CONVERGENCE ACTION BLUEPRINT – INDONESIA

DRAFT 21/01/2025

1. INTRODUCTION

The Convergence Action Blueprint (CAB) serves as a practical framework designed to facilitate synergies between **food systems transformation and climate action** to support the implementation of the 2030 Agenda and the Paris Agreement objectives at national level. Indonesia's CAB is a living document and will be updated periodically. It provides a structured approach for conceptualizing and implementing strategic actions in Indonesia that align with both agendas while promoting sustainable development. The CAB is divided into four main pillars, namely:

I.   convergence vision and objectives,
II. key convergence interventions,
III. convergence milestones, and
IV. monitoring, evaluation, and accountability.

2. BACKGROUND

Indonesia, as part of its Indonesia Emas 2045 vision[1], has recognized the urgent need to accelerate food systems transformations to address interconnected challenges posed by climate change, pollution, and biodiversity loss. **The Convergence Initiative serves as a strategic effort to align Indonesia's food systems transformation agenda with the United Nations Sustainable Development Goals (SDGs) and the Paris Agreement on climate change, particularly through its national policies, including the Long-Term National Development Plan (RPJPN) 2025-2045 and Medium-Term National Development Plan (RPJMN) 2025-2029.**

This initiative complements Indonesia's climate commitments, as the Agriculture, Forestry, and other Land Use (AFOLU) sector represents a significant portion of the country's emissions reduction target in its Nationally Determined Contributions (NDC).

The Convergence Initiative in Indonesia is part of the country's commitment to tackle the triple planetary crisis – climate change, pollution, and biodiversity loss – aligned with food systems transformation through the long-term and medium-term development plans. These plans integrate climate action with sustainable agriculture practices, supporting both emissions reduction goals and food security objectives outlined in the NDC and Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR) 2050.

The Convergence Initiative inception workshop was organized in Jakarta on 6-8 November 2024 with 52 participants from government and non-government representatives.

3. FOOD SYSTEMS AND CLIMATE ACTION IN INDONESIA

Indonesia's current food systems and climate policies reflect a dual focus: addressing immediate challenges while charting a sustainable path for the future. The stagnation of progress toward SDGs, including SDG 2 (Zero Hunger), has been influenced by global disruptions such as the COVID-19 pandemic. Indonesia's SDG index score of 69.43 percent highlights both significant advancements and persistent challenges within the country's agrifood systems.

The hidden environmental costs are a major issue in Indonesia's agrifood systems. With a population of approximately 270 million and the 16th largest economy in the world, Indonesia is currently among the ten largest GHG emitting countries. The 3rd Biennial Update Report (BUR) reported increase in emission level to 1.845 GtCO2-eq in 2019, dominated by emissions from LUCF (land use change and forestry) including peat fires (50.13 percent) followed by energy (34.49 percent), waste (6.52 percent) and agriculture (5.71 percent). Also, Indonesia's food system faces significant hidden costs from climate change impacts, including agricultural losses from extreme weather events, and water pollution. These environmental externalities are compounded by social costs like health impacts from changing nutrition patterns and economic losses from reduced agricultural productivity.

Food loss and food waste in Indonesia from 2000 to 2023 amounted to 23-48 million tons/year which equal to 115-184 kg/capita/year making it the highest food loss and waste (FLW) country in the Asia and the Pacific region and the second highest in the world. The FLW contributes to 1,702.9 $MtCO_2ek$ or 7.29 percent to national GHG emissions, causing economic losses with an estimated value of Rp 213-551 trillion/year, equivalent to 4-5 percent of GDP.

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Indonesia is the second largest mega-biodiversity country and has experienced degradation of its natural resources over recent decades. Monoculture as a farming practice, have contributed to the habitat area decrease from 80.30 percent in 2000 to 49.70 percent in 2045. A total of 15,336 species of plants, wildlife, and fungi from Indonesia are recorded in the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, listing a total of 1,274 wildlife, 1,074 plants, and two species of fungi in the category (IBSAP, 2025 - 2045).

Between 1990-2021, Indonesia experienced more than 300 natural disasters – including 200 flooding events affecting more than 11 million people. The frequency of these disasters is increasing – with climate-related disasters accounting for approximately 70 percent of the total (CCDR, The World Bank Group, 2023). These events significantly impact environmental quality and pose serious risks to critical sectors, including agriculture, water resources, public health, and marine and coastal ecosystems. Extended dry seasons and changes in rice plant physiology further exacerbate the risks to food production, particularly for staple crops like rice. Additionally, Indonesia loses around 100,000 hectares of crop lands each year to urban and industrial expansion, further reducing its capacity to meet the high domestic food consumption demand. The need to increase food production has intensified the pressure on Indonesia's climate commitments.

Agri-food sector, including agriculture, forestry and fisheries, plays a significant role in Indonesia's economy, contributing 12.61 percent to the GDP in 2024 and employing 28.64 percent of the workforce. However, the current agricultural practices also contribute to 18 percent of the emission in the AFOLU sector. Deforestation from Land Use, Land Use Change, and Forestry (LULUCF) to agriculture cultivation and plantation puts heavy pressure on the climate. LULUCF as part of the AFOLU sector, is reported as the dominant source of GHG emissions in Indonesia and contributes to more than 60 percent of GHG emissions (2nd BUR, 2018). It is estimated that more than 89.72 percent of agricultural land is degraded (around 48.3 million hectares). There are also significant problems with overfishing, food loss during distribution, water management, and the impacts of trade on the environment.

4.   CLIMATE RESILIENCE AND POLICY INTEGRATION

To mitigate these challenges, Indonesia has progressively integrated climate considerations into its development agenda since becoming a party to the UNFCCC in 1994. The country submitted its first NDC in 2016 following the Paris Agreement, with an enhanced NDC update in 2021. Policies emphasize emission intensity reduction targeting 29 percent unconditionally and up to 41 percent with international support by 2030 compared to the business-as-usual scenario. The framework includes environmental quality management, biodiversity conservation, and the promotion of a green economy, supported by the 2021 Net Zero Emission Roadmap aiming for carbon neutrality by 2060 or sooner.

Building on its participation in the 2021 United Nations Food Systems Summit, the Indonesian Government has also developed a strategic national pathway for food systems transformation based on a series of two national and six sub-national dialogues with participant from government's official at national level and sub-national level, development partner and UN agencies, farmers organizations, civil society organizations, NGOs, private sectors, academicians and associations. Some priorities and potential game changing solutions related to the climate actions have been identified for the food systems transformation, especially aims to protect and restore natural resources. More strategies for adaptation and mitigation of climate change need to be included.

The Government of Indonesia has a bold commitment on food systems transformation, which is reflected on the regulatory framework as foundation of the transformation. The President-elect Prabowo Subianto (2024 – 2029) aims to achieve food self-sufficiency (which is the main agenda of food systems transformation) within four years as stated in the Presidential Decree Number 12/2025 on Medium-Term National Development Plan (RPJMN) 2025 – 2029. For a longer-term vision, Law Number 59/2024 on Long-Term National Development Plan (RPJPN) for 2025-2045, Indonesia is committed to achieving low-carbon development and climate resilience, with emissions reduction as a key target for sustainable development. To achieve the 20-Year Vision: "Indonesia Emas 2045", the country seeks to reduce its reliance on agricultural and mineral exports, which have historically been major income sources, and instead focus on generating revenue from advanced, circular, and sustainable industries.

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5.　KEY CHALLENGES AND DRIVERS

Through the Convergence Initiative workshops, stakeholders identified key drivers at the intersection of food systems and climate actions: (1) Rural and urban poverty, (2) Climate change, (3) Consumption and nutrition patterns (4) Economic growth and macro-outlook and (5) Innovation and science.

These drivers highlight the complex interdependencies between socio-economic development, environmental sustainability, and food systems resilience. Addressing these challenges requires collaborative, multi-sectoral approaches to ensure food systems in Indonesia can support economic growth, enhance nutrition outcomes, and remain resilient to the impacts of climate change.

6.　PILLAR 1: VISION AND OBJECTIVES

"By 2045, Indonesia's food system is climate-resilient, inclusive, circular, and fostering healthy, diverse diets for all while through responsible consumption, driving sustainable economic growth, ending poverty and inequality"

"Pada 2045, sistem pangan di indonesia menjadi berketahanan iklim, inklusif, sirkular, mendorong pola makan yang sehat dan beragam untuk semua melalui konsumsi yang bertanggung jawab, peningkatan ekonomi yang berkelanjutan serta mengakhiri kemiskinan dan ketimpangan."

7.　PILLAR 2: KEY CONVERGENCE INTERVENTIONS

Figure 1. Key convergence interventions areas
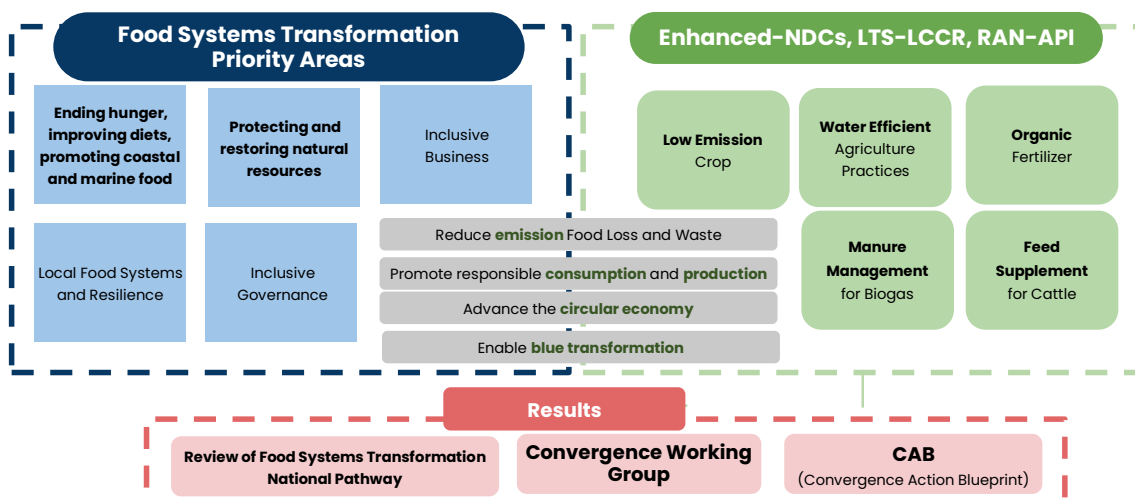
Following the discussions on Pillar 1, which identified key intervention thematic areas to bridge the food systems and climate agendas were presented. Participants discussed key intervention actions to accelerate the transition toward convergence.

Advance the Circular Economy	1. **Promote awareness on sustainable food systems through circular economy** • Integrate sustainable agriculture practices, food and nutrition in school-based curricula, including its impact on climate and nutrition. • Increasing knowledge and capacity development on climate, nutrition, and circular economy concept to the communities. • Promote sustainable and healthy diet include introducing low-emission food choices and sustainable consumption and production. • Promote a zero-waste approach. • Establish a composting program within schools and communities to manage the food waste. 2. **Strengthen the implementation of food traceability laws to promote ethical and environmental standards** • Introduce stringent laws to refuse or ban foods that violate human rights or harm the environment. • Designate roles for Badan Karantina Indonesia/ National Quarantine Affaris and law enforcement to monitor compliance. • Establish a Food Safety Index to track progress. • Promote the system to the community, to help the businesses identify and reduce waste, and reuse materials. 3. **Utilization of Biological Resources and Sustainable Ecosystem Services supports the Bioeconomy through Agroforestry or else.** • Breeding and cultivation of minor local plants. • Application of agrobiodiversity in plant cultivation with circular ecosystems. • Promote the utilization of organic fertilizer from livestock waste to reduce nitrogen emission. 4. **Developing incentive laws for businesses that support the implementation of 10R and contribute to reducing carbon footprints.** 5. **Support the development of food recycle such as "flourization" of local ingredient by-products on an economic scale.** • Development of by-products of local food through downstreaming into simple processing such as fluor. • Use these flours to make nutritious products like cookies to support the School Nutritious Meal Program (MBG).

Reduce Emissions **Food loss and waste**	6. **Establish a multi-stakeholder platform for food, sustainability, and environmental issues.** • Create a collaborative space for sharing best practices and ideas. • Foster a strong narrative and aspirations around sustainable food practices. • Form a dedicated working group to drive ongoing initiatives and solutions. 7. **Strengthen regulatory policies.** • Enhance and enforce policies to ensure policy coherence between reduction of food waste and support SDGs goals. 8. **Promote education on food waste prevention.** • Increase awareness and knowledge on preventing food waste through targeted educational programs. 9. **Implement effective food rescue management systems.** • Develop coordinated approaches to redirect surplus food to those in need, minimizing waste. 10. **Invest in infrastructure and innovation.** • Leverage technology to ensure effective food storage throughout the value chain and support innovative solutions for preventing food waste.
Promote Responsible consumption and production	11. **Promote awareness of sustainable consumption as part of Free Nutritious Meals (Makanan Bergizi Gratis/MBG) programme.** • Integrate education on well-planned, safe, and balanced diet which implement "Isi Piringku" concept and reduce the food waste. • Prioritize local produce to support the shortest supply chains, encouraging "produce local, eat local" to reduce carbon footprint and implement dietary diversity. 12. **Strengthen enforcement of food labels for healthier products.** • Develop laws for "green products" label that contribute to environmental well-being. • Strengthen the implementation "healthier food" logos.

Promote Responsible consumption and production	**13. Promote the implementation of climate-smart agriculture.** • Develop guideline for climate-smart agriculture (CSA) practices – e.g. adoption of low emission, water-saving paddy cultivation system, utilization of livestock waste for biogas and livestock feed improvement, reduction in using synthetic fertilizer, flood/drought/ pest resilience, digitalization to support precision agriculture, etc. • Capacity building all stakeholders and actors including small holders' groups through related government programme ie. P4S, etc. **14. Develop GHG and natural resource management (NRM) data and provide access for farmers.** • Develop the spatial module of the FABLE Calculator to generate land use maps that visualize the implications of different scenarios on food security and climate mitigations at the national and sub-national levels. • Training access, analyze and utilization GHG and NRM data for farmers. **15. Strengthen the development of food production center concept.** • Development of regulation, including government's regulation and technical guidance, manual and standards derived from Law 22/2019. • Integrate the bio/post-harvest fortified, diversified, and local-climate resilience foods in **food production center**
Enable Blue Transformation	**16. Policy intervention integrating fish production, environmental status, and socio-economic factors to ensure policy coherence with the primary goal of climate action.** • Strengthening the GHG Emission Monitoring System integrated with the Food Systems Dashboard. • One data of the integrated Food System Dashboard (production, environmental status, economic status, and GHG emission reduction actions). **17. Development of modern fishing ports and capture fishing fleets in the EEZ (Exclusive Economic Zone).** • Increasing the productivity of integrated, modern and sustainable fisheries. • Utilization of "green" technology for cold storage to maintain high hygienic standards. • Innovation of blue food with various safe preservation methods leveraging local resources to enhance product-added value.

Enable Blue Transformation	18. **Environmental and conservation intervention.** • Protecting marine environments to preserve aquatic biodiversity, ensuring a balance between fish production, ecosystem stability, and reduced GHG emissions through low-carbon activities. • Improving coastal and marine climate resilience. 19. **Aquatic food development: superior aquatic food cluster and village food reserve: fish, shrimp, seaweed.** • Development of village food reserve: fish, shrimp, seaweed. 20. **Continuing downstreaming and industrialization based on natural resources, including maritime resources, to create the widest possible employment opportunities in realizing economic justice.** • To establish a social protection scheme aimed at safeguarding workers in the blue sector, particularly small-scale fishers. • To offer climate insurance for small-scale fishers, protecting them from reliance on middlemen due to the impacts of climate change (such as high waves preventing fishing and rising temperatures leading to reduced fish production).

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8.   PILLAR 3: CONVERGENCE MILESTONES

2024

2030

2040

ADVANCE CIRCULAR ECONOMY

2024
Integrated education on climate and nutrition in schools piloted.

Sustainable agriculture practices, food and nutrition in relation with climate and circular economy promoted.

2030
Food Traceability Laws developed and implemented.

Biological Resources and Sustainable Ecosystem Services supports the Bioeconomy utilized.

Incentive Laws for Businesses that Contribute to Reducing Carbon Footprints developed.

2040
Farmers which implement the sustainable agriculture & circular economy concept increased.

Numbers of businesses which utilize the by products increased.

FOOD LOSS & WASTE

2024
Develop One Food Data, food loss and waste management, and the implementation of the One Health approach.

Initiate coalition and behavioural change strategies.

Formulation food rescue & waste management system.

2030
Implement effective regulations with legal enforcement.

Establish working groups and coalitions.

Insert food loss and waste into education curriculum.

Develop monitoring and surveillance systems.

Reduce food loss and waste by 20 percent in households.

2040
Achieve full implementation of food loss and waste management in households.

Reduce food loss and waste by more than 45 percent from baseline.

SUSTAINABLE CONSUMPTION & PRODUCTION

2024
Develop guideline nutrition education for MBG programme.

Initial assessment for "green products" label.

Some relevant CSA intervention and GHG /NRM data adopted in NAP for Food and Nutrition.

2030
GHG and Natural Resource Management (NRM) Data developed.

Spatial module of the FABLE Calculator developed and trained.

Sustainable consumption promoted.

CSA promoted.

Fortified food integrated in Food Barn.

2040
Indicators for food security and dietary diversity and micronutrient intake increased.

Businesses which support environment increased.

Community more resilience to disasters.

GHG emission contributed from Agriculture reduced.

BLUE TRANSFORMATION

2024
Develop modern and sustainable fishing ports and capture fishing fleets in the EEZ (Exclusive Economic Zone).

Develop food system dashboard through fulfilment of basic services and rural infrastructure.

2030
Peatland restoration and rehabilitation of coastal ecosystems as well as awareness of coastal communities and small islands.

Aquatic Food Development.

Provide incentives for small-holder fishermen to adopt low-carbon practices.

2040
Promote behavioral change among traditional fishermen.

Blue technology (wind energy, solar panels) implemented.

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The establishment of the National Convergence Group is to be integrated into the launch of the National Action Plan of Food, which will align with the climate action agenda.

The immediate milestone is the revision and adoption to the 2021 food systems national pathway with a strong message on nutrition enhancement and alignment with the climate action agenda.

The milestone drafted, besides based on the result of the inception workshop, takes consideration of the RPJMN 2025-2029.

9.   PILLAR 4: MONITORING AND EVALUATION

Key discussions highlighted the complexity of food systems, necessitating data-driven approaches to aid decision-making and address challenges posed by fragmented data. The Indonesian Food System Dashboard (DSPI) encompasses subnational data from 514 districts and employs 84 indicators for monitoring. BAPPENAS is currently collaborating with GAIN on the development of the Sub-National Food System Dashboard.

The Sub-National Food Systems Dashboard is crucial to gather more detailed data in collaboration with sub-districts (kecamatan) authority and handle tradeoffs between indicators whether a threshold could the correlation values and stick with the relevant data. There is a need to extend DSPI to the sub-district level, even though challenges related to data availability at this level need to be addressed.

It is also important to align The Sub-National Food Systems Dashboard with eco-region strategy. There is a need to develop DSPI to align with eco-region strategy, including food assets mapping, ensuring the systems supports localized and context-specific data needed in convergence of localized food systems transformation and climate action.

With the continuing food reserve development, the DSPI can provide data for food availability, accessibility and so on.

The Food Systems Countdown Initiative (FSCI) can be integrated into current DSPI and enhance DSPI capability in monitoring and evaluation. The FSCI is an interdisciplinary, multi-institution scientific partnership to monitor global food systems in service of meeting the SDGs and other global goals.

Furthermore, Indonesia has developed a National Action Plan and Local Action Plans on Food and Nutrition 2021-2024. These plans play a role in coordinating government interventions on food and nutrition development agendas with an established monitoring and evaluation framework. At the moment, Indonesia is developing a new Food and Nutrition Action Plan 2025-2029 that not only covers food and nutrition development agendas but also integrates climate change mitigation and adaptation interventions. These plans with their monitoring and evaluation frameworks with their lists of indicators and interventions, can also be utilised as an option for Convergence Initiative monitoring and evaluation platform.

The Convergence Group shall collaborate with FABLE Consortium and use the FABLE Calculator and AFOLU Dashboard. The Convergence Group, together with Directorate for Food and Agriculture in the Ministry of National Development Planning (BAPPENAS), identifies technically sound and politically feasible policy interventions for agrifood systems transformation. They analyze Indonesia's agrifood systems, assess the modelling capacities, and map and develop engagement.

Box 1

Dashboard Sistem Pangan Indonesia/Indonesia Food Systems Dashboard (DSPI)
https://dspi.bappenas.go.id

DSPI consists of more than 90 indicators related to food systems. The dashboard gathers data from multiple reliable sources and presents the data using a simple and easy to use tools. The main objective of the development of the dashboard is to enable policy makers, researchers, and other stakeholders in food systems to collect and access data from a single platform.

Key highlights

- Visualizing key information related to food systems to assist policymakers in setting priorities and monitoring the implementation of policies or other interventions.
- Displaying data from two levels of administrative regions, namely provinces and districts/cities.
- Utilizing secondary data from government reports and publications from the Statistics Agency, Ministry of Health, and others.
- The data and indicators in the Indonesian Food Systems Dashboard (DSPI) will be continuously updated to provide a more comprehensive and current overview of food systems in Indonesia.

10. KEY AREAS NEEDED IN MONITORING AND EVALUATION

- **Integrate private sector data:** It is essential to incorporate private sector data into DSPI to provide a more comprehensive view of the food system, involving all stakeholders.
- **Identify reliable data sources for lower-level analysis:** Focus should be on identifying reliable data sources for granular analysis, particularly at lower levels, such as districts and sub-districts.
- **Adjust DSPI indicators and variables for future relevance:** As food system dynamics evolve, DSPI indicators and variables should be adjusted to stay relevant for future monitoring and decision-making.
- **Collaborate with ministries and non-ministerial organizations:** Successful data sourcing will require collaboration with various ministries and non-ministerial organizations to ensure comprehensive data collection.
- **Implement the One Data Initiative:** The One Data Initiative should be implemented to streamline data sharing and access, contributing to food self-sufficiency and facilitating integration of data across different sectors. Integrate food systems data into a unified platform, allowing for more cohesive analysis and decision-making to improve the overall food system.

11. CONCLUSION AND NEXT STEPS FOR CAB

This CAB serves as a *living document* to be updated. Further consultations will take place to ensure that further inputs and views are incorporated into the CAB. BAPPENAS will circulate this document amongst divisions to assess the policy availability and gaps.

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1   The Indonesia Emas 2045 Vision (*Golden Indonesia 2045*) is a long-term national development plan launched to coincide with Indonesia's centenary of independence. The vision aims to transform Indonesia into one of the world's top five economies by 2045, with goals of reaching high-income country status, eliminating poverty, improving global leadership and influence, reducing GHG emission towards net zero emission, and achieving per capita income of US$23,199.