	Democratic Institution Capacity Index	Index	Power intervention	2022	78.22	78.22	81.06	82.49	83.85	85.15	86.39	87.58	88.73	89.83
16	16.9.1*	Proportion of children under 5 years of age whose births have been registered with a civil authority, by age	PCT	methodsx baseline	2021	77.04	77.66	78.38	79.07	79.71	80.34	80.96	81.58	82.21	82.84
16	16.9.1*	Proportion of children under 5 years of age whose births have been	PCT	logarithm intervention	2021	77.04	88.52	95.24	100	100	100	100	100	100	100

Goal	Code	Nomenclature	Unit	Method	Starting Year	Value in Starting Year	2022	2023	2024	2025	2026	2027	2028	2029	2030
		registered with a civil authority, by age													
16	16.9.1.(a)	Percentage of population at the bottom 40% of income who have birth certificates	PCT	exponential baseline	2021	84.49	87.4	89.89	92.45	95.09	97.8	100	100	100	100
16	16.9.1.(a)	Percentage of population at the bottom 40% of income who have birth certificates	PCT	exponential intervention	2021	84.49	89.37	94.54	100	100	100	100	100	100	100
16	16.9.1.(b)	Percentage of children who have birth certificates	PCT	exponential baseline	2022	90.41	90.41	92.02	93.62	95.26	96.93	98.62	100	100	100
16	16.9.1.(b)	Percentage of children who have birth certificates	PCT	exponential intervention	2022	90.41	90.41	95.08	100	100	100	100	100	100	100
17	17.1.1.(a)	Ratio of tax revenue to GDP	PCT	logarithm baseline	2021	9.11	9.56	9.82	10	10	10.74	11.16	11.47	11.71	11.9
17	17.1.1.(a)	Ratio of tax revenue to GDP	PCT	logarithm intervention	2021	9.11	10.65	11.56	12.2	12.91	13.33	13.62	13.85	14.04	14.2
17	17.8.1*	Percentage of internet users	PCT	logarithm baseline	2022	77.02	77.02	84.48	87.79	90.88	93.79	96.53	99.12	100	100
17	17.8.1*	Percentage of internet users	PCT	logarithm intervention	2022	77.02	77.02	84.48	87.79	90.88	94.7	98.81	100	100	100
17	17.11.1.(b)	Indonesia's Share of Global Export	PCT	baseline	2021	1.05	1.22	1.23	1.22	1.21	1.2	1.2	1.22	1.24	1.27
17	17.11.1.(b)	Indonesia's Share of Global Export	PCT	intervention	2021	1.05	1.22	1.33	1.32	1.31	1.3	1.3	1.32	1.34	1.37

MINISTER OF NATIONAL DEVELOPMENT PLANNING/ HEAD OF NATIONAL DEVELOPMENT PLANNING AGENCY,

signed

SUHARSO MONOARFA

This copy conforms to the original Head of Legal Bureau,

Copy Decree of The Minister of National Development Planning/Head of National Development Agency

Minister of National Development Planning/ Head of National Development Planning Agency

COPY
DECREE OF THE MINISTER OF NATIONAL DEVELOPMENT PLANNING/ HEAD OF NATIONAL DEVELOPMENT PLANNING AGENCY NO. KEP.118/M.PPN/HK/08/2023
ON
2023–2030 SUSTAINABLE DEVELOPMENT GOALS (SDGs) ROADMAP

MINISTER OF NATIONAL DEVELOPMENT PLANNING/ HEAD OF NATIONAL DEVELOPMENT PLANNING AGENCY,

Considering :

a. that based on the mandate of Presidential Regulation No. 111 of 2022 on Implementations to Achieve Sustainable Development Goals, it is deemed necessary for the Government to issue a Sustainable Development Goals (SDGs) Roadmap;

b. that Presidential Regulation No. 18 of 2020 on 2020–2024 National Medium-Term Development Plan (RPJMN/*Rencana Pembangunan Jangka Menengah Nasional*) has incorporated SDGs targets and indicators into 7 (seven) national development agenda in the 2020–2024 National Medium-Term Development Plan (RPJMN);

c. that 2017–2030 SDGs Roadmap, as well as SDGs targets and indicators, needs to be updated to 2023–2030 Sustainable Development Goals (SDGs) Roadmap in accordance with Presidential Regulation No. 18 of 2020 on 2020–2024 National Medium-Term Development Plan as a guide for Ministries/Agencies, Provincial Governments and District/City Governments, Community Organizations, Philanthropists, Businesses, Academics, and other stakeholders to support national and subnational SDGs target achievements;

d. that based on considerations outlined in letter a, letter b, and letter c, it is deemed necessary to issue Decree of the Minister of National Development Planning/ Head of National Development Planning Agency on 2023–2030 Sustainable Development Goals (SDGs) Roadmap;

In view of :

1. Law No. 25 of 2004 on National Development Planning System (State Gazette of the Republic of Indonesia of 2004 No. 104, Supplement to the State Gazette of the Republic of Indonesia No. 4421);

2. Law No. 23 of 2014 on Regional Government (State Gazette of the Republic of Indonesia of 2014 No. 244), as amended several times with the last amendment by Law No. 9 of 2015 on Second Amendments to Law No. 23 of 2014 on Regional Government (State Gazette of the Republic of Indonesia of 2015 No. 58, Supplement to the State Gazette of the Republic of Indonesia No. 5679);
3. Presidential Regulation No. 59 of 2017 on Implementations to Achieve Sustainable Development Goals, as updated by Presidential Regulation No. 111 of 2022;
4. Presidential Regulation No. 68 of 2019 on Organization of State Ministries as amended by Presidential Regulation No. 32 of 2021;
5. Presidential Regulation No. 18 of 2020 on 2020–2024 National Medium-Term Development Plan;
6. Presidential Regulation No. 80 of 2021 on Ministry of National Development Planning;
7. Presidential Regulation No. 81 of 2021 on National Development Planning Agency;
8. Regulation of the Minister of National Development Planning/Head of National Development Planning Agency No. 3 of 2022 on Organization and Work Procedure of the Ministry of National Development Planning/National Development Planning Agency;

HAS DECIDED

To issue : DECREE OF THE MINISTER OF NATIONAL DEVELOPMENT PLANNING/HEAD OF NATIONAL DEVELOPMENT PLANNING AGENCY ON 2023–2030 SUSTAINABLE DEVELOPMENT GOALS (SDGS) ROADMAP.

FIRST : To Stipulate 2023–2030 Sustainable Development Goals (SDGs) Roadmap, hereinafter referred to as 2023–2030 SDGs Roadmap.

SECOND : The 2023–2030 SDGs Roadmap, as referred to in the FIRST statement, is prepared as a document for policy direction to achieve SDGs by 2030 and as a reference to prepare National Medium-Term Development Plans (RPJMNs), Subnational Medium-Term Development Plans (RPJMDs), National Action Plans (RANs), and Subnational Action Plans (RADs) for programs and activities undertaken by Ministries/Agencies, Provincial Governments and District/City Governments, Community Organizations, Philanthropists, Businesses, Academics, and other stakeholders to support national and subnational SDGs target achievements.

THIRD : The 2023–2030 SDGs Roadmap, as referred to in the FIRST statement, includes:

a. Narration for the 2023–2030 SDGs Roadmap in Appendix I of the Decree, which is an integral part of this Decree;

b. Target Matrix of SDG Indicators in Appendix II of the Decree, which is an integral part of this Decree; and

FOURTH : The 2023–2030 SDGs Roadmap, as referred to in the FIRST statement, lays out:

a. National SDGs targets by 2030; and

b. Updates from the 2017–2030 SDGs Roadmap,

as stipulated in accordance with provisions in the laws and regulations.

FIFTH : The Ministry of National Development Planning/National Development Planning Agency coordinates the implementation, monitoring, and evaluation of the 2023–2030 SDGs Roadmap by Ministries/Agencies, Provincial Governments and District/City Governments, Community Organizations, Philanthropists, Businesses, Academics, and other stakeholders.

SIXTH : This Decree comes into force on the date of issuance.

Issued in Jakarta on
31 August 2023

MINISTER OF NATIONAL DEVELOPMENT PLANNING/ HEAD OF NATIONAL DEVELOPMENT PLANNING AGENCY,

signed

SUHARSO MONOARFA

ROADMAP OF
SUSTAINABLE DEVELOPMENT GOALS
2023 - 2030

Supported By:
SDGs Center UNPAD, ADB, KfW and European Union

MINISTRY OF NATIONAL DEVELOPMENT PLANNING/ NATIONAL DEVELOPMENT PLANNING AGENCY
2023