

Toward Sustainable Fisheries Food Systems in Indonesia

Azizah Nur Hapsari

Mulia Nurhasan

Eva Anggraini

with contribution from:

Ray Chandra Purnama



REPORT

REPORT

Toward Sustainable Fisheries Food Systems in Indonesia

Azizah Nur Hapsari

Independent consultant

Mulia Nurhasan

Center for International Forestry Research

Eva Anggraini

IPB University

with contribution from:

Ray Chandra Purnama

Independent consultant

Center for Regulation Policy and Governance (CRPG)



Report
© 2024

ISBN:

Hapsari AN, Purnama RC, Anggraini E. 2024. *Toward Sustainable Fisheries Food Systems in Indonesia*. Report. Bogor: Center for Regulation Policy and Governance.

Based on multistakeholders workshop “Aquatic, Marine, and Fisheries Management to Achieve Healthy, Equitable, and Resilient Food System Transformation in Indonesia” organized by the Ministry of National Development Planning/National Development Planning Agency (BAPPENAS) in collaboration with Food and Land Use (FOLU) Coalition, Yayasan Humanis dan Inovasi Sosial (Humanis) and CIFOR-ICRAF, in September 13–14, 2023, at Hotel Novotel Cikini, Jakarta.

Correspondence to: Azizah Nur Hapsari, azizahhapsari172@gmail.com

Illustrations by Perdana Putra

Published by Center for Regulation Policy and Governance (CRPG)
Fakultas Hukum Universitas Ibn Khaldun Bogor
Jl. KH Sholeh Iskandar Km. 2
Bogor 16162
Phone: +62 251 8316 452
Email: contact@crpg.info

crpg.info



Content in this publication is licensed under a Creative Commons Attribution 4.0 International (CC BY 4.0), <http://creativecommons.org/licenses/by/4.0>

Contents

Executive Summary	v
1 Background	1
1.1 From Food Security to Sustainable Food Systems	2
1.2 The Emerging Sustainable Food System Approach	3
1.3 Fisheries in Food System Narrative	7
2 Context Setting	8
2.1 Aquatic Food System in Indonesia	9
2.2 Rationale for Fisheries Food System Approach in Indonesia Context	11
3 Goals and Approaches	13
3.1 Objectives of the Fisheries Food System Report	14
3.2 Approach	14
4 Participant Analysis	17
4.1 Participant Composition	18
4.2 Participants' Dynamic	19
5 Current Realities and Common Goal of the Fisheries Food System In Indonesia	20
5.1 Issues Highlighted by Each Participants Group	21
5.2 Conclusion of Fisheries Food System Current Realities	25
5.3 Common Goal of Fisheries Food Systems in Indonesia	25
6 Mapping the Fisheries Food System Issues into Sustainable Food System Framework	27
7 Fisheries Food System in Indonesia's Strategic Documents and Stakeholder Inputs	32
7.1 Assessing National Strategic Documents against Six Food Security Dimensions in Fisheries	33
7.2 Aligning Fisheries Stakeholders Input with RPJPN 2025–2045 Strategies	36
8 Recommendations	41
8.1 Recommendations to Advance the Fisheries Food System Agenda (For Government)	42
8.2 Recommendations for Improving Workshop Methodology (For Organisers)	44
Annexes	46
A List of Participants	46
B Key Issues of ToC	48
C Theory of Change (ToC) of Each Group	50

List of Figures

1	Conceptual framework of food systems for diets and nutrition	4
2	Conceptual framework of sustainable food systems based on six dimensions of food security	5
3	Volume of fisheries production in Indonesia (ton)	9
4	Value of fisheries production in Indonesia (million IDR)	10
5	The framework of the report	15
6a	Rich pictures of small-scale fishery group	21
6b	Rich pictures of large-scale fishery group	22
6c	Rich pictures of aquaculture group	23
6d	Rich pictures of inland fishery group	24
7	Word cloud of keywords from stakeholder input at Fisheries Food System Workshops	28
8	Key issues from stakeholder input at Fisheries Food System Workshops	29
9	Analysis of drivers of sustainable food systems based on issues raised by stakeholders	30
10	Analysis of constituent elements in SFS Framework based on issues raised by stakeholders	30
11	Analysis of Fisheries Food System key issues raised by FGD participants	31



Executive Summary

This report synthesizes and expands insights from the “Aquatic, Marine, and Fisheries Management to Achieve Healthy, Equitable, and Resilient Food System Transformation in Indonesia” workshop, held on September 13–14, 2023. Organized by BAPPENAS in collaboration with various stakeholders, the workshop aimed to address the transition from traditional food security approaches to sustainable food systems, emphasizing the role of fisheries.

The report highlights the representation from various sectors, including business associations, startups, government agencies, and NGOs, primarily involved in fisheries. However, it points out the limited engagement from government entities, particularly due to the nature of interconnectedness in food systems, there are many divisions in different agencies need to be involved. During the workshop, challenges in forming balanced groups was identified, mainly due to the limited availability of experts in certain sectors, especially the aquaculture and inland capture fisheries. The dynamics observed during group activities indicates the imbalance perspectives in the stakeholder dynamics interactions influenced the workshop’s outcomes.

The stakeholders identified the multifaceted challenges faced by Indonesia’s fisheries food systems across various sub-sectors including ecological sustainability, illegal fishing, the rights of women fishers, logistical challenges, supply chain management, reliance on imported feed in aquaculture, pollution, climate change impacts, and sustainable tourisms. The challenges in fisheries food systems call for a holistic, integrated approach that considers ecological, economic, and social factors, demanding effective governance, inclusive policies, and robust multi-stakeholder collaboration to ensure the sustainability and resilience of Indonesia’s fisheries food systems. Stakeholders collectively identified a sustainable, inclusive fisheries food system as a common goal: A sustainable fisheries food system that is inclusive and ensures social justice, economic prosperity, food and nutrition security, as well as environmental sustainability for the well-being of the community.

The report reviewed Indonesia’s strategic documents, with an objective to assess their alignment with the sustainable fisheries food systems. The chapter examines several key documents, each contributing differently to the fisheries sector:

- **RPJMN 2020–2024:** This national development plan primarily focuses on supply chain and conservation in the fisheries sector. It lacks a holistic approach to aquatic food systems, particularly in addressing the broader aspects of food security such as agency, sustainability, and the integration of nutritional and socio-cultural dimensions within fisheries.
- **Indonesia Blue Economy Roadmap:** While pivotal for national development planning, the roadmap’s approach to fishery food system is limited, only outcome 3 addressing food security, including the growth of women in fisheries, higher monthly income for fishers and fish farmers, reduced poverty rates in coastal areas, and increased fish consumption.

- **National Blue Agenda Action Partnership (NBAAP):** Introduced in 2022, the NBAAP highlights the role of women in the blue food supply chain and outlines key priorities aligning with various dimensions of food security, though it lacks a strong focus on the agency dimension. It does not adequately address the complex dynamics of fisheries food systems, and primarily concentrates on availability, with a notable lack of emphasis on empowering local communities and fishers through the agency dimension, which is essential for inclusive and sustainable fisheries management.
- **Draft National Long-Term Development Plan (RPJPN) 2025–2045:** This draft plan proposes integrating aquatic resources into the food system but falls short in detailing specific strategies for the fisheries sector. It lacks clear policies that address the unique challenges of fisheries, such as equitable resource management, sustainability, and the sector's contribution to nutrition.

There is a need for a more integrated and comprehensive approach that fully embraces all dimensions of food security and sustainability in the fisheries sector.

The report recommends to:

1. Integration of Fisheries Food System in Strategic Planning

Ensure the effective integration of the fisheries food system narrative within Indonesia's broader strategic plans, especially the RPJPN 2025–2045. The framework could reference HLPE Report 15 (2020) to incorporate elements of agency and sustainability into the narrative. This approach is essential for coherently and effectively addressing the diverse challenges within the fisheries sector.

2. Mapping and Coordination of Government Institutions

Emphasize the mapping of government institutions with mandates in fisheries food systems and establish a coordination channel among them. Additionally, map all national strategic documents related to fishery food systems to guide the national strategy for fisheries food systems development in Indonesia.

3. Comprehensive Stakeholder Mapping and Engagement

Conduct a thorough mapping of all stakeholders in fishery food systems to establish clear coordination mechanisms among governmental agencies and delineate responsibilities. This will foster synergy and prevent duplication of efforts. Furthermore, expand stakeholder involvement in formulating strategic plans like the RPJMN 2025–2029 and RENSTRA, ensuring diverse representation for more inclusive decision-making.

4. Bridging Knowledge Gaps in Food and Nutrition Security among Fisheries Stakeholders

The report suggests launching programs to enhance understanding and engagement in food and nutrition security among fisheries stakeholders. These initiatives should underscore the vital role of the fisheries sector in contributing to sustainable food systems and public health. They should also identify potential gaps where the sector's contribution may fall short in effectively improving food security and nutrition, and develop strategies to address these areas.



Background

1.1 From Food Security to Sustainable Food Systems

Food security has become a global concern in the last few decades. It has become one of the most important goals of Millenium Development Goals (MDGs) and is gaining more importance at the Sustainable Development Goals (SDGs), namely, to achieve zero hunger (SDG 2). The World Food Summit in 1996 defined food security as a condition where all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Food security has widely acknowledged four dimensions, namely; physical availability of food, economic and physical access to food, food utilization, and stability of the three dimensions over time. The availability of food primarily deals with the supply side of food security, determined by factors such as the level of food production, stock levels, and net trade. The accessibility dimension acknowledges that an adequate supply of food at the national or international level does not automatically translate into food security at the household level. Utilization in the context of food security refers to the body's effectiveness in using the nutrients found in food. This dimension recognizes the crucial role of nutrition and other factors such as food safety and water hygiene that support nutrient utilization in the human body.¹

The world has made significant progress in combating hunger and malnutrition, but there are still about 811 million who suffer from hunger and 3 billion lacks resources to access nutritious food.² The global community is becoming more aware that food security and nutrition issues cannot be solved solely by focusing on food and nutrition issues. The interlinkages of the agricultural and fisheries system with welfare of the farmers and fishers, the interconnectedness between actors and the power dynamic are also influencing the state of food security and nutrition as the outcome of the food system. This has elevated an urgent call to transform the food system into more efficient, inclusive, resilient and sustainable to ensure food security, improve nutrition and secure an affordable healthy diet for feeding the growing world population.

The concept of food security does not particularly focus on the dynamic and interrelatedness of the actors, the interconnectedness between food, nutrition and environment, or the holistic view of factors behind the food security dimensions. As a critical goal, food security requires a systemic approach to provide a more comprehensive framework for achieving this goal. This underlies the development of the food system narrative in addressing limitations of many traditional approaches to improving food security and nutrition that predominantly focus on food production and supply.³

1 1FAO. 2008. *Food security information for action: Practical guideline*. Accessed December 23,2023. al936e.pdf (fao.org)

2 FAO. 2022. *The State of World Fisheries and Aquaculture 2022: Towards Blue Transformation*. Rome, FAO. <https://doi.org/10.4060/cc0461en>

3 FAO. *Sustainable Food Systems: Concept and framework*. 201. Accessed October 26, 2023. <https://www.fao.org/3/ca2079en/CA2079EN.pdf>

1.2 The Emerging Sustainable Food System Approach

The food system is a complex network encompassing a range of activities and actors involving production, processing, transport, consumption and disposal originating from agriculture, forestry and fishery which is embedded in a broader system of economic, societal and natural environments.^{4,5} Food systems share common ground with agricultural systems in the realm of food production but extend beyond to encompass a wide array of institutions, technologies, and practices that oversee food marketing, processing, transportation, access, and consumption. They not only influence what and how food is consumed and produced but also determine who has access to food and its nutritional value.⁶

Actors in the food system are driven by diverse motivations, ranging from increasing wealth, securing livelihoods, satisfying food demand, to preserving ancestral cultures. Figure 1 frames the complexity of the food system drivers into six, namely: biophysical and environmental, innovation technology and infrastructure, political and economic, socio-cultural, and demographic drivers. These drivers influence the food supply chain, food environments, and consumer behaviour, which eventually influences people's diets, and nutritional status, as well as having social, economic and environmental impact.

The High-Level Panel of Experts on Food Security and Nutrition - HLPE (2014) defines a sustainable food system as a food system that ensures food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition of future generations are not compromised. As such a sustainable food system is referring to the three dimensions of sustainability: economic, social and environment. FAO defines sustainable food system as follow:⁷

- **On the economic dimension**, a food system is considered sustainable if the activities conducted by each food system actor or support service provider are commercially or fiscally viable. The activities should generate benefits, or economic value-added, for all categories of stakeholders: wages for workers, taxes for governments, profits for enterprises, and food supply improvements for consumers.
- **On the social dimension**, a food system is considered sustainable when there is equity in the distribution of the economic value-added, taking into account vulnerable groups categorized by gender, age, race and so on. Of fundamental importance, food system activities need to contribute to the advancement of important socio-cultural outcomes, such as nutrition and health, traditions, labour conditions, and animal welfare.
- **On the environmental dimension**, sustainability is determined by ensuring that the impacts of food system activities on the surrounding natural environment are neutral or positive, taking into consideration biodiversity, water, soil, animal and plant health, the carbon footprint, the water footprint, food loss and waste, and toxicity.

4 FAO. *Sustainable Food Systems: Concept and framework*.

5 University of Oxford. *What is the food system?* Accessed October 26, 2023. <https://www.futureoffood.ox.ac.uk/what-food-system>

6 Capone R, El Bilali H, Debs P, Cardone G and Driouech N. 2014. Food system sustainability and food security: Connecting the dots. *Journal of Food Security* 2(1):13–22

7 FAO. *Sustainable Food Systems: Concept and framework*.

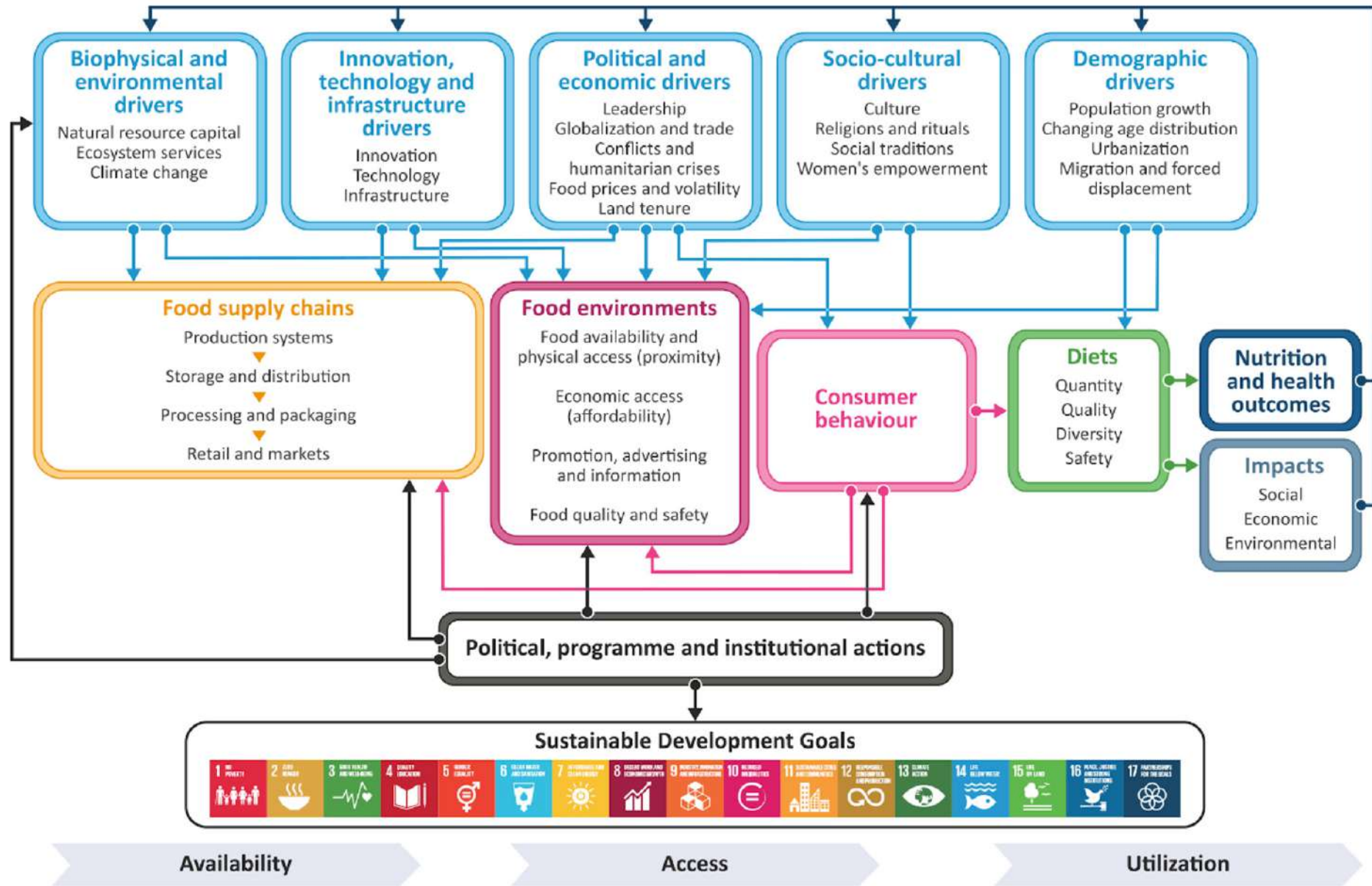


Figure 1. Conceptual framework of food systems for diets and nutrition

Source: FAO, HLPE-FSN. 2017. *HLPE Report # 12 - Nutrition and food systems*. Accessed October 26, 2023. <https://www.fao.org/3/i7846e/i7846e.pdf>

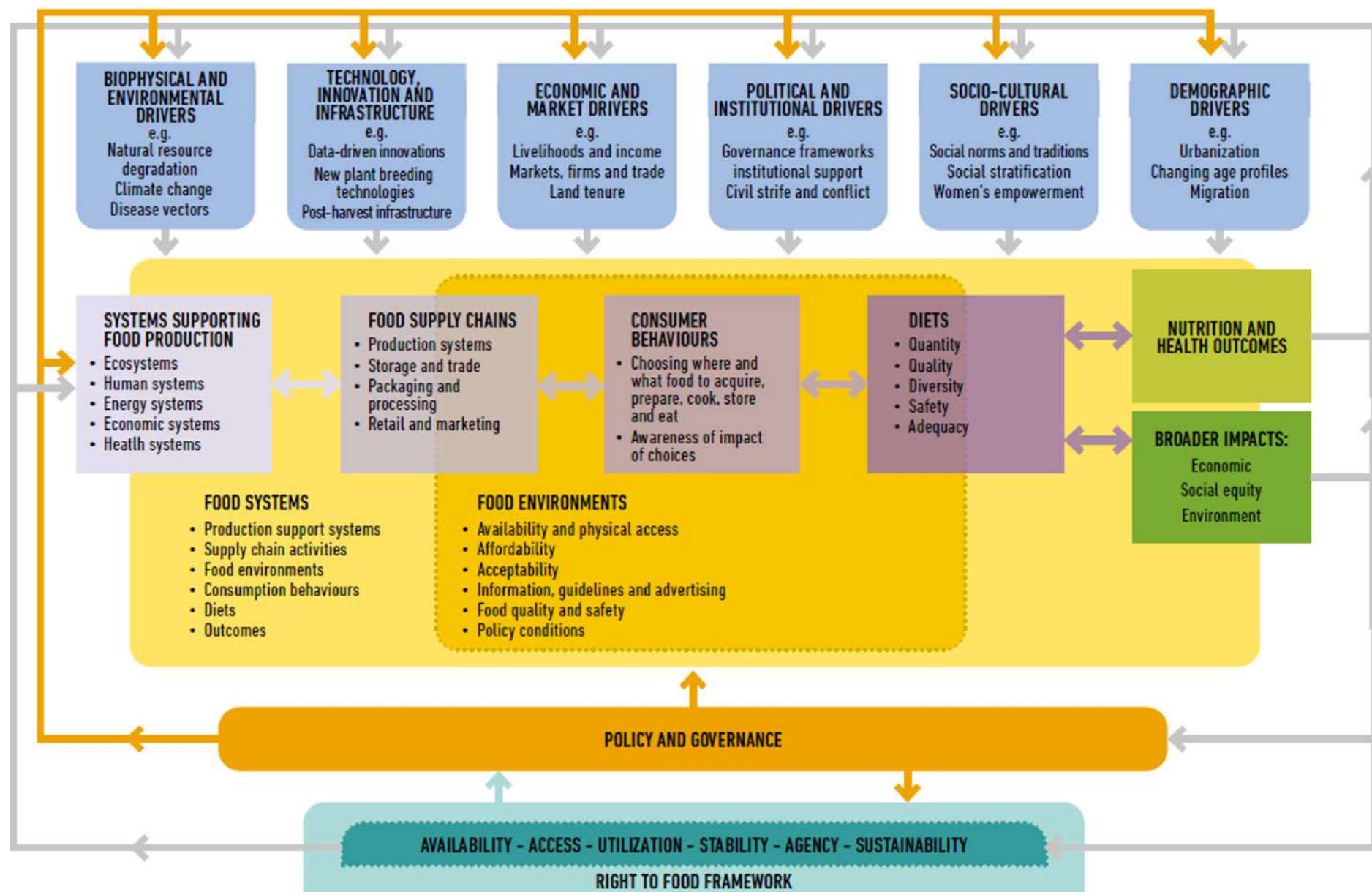


Figure 2. Conceptual framework of sustainable food systems based on six dimensions of food security

Source: HLPE. 2020. *Food security and nutrition: Building a global narrative towards 2030*. A report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

To address the need for strengthening and consolidating conceptual thinking around food security and nutrition to adopt a food systems analytical and policy framework, HLPE 15 in 2020 published their recommendation to include two additional dimensions of food security, namely agency and sustainability. Agency refers to the capacity of individuals or groups to make their own decisions about what foods they eat and produce, how that food is produced, processed and distributed within food systems, and their ability to engage in processes that shape food system policies and governance. Sustainability refers to the long-term ability of food systems to provide food security and nutrition in a way that does not compromise the economic, social and environmental bases that generate food security and nutrition for future generations.⁸ HLPE 15 also includes markets and institutions as drivers for a sustainable food system shaped by policy and governance. These changes allow for a food security and nutrition policy approach that is grounded in a sustainable food system framework.

The HLPE 15 (2020) also recommends four policy shifts to transition towards a sustainable food system:

1. **From solely increasing agricultural production to comprehensive food system transformation:** Moving beyond just boosting agricultural output in response to population growth, to a broader strategy aimed at radically transforming the entire food system. This shift focuses on enhancing Food Security and Nutrition (FSN) as part of the broader goals of Agenda 2030.
2. **From treating food security and nutrition as an isolated issue to recognizing its systemic nature:** Changing the perspective from seeing food security and nutrition as a standalone sectoral issue to understanding it as an integral part of a network that is interconnected with various other systems and sectors, highlighting the complexity of factors influencing food security and nutrition.
3. **From narrow focus on hunger to addressing all forms of malnutrition:** Expanding the scope from just targeting hunger and undernutrition to a more inclusive focus on all types of malnutrition, acknowledging the intricate and interrelated nature of these issues.
4. **From seeking universal food security and nutrition solutions to valuing context-specific strategies:** Shifting from the pursuit of one-size-fits-all solutions for FSN to recognizing the need for diverse, context-specific approaches, tailored to meet the unique challenges and needs of different environments.

These shifts underscore a more holistic, interconnected, and nuanced approach to addressing food security and nutrition, emphasizing systemic changes, cross-sectoral collaboration, a comprehensive view of malnutrition, and strategies that are sensitive to specific local contexts.

⁸ HLPE. 2020. *Food security and nutrition: Building a global narrative towards 2030*. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

1.3 Fisheries in Food System Narrative

Discussion and debate surrounding food system transformation predominantly focuses on agriculture and livestock, whereas aquatic foods are often neglected. The adoption of a food system framework in fisheries and aquatic food issues is also new. Aquatic foods - defined as fish, invertebrates, algae and aquatic plants captured or cultured in marine and inland ecosystems sometimes referred to as fish in a broader sense.^{9,10} Aquatic foods provide rich micronutrients, essential fatty acids and animal protein which play vital roles in supporting children growth and population health. Consumption of aquatic foods have been found to be associated with lower stunting rate, reduced non communicable disease, and lower environmental footprint.^{10,11}

Global aquatic food production has increased significantly in recent years with total production reaching a record 214 million tons in 2020.¹² The industry is often acknowledged to support millions of lives and livelihoods, however, far less in its role supporting food security of the local people. Aquatic foods are consumed by people from diverse and dynamic income groups, regions and countries.¹³ Aquatic foods can play significant roles in achieving Sustainable Development Goals (SDGs), especially the goals of eliminating hunger and improving health (SDGs 2 and 3); increasing sustainability of water, climate, oceans, and land (SDGs 6, 13, 14, and 15), and achieving gender equality, improving livelihoods, reducing inequalities, enhancing institutions (SDGs 5,8, 10 and 16).

Blue Food Assessment (BFA),¹⁴ an international joint initiative initiated in 2019, brings together over 100 scientists from more than 25 institutions. The initiative aimed to bridge critical knowledge gaps concerning the role of blue foods in global food systems and to drive changes in policies and practices shaping future food systems. BFA recommended five policies below for the government to take into account when incorporating aquatic food into the food system.

1. Manage blue foods as integral part of food system
2. Identify and reform policies and practices that impede transformation
3. Protect and harness diversity of nutrition, accessibility and environmental sustainability
4. Recognize and support the central role of small-scale actors
5. Commits to human rights in policy and practices

In food security global governance, FAO Committee on Fisheries (COFI) 2021 has endorsed aquatic food systems for its contribution in fighting poverty, hunger, and malnutrition.¹⁵ Thus, FAO as the authoritative UN agency in food and agriculture, including fisheries, is committed to blue transformation. To ensure aquatic food systems could make a significant contribution to the global food system, governments need to incorporate them in their food related decision making.¹⁶

9 Tichelaar, et al. 2022. The vital roles of blue food in global food system. *Global Food Security*, Volume 33, June 2022, 100637. <https://doi.org/10.1016/j.gfs.2022.100637>

10 G20-task force 4 food security and sustainable agriculture.

11 Bennett A, Basurto X, Virdin J et al. 2021. Recognize fish as food in policy discourse and development funding. *Ambio* 50, 981–989. <https://doi.org/10.1007/s13280-020-01451-4>

12 FAO. 2022. *The State of World Fisheries and Aquaculture 2022*. Towards Blue Transformation.

13 Blue Food Earth. 2021. *Blue Food Assessment: Building for blue food futures for the people and planet*. September 2021. Accessed October 10, 2023. [The-Report-of-the-Blue-Food-Assessment-Digital.pdf](https://bluefood.wpenginepowered.com/The-Report-of-the-Blue-Food-Assessment-Digital.pdf) (bluefood.wpenginepowered.com)

14 Blue Food Earth. *Blue Food Assessment: Building for blue food futures for the people and planet*.

15 FAO. 2021. *2021 COFI Declaration for Sustainable Fisheries and Aquaculture*. Rome. <https://doi.org/10.4060/cb3767en>

16 Tichelaar, et al. *The vital roles of blue food in global food system*.



Context Setting

2.1 Aquatic Food System in Indonesia

Indonesia, the world's largest archipelago, is located between the Pacific and Indian Oceans. It boasts more than 17 thousand islands, covering a land area of almost 2-million-kilometer square. The nation's extensive coastline stretches over 95 thousand kilometers, and its exclusive economic zone encompasses almost 3 million kilometers squares.¹⁷ The Indonesian fisheries sector, which includes marine and inland capture fisheries as well as aquaculture, is a cornerstone of the national economy and a key contributor to food security. In 2021, fisheries accounted for 2.77% of the country's gross domestic product, with a per capita fish consumption of 35.26 kg.¹⁸

The Ministry of Marine Affairs and Fisheries (MMAF) oversees the sector's growth, ensuring sustainable exploitation, protection, and conservation of marine resources. Volume of fisheries production tends to be stable from 2017 to 2022, at around 22–23 million tonnes per year (Figure 2). Value of the fisheries production fluctuates with a tendency to increase from IDR 385 trillion in 2017 to IDR 420 trillion in 2022 (Figure 3).

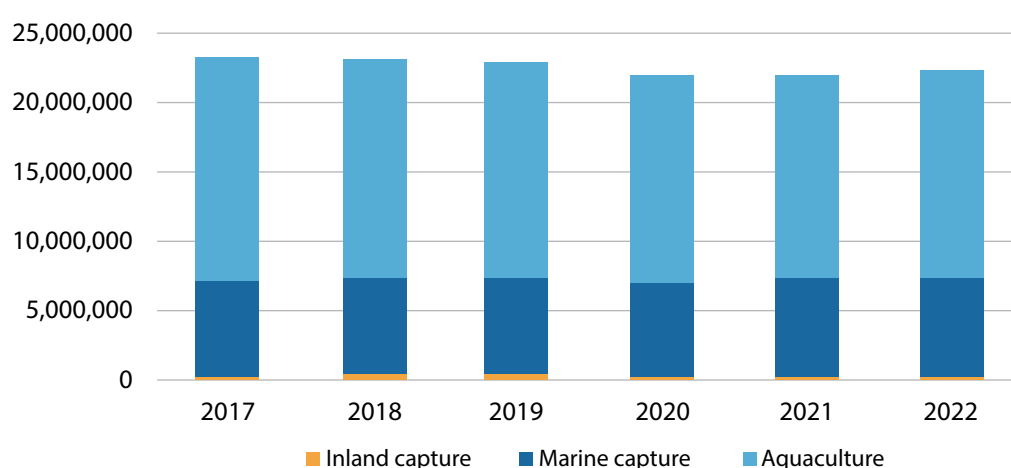


Figure 3. Volume of fisheries production in Indonesia (ton)

Source: Kementerian Kelautan dan Perikanan. Statistik KKP. Accessed December 23, 2023. Statistik KKP

In Indonesia, fish and other aquatic animals (OAA) are not just culturally cherished but also a popular choice for side dishes. There has been a notable increase in fish consumption in the country, rising from 47.34 kg per capita annually in 2017 to 57.27 kg per capita in 2022,¹⁹ contributing to at least half of animal protein intake in Indonesian households.²⁰ Fish and OAA are rich in protein and micronutrients, playing a crucial role in combating stunting, a form of chronic malnutrition characterized by low height for age in children, typically under two or five years old.

17 SEAFDEC. *Fisheries country profile: Indonesia*. Accessed December 23, 2023. Fisheries Country Profile: Indonesia – SEAFDEC

18 SEAFDEC. *Fisheries country profile: Indonesia*. Accessed December 23, 2023. Fisheries Country Profile: Indonesia – SEAFDEC

19 Kementerian Kelautan dan Perikanan. Statistik KKP. Accessed December 23, 2023. Statistik KKP

20 Badan Pusat Statistik. *Konsumsi Kalori dan Protein Penduduk Indonesia dan Provinsi*. September 2022. Accessed January 14, 2024. Statistics Indonesia

Stunting, often linked to poverty, poor maternal health and nutrition, frequent illness, and inadequate early life care and feeding, limits children's physical and cognitive development.²¹

The Indonesian government, recognizing the importance of fish in nutrition, has integrated it into various programs aimed at providing nutritious and affordable animal protein. These efforts include the "Gemarikan" campaign, an abbreviation of "Gemar Makan Ikan" (Love to Eat Fish), initiated by the MMAF. Launched under President Megawati Soekarnoputri's leadership in 2004, this campaign, in collaboration with the Ministry of Health and community groups, seeks to enhance local fish consumption, offering both nutritional and economic advantages.²²

Realizing the importance of fisheries resources to the country, Indonesian government responded to the 2021 COFI Declaration for Sustainable Fisheries and Aquaculture with a clear statement; *"It is vital for all of us to translate our commitment into concrete actions that could bring real impacts toward the coastal communities and ensure a sustainable future of our ocean. Therefore, Indonesia takes note with appreciation of the adoption of the 2021 COFI Declaration for Sustainable Fisheries and Aquaculture in achieving the 2030 Agenda for Sustainable Development, in particular SDG 1,2,3 and 14".*²³ The Indonesian government then took the commitment into concrete action in 2022 by signing the National Blue Agenda Action Partnership (NBAAP) focusing on four pillars; blue health, blue food, blue innovation and blue finance. Under this partnership, eight UN agencies; FAO, ILO, UNDP, UNEP, UNESCO, UN Women, UNIDO, UNOPS and several international development partners will support the Indonesian government.²⁴

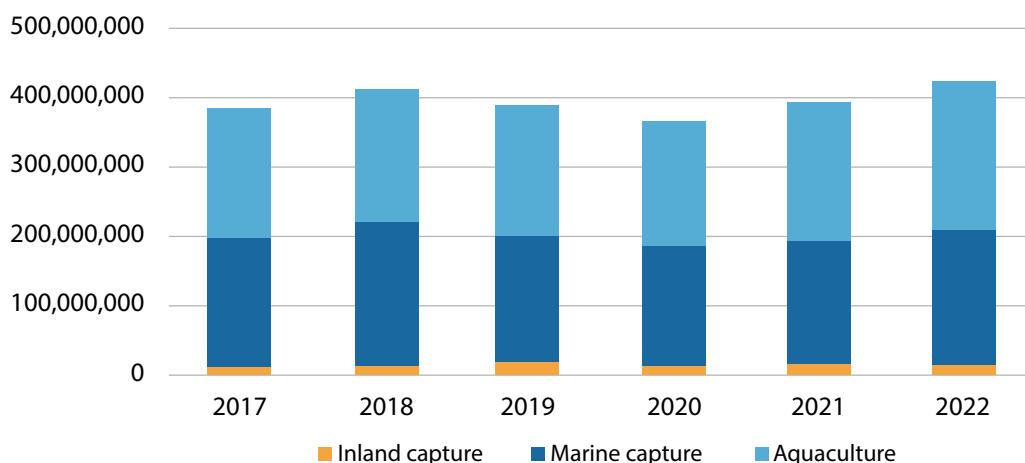


Figure 4. Value of fisheries production in Indonesia (million IDR)

Source: Kementerian Kelautan dan Perikanan. Statistik KKP. Accessed December 23, 2023. Statistik KKP

21 World Health Organization. *Malnutrition*. Accessed December 23, 2023. Malnutrition (who.int)

22 Gemar Ikan. Accessed December 23, 2023. Kontak - Gemarikan | Kementerian Kelautan dan Perikanan (gemarikanofficial.id)

23 FAO. 2021. *Remarks of the Head of Delegates of the Republic of Indonesia for the 34th Session of the Committee on Fisheries*. February, 2021. Accessed October 10, 2023. https://www.fao.org/fileadmin/user_upload/COFI/COFI34/nonwcp/AgendaItem4-Indonesia.pdf

24 Indonesia UN. *UN, Government of Indonesia launch National Blue Agenda Actions Partnership for sustainable ocean development*. Press Release, November 2022. <https://indonesia.un.org/en/207284-un-government-indonesia-launch-national-blue-agenda-actions-partnership-sustainable-ocean>

The year 2024–2025 is the final year of the implementation from both the National Medium-Term Development Plan (RPJMN) 2020–2024 and the National Long-Term Development Plan (RPJPN) 2005–2025. This makes the period pivotal in influencing achievement of the development goals.²⁵ In this last stage of RPJMN, the government has already aligned development agendas with 17 SDGs and is steadfast in its commitment to recognize sustainability as a cornerstone upon future development.²⁶ In the RPJPN 2025–2045, Indonesia has set a vision of Indonesia Gold 2045, materializing Indonesia as Sovereign, Advanced and Sustainable Archipelago country.²⁷

The vision will be supported by eight development agendas: 1) implementing social transformation, 2) implementing economic transformation, 3) implementing governance transformation, 4) strengthening supremacy of law, stability and strong diplomacy, 5) strengthening social cultural and ecological resilience, 6) realizing equitable and quality regional development, 7) creating quality and environmentally friendly facilities and infrastructure, 8) implementing sustainable development. As aforementioned, aquatic food systems play a significant role in achieving SDGs (2, 3, 5, 6, 8, 10, 13, 14, 15, 16), this aligned with the 8th agenda of Indonesia Gold 2045. Therefore, it is crucial to grasp how fisheries stakeholders currently apply food system perspectives in their fisheries work and integrate this understanding into their agendas.

2.2 Rationale for Fisheries Food System Approach in Indonesia Context

Why is a food system approach necessary? Fisheries are integral to Indonesia's economy and culture, providing essential nutrition and livelihoods to millions of people. As a major fish producer with an extensive coastline, Indonesia relies on fish as a staple in its traditional diet. Fish, being rich in proteins, amino acids, minerals, and vitamins, play a vital role in the Indonesian diet, contributing significantly to health and development.

However, Indonesia faces substantial malnutrition challenges, particularly among children in some regions. Malnutrition takes various forms, such as wasting (low weight for height), stunting (low height for age), micronutrient deficiencies (a lack of essential vitamins and minerals), and being overweight or obese. These issues are especially severe in infants and young children, affecting their growth, development, and long-term health. Wasting and stunting indicate acute and chronic malnutrition, respectively, signifying prolonged nutritional inadequacy. Micronutrient deficiencies, often termed 'hidden hunger', can cause serious health issues despite sufficient calorie intake. Overweight and obesity arise from an imbalance in calorie consumption and energy expenditure. These forms of malnutrition impact not only individual health but also public health, economic productivity, and national development. Tackling these nutritional challenges is imperative for Indonesia's future, necessitating comprehensive strategies that include food availability, access, and education on healthy eating. In fact, reducing stunting among children under five years old is one of the Indonesian government's priority programs, showing seriousness in tackling the chronic malnutrition problem.

25 Rancangan Teknokratik, Rencana Pembangunan Jangka Menengah Nasional, prepared by Kementerian PPN/Bappenas (Jakarta, 2019). https://perpustakaan.bappenas.go.id/e-library/file_upload/koleksi/migrasi-data-publikasi/file/RP_RKP/Narasi%20RPJMN%20IV%202020-2024_Revisi%2014%20Agustus%202019.pdf

26 Rancangan Teknokratik, Rencana Pembangunan Jangka Menengah Nasional.

27 Sekretariat RPJPN 2025–2045. *Indonesia emas 2045: Rancangan akhir RPJPN 2025–2045*. <https://indonesia2045.go.id/>

As shown in Figure 1, the food system approach covers various elements, actors, and the interactions and interconnectedness between elements of the food systems. Such an approach will allow us to solve a problem that hinders the fisheries sector from delivering its full potential for the nutrition and health of the local people, nationally and globally. Other current approaches in fisheries, such as conservation science and practice, focus solely on natural resources and ecosystem services, overlooking other aspects. Fisheries science concentrates on natural resources, ecosystems, and production systems, including how ecosystem services translate into catches and income from fisheries. Fisheries development introduces innovation, technology, and infrastructure elements but still primarily considers the supply chain and market distribution, often neglecting the connection to nutrition outcomes. The goal is to achieve nutrition and health outcomes, particularly for the most malnourished and food insecure. This is precisely what the food system approach emphasizes: the focus on nutritional and health outcomes.

A review of common approaches in fishery development reveals a focus on the supply chain without adequately addressing food and nutrition outcomes. An analysis of 88 articles discussing food systems in fisheries found that 74 percent primarily discussed production or supply chain, with only 26 percent extending to nutrition and health outcomes. Merely 13 percent of these studies delve into human nutrition, with a noticeable bias towards high-income countries.²⁸ This highlights the need for an approach in fisheries that targets nutrition and health outcomes more effectively, especially in low and middle-income countries where such outcomes are critically needed.

In conclusion, the necessity of a food system approach in Indonesia is underscored by the critical role fisheries play in the nation's economy, culture, and nutrition. While fisheries provide essential sustenance and livelihoods, the persistent challenges of malnutrition, particularly among children, call for a more holistic strategy. The food system approach, encompassing a wide array of elements, actors, and their interconnectedness, offers a comprehensive framework to address these challenges. It goes beyond traditional fisheries management, focusing on the entire supply chain and its impact on nutrition and health outcomes. This approach is crucial for delivering the full potential of Indonesia's fisheries sector, not just in terms of production but also in improving the nutrition and health of its people, especially in low and middle-income regions. By integrating various aspects of the food system, from resource management to consumption, Indonesia can more effectively combat malnutrition and pave the way for a healthier, more sustainable future.

28 Simmance FA, Cohen PJ, Huchery C, Sutcliffe S, Suri SK, Tezzo X, Shakuntala HT et al. 2022. Nudging fisheries and aquaculture research towards food systems. *Fish and Fisheries* 23(1): 34–53.



Goals and Approaches

3.1 Objectives of the Fisheries Food System Report

The report serves as a follow-up to the Fisheries Food System Workshop, held on September 13–14, 2023. The workshop was organized by the Ministry of National Development Planning/ National Development Planning Agency (BAPPENAS) in collaboration with Food and Land Use (FOLU) Coalition hosted by WRI Indonesia, Yayasan Humanis dan Inovasi Sosial ('Humanis', an affiliate organization of HIVOS) through its FOCUS project, and CIFOR-ICRAF. A detailed report on the organization of the workshop has been presented elsewhere.²⁹

The purpose of this report is to showcase the contributions from these stakeholders towards developing the fisheries food system in Indonesia. It seeks to integrate these insights into a broader understanding of Indonesia's fisheries food system, highlighting potential areas for development and improvement. It also explores the appropriate regulatory tools that can be utilized to ensure these stakeholder contributions are effectively incorporated into future government policies. This aligns with the Indonesian government's commitment to inclusive and participatory policy-making, emphasizing the importance of stakeholder engagement in the development of comprehensive and sustainable fisheries policies.

The specific objectives of this report are:

1. To document and analyze the inputs from stakeholders, providing a clear overview of their perspectives and suggestions.
2. To identify and discuss regulatory mechanisms that can facilitate the integration of these inputs into national fisheries policies.
3. To propose actionable strategies for the sustainable development of the fisheries food system in Indonesia, informed by the workshop's findings.

3.2 Approach

The information used in this report is primarily extracted from activities and substantial matters presented and discussed at the Fisheries Food System Workshop, held on September 13–14, 2023. The workshop was structured in two phases: the first day focused on training stakeholders in the principles of food system thinking, and the second day was dedicated to collecting their inputs. Briefly, the workshop participants were carefully selected based on their roles in the fisheries sector, representing both state and non-state actors, including governments, fishing unions, non-governmental organizations, and industries. The stakeholders were divided into four thematic groups:

- Small-scale capture marine fisheries,
- Large-scale capture marine fisheries,
- Aquaculture fisheries, and
- Inland capture fisheries.

²⁹ Hapsari A, Purnama RC, Nurhasan M. 2023. *Aquatic food system workshop: Workshop on aquatic, marine and fisheries management to achieve healthy, equitable, and resilient food system transformation in Indonesia*.

To meet the workshop's objectives within the available time, several tools were employed:

- An introductory session for stakeholders to familiarize themselves with each other, fostering a comfortable environment for sharing opinions and experiences.
- Keynote speeches by experts, including Dr. John Ingram, Food System Programme Leader at the Environmental Change Institute, University of Oxford, on general knowledge of food systems, and Dr. Pip Cohen, an environmental social scientist with extensive experience in food-fisheries systems, on the rationale for applying food system perspectives in the fisheries sector.
- A 'rich pictures' session, where stakeholders were divided into groups of 5–12 members. Each group was tasked with illustrating the current reality of fisheries food systems and setting a goal for the sector they represented.
- A session on simplified theory of change (ToC), where stakeholders discussed and agreed upon a common goal for fisheries food systems based on the group goals. They also developed strategies to transition from the current state of fisheries food systems to the envisioned common goal in Indonesia.

Additionally, recordings of the sessions, notes, drawings from the 'rich pictures' session, and the presented theories of change were analyzed to formulate the following:

1. Participant analysis based on list of attendees, and observation during workshop.
2. An overview of the current realities of fisheries food systems from the stakeholders' perspectives.
3. An analysis of stakeholders' input on transitioning to sustainable fisheries food systems, using the food system framework to identify areas needing improvement.

A review of three documents, namely the National Medium-term Development Plan (RPJMN) 2020–2024, the National Long-term Development Plan (RPJPN) 2025–2045, The National Blue Agenda Action Partnership (NBAAP), introduced in 2022 during the G20 summit, and the Indonesia Blue Economy Roadmap, as potential instruments to integrate stakeholders' input into future government strategies.

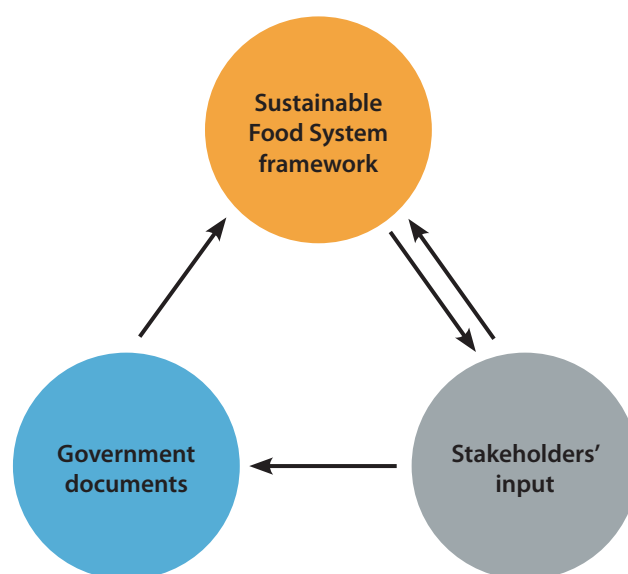


Figure 5. The framework of the report

Figure 5 presents the report's framework, which examines the current state of fisheries food systems in Indonesia in relation to the sustainable food system framework (Chapter 5). It also evaluates whether stakeholders are addressing all aspects of sustainable food systems (Chapter 6). The report assesses the potential of government documents under review to serve as a platform for advocating stakeholders' input and examines whether the portrayal of fisheries food systems in these documents encompasses all elements of sustainable food systems (Chapter 7). This report serves as a critical tool in bridging the gap between stakeholder insights and policy strategies in the frame of food system narratives, contributing to the ongoing efforts to enhance Indonesia's fisheries sector.



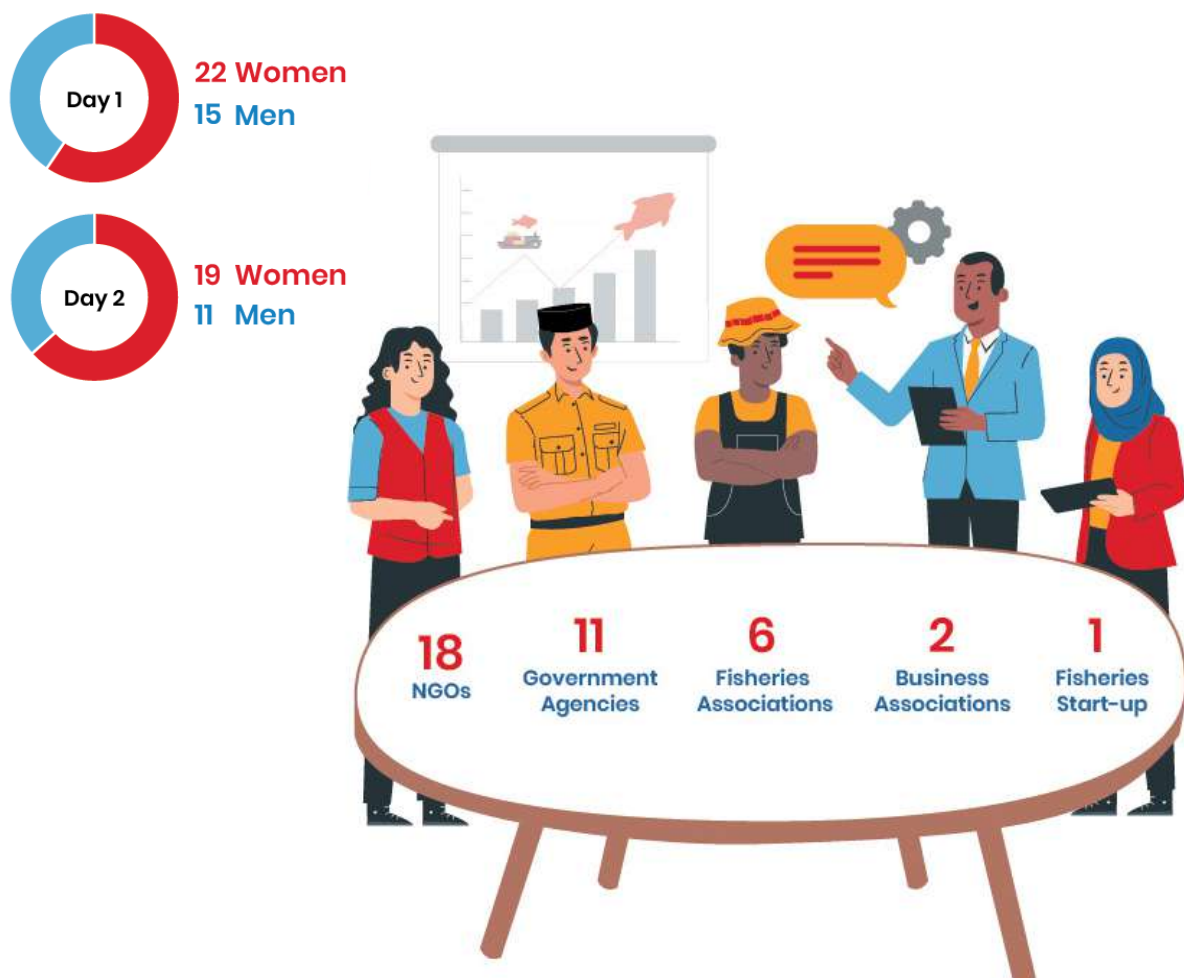
Participant Analysis

4.1 Participant Composition

The committee invited participants from diverse institutions, focusing on those actively involved in fisheries and food systems at the national level. Additionally, a specific subset of attendees was invited due to their direct involvement in fisheries projects with WRI and Humanis. The attendance comprised 22 women and 15 men on the first day, and 19 women and 11 men on the second, with seven individuals absent on the second day.

The composition of participants encompassed a diverse range of stakeholders in the fisheries sector. This included representatives from fisheries business associations, a fisheries startup, general fisheries associations, as well as provincial and central government agencies. Additionally, NGOs primarily involved in fisheries were also significantly represented. Notably, engagement from government entities, especially from MMAF, was limited. Only one of the staff members attended part of the first day, raising questions about the urgency and rationale of adopting a food systems approach in fisheries.

During group work, facilitators aimed to form balanced groups of 6–10 stakeholders. However, challenges arose in finding experts in aquaculture and inland capture fisheries, leading to groups with limited subject knowledge. In contrast, the small-scale capture fisheries group was well-represented, and the large-scale capture fisheries group was dominated by experienced government and business association members, creating a unique dynamic in discussions.



4.2 Participants' Dynamic

During the 'rich picture' exercise, it was observed that stakeholders' dynamic influenced the output of the group. The rich picture activity served two purposes: it helped stakeholders understand the interconnectedness in fisheries and provided the committee with insights into stakeholders' perspectives on fisheries within the food systems context. This exercise fostered dynamic interactions, with the presence of vocal and sometimes provocative stakeholders introducing nuanced perspectives. While effective for understanding interconnectedness, the rich picture alone may not suffice for consensus-building, suggesting the need for additional tools and processes.

A significant outcome was stakeholders agreeing on a common goal for a sustainable, inclusive fisheries food system that ensures social justice, economic prosperity, food and nutrition security, and environmental sustainability. However, the theory of change discussions, constrained by time and diverse stakeholder backgrounds, focused more on economic prosperity, environmental sustainability, and social justice, with less emphasis on food and nutrition security. This gap underscores the need for initiatives to enhance understanding and engagement in the fisheries sector's role in food security and nutrition, highlighting a potential lack of comprehensive understanding of these aspects within a sustainable fisheries system.



Current Realities and Common Goal of the Fisheries Food System In Indonesia

5.1 Issues Highlighted by Each Participants Group

5.1.1 Small-scale Capture Marine Fishery

The rich pictures for small-scale fisheries highlighted a range of issues (Figure 6a). The bottom page focused on advocating for the rights of women fishers, while the top page emphasized various regulations for conservation, capacity enhancement, technology, innovation, and market dynamics. However, there was a lack of consistent connections between these components, indicating siloed perspectives. The pictures strongly focused on challenges within the sector, existing and proposed regulations, but did not fully address consumer roles and broader socio-economic drivers.

Ecological concerns, capacity-building, combating illegal fishing, and recognizing the rights of small-scale women fishers were key discussion points. The ToC developed during the plenary session aimed at achieving a sustainable environment, thriving economy, preserving social and cultural aspects, and ensuring the well-being of coastal communities, with a focus on the reciprocal relationship between regulations and their impacts.

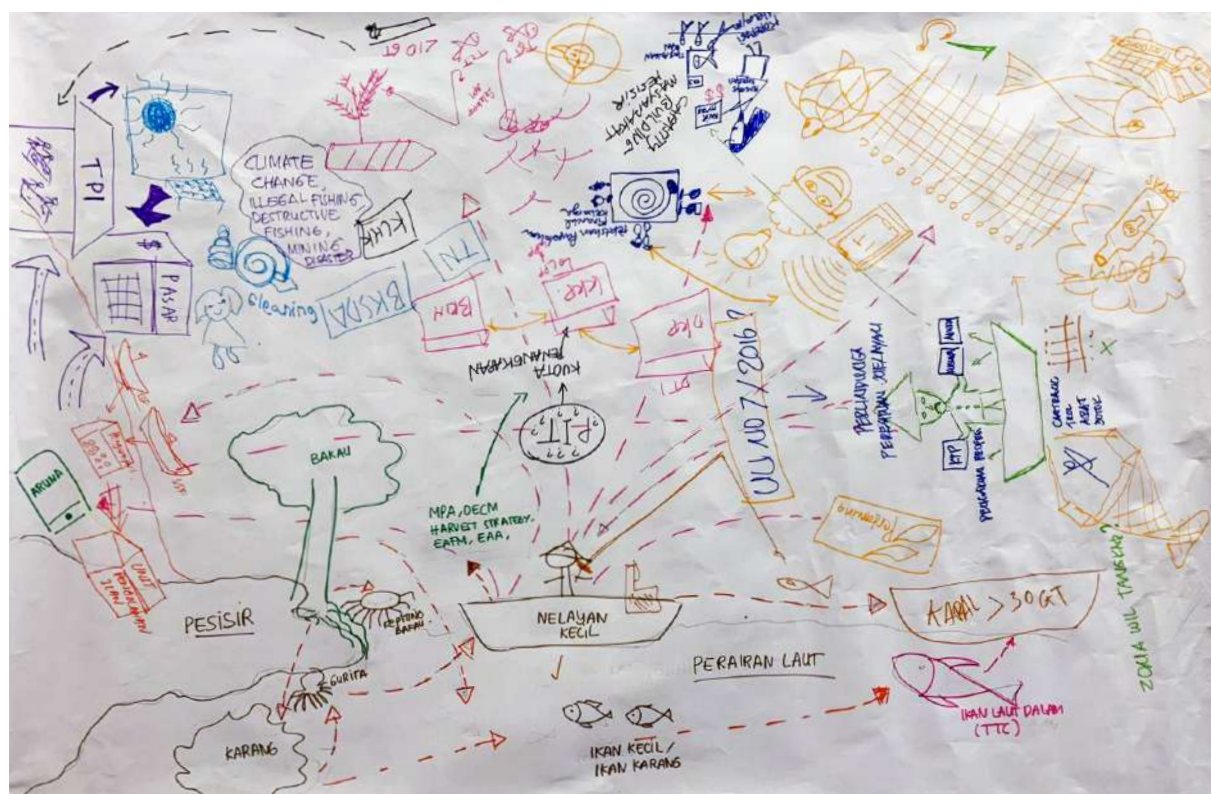


Figure 6a. Rich pictures of small-scale fishery group

5.1.2 Large-scale Fishery

The rich picture for large-scale fisheries depicts various components of the food system (Figure 6b). On the left side of the illustration, stakeholders represented elements like retailers for domestic markets and exports, as well as consumers including food vendors and households. The top page detailed fishing activities and their challenges, such as regulatory complexities, logistical issues due to the distance between fishing grounds and landing sites, problems related to illegal, unreported, and unregulated fishing (IUUF), and transshipment concerns. The bottom page outlined several drivers influencing the food system within the context of large-scale fisheries. These components spanned from production and fishing activities to processing, wholesaling, consumption, and issues related to loss and waste, highlighting the interconnectedness across the food system.

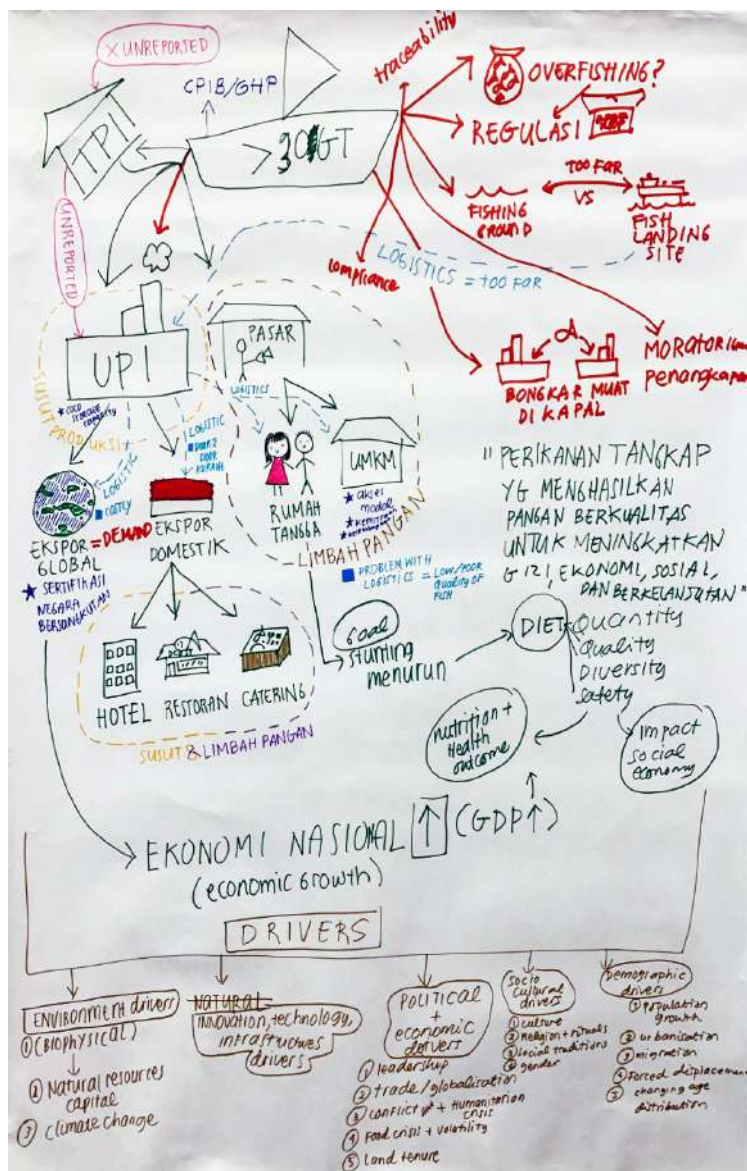


Figure 6b. Rich pictures of large-scale fishery group

During the plenary session, the group emphasized the supply chain and existing problems within these chains, though social issues were not extensively addressed. The rich picture articulated the overarching goal of the food system as reducing stunting and effectively managing food waste. The group defined large-scale fishery as any fishing operations conducted by vessels exceeding 30 gross tons and identified several challenges within this sector. One notable challenge was the recent government regulation No. 11/2023 concerning Measurable Fishing (*Perikanan Terukur* or PIT), which requires fishing vessels to report their catches in designated ports as a basis for assessing compliance with fishing quotas. Other issues included traceability, overfishing concerns, regulatory gaps in areas like catch and fishing ground allocation settings, excessive distances between fishing grounds and designated catch landing sites, unreported catches, and disparities in quality control. The group also discussed expectations that exports would positively impact economic growth. They highlighted several influencing factors on the food system within the realm of large-scale fisheries, including natural resource availability, technological advancements, political dynamics, economic considerations, social and cultural factors, and demographic trends.

5.1.3 Aquaculture

The rich pictures for aquaculture provided a detailed portrayal of the sector's key actors, focusing on production, processing, distribution, and consumers (Figure 6c). Notably, the bottom page of the picture represented small-scale and women fishers, emphasizing the need to listen to their voices and address their concerns. The rest of the picture depicted various drivers of the food system, including environmental, social, and economic factors.

The discussion in this sector primarily centered on production, processing, marketing, and the roles of stakeholders in addressing the challenges faced by these actors. The rich pictures clearly highlighted the dominance of certain actors in the aquaculture food system and identified key issues that need attention, such as ensuring the inclusion and representation of small-scale and women fishers.

The end goal for the aquaculture food system, as identified during the plenary session, is to develop a resilient aquaculture sector that is competitive, safe, inclusive, and sustainable. This goal is to be achieved through multi-stakeholder collaboration. The group also brought to light several challenges in aquaculture, including the reliance on mostly imported feed, outdated technology in water management and feed production, and limitations in human resource capacity.

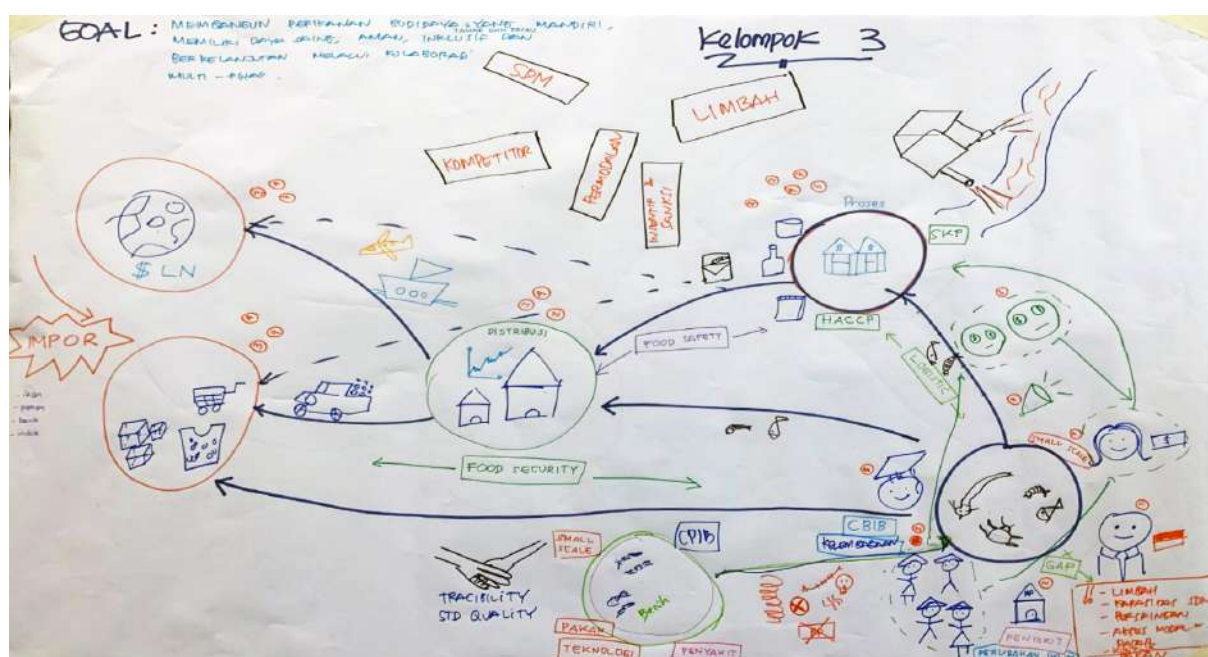


Figure 6c. Rich pictures of aquaculture group

5.1.4 Inland Fishery

The rich picture for inland fisheries depicted a comprehensive ecosystem encompassing rivers, lakes, and swamp rivers, divided into two distinct halves (Figure 6d). The right side of the picture addressed issues related to production, land use change, inclusivity, industry, and climate change. The left side focused on regulation and governance, support systems, and the overarching problems and goals of the food system in inland fisheries. These features were categorized based on their roles in the food system, including production, consumers, and drivers.

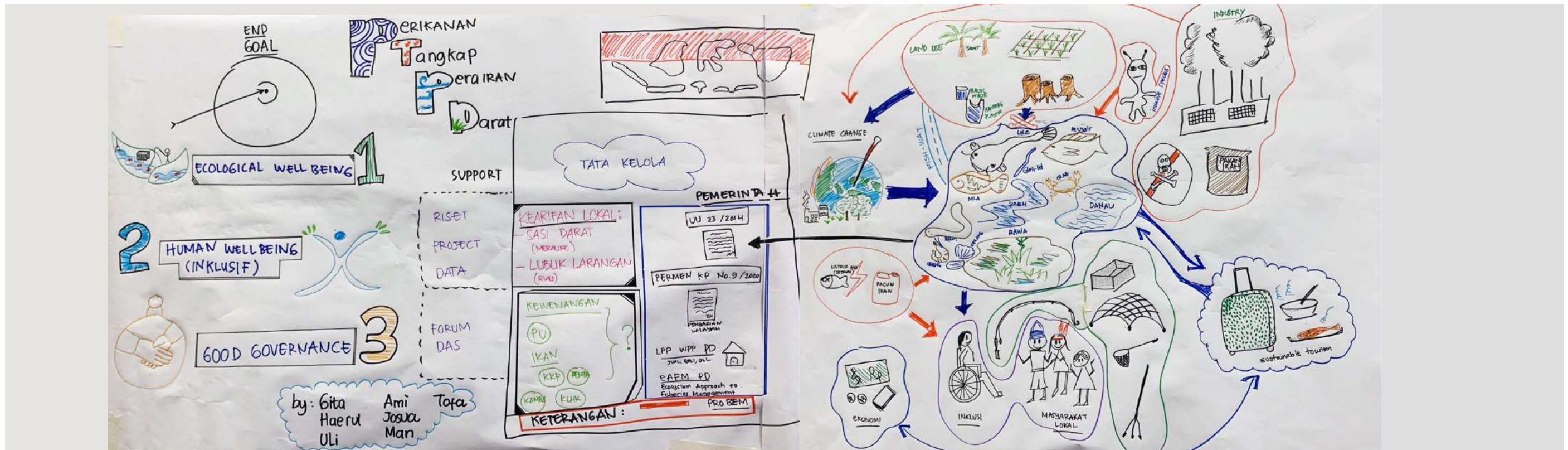


Figure 6d. Rich pictures of inland fishery group

During the plenary session, the group proposed three primary end goals for the food system in inland waters: ecological well-being, human well-being, and good governance. However, the connection between these goals and the features illustrated in the rich picture was not immediately clear.

The group highlighted several challenges and opportunities specific to inland fisheries. Due to the nature of these ecosystems, they are susceptible to pollutants from exploitative industries, land use changes, pesticide usage, erosion, plastic waste, and global warming. The complexity of managing and governing these water bodies is increased by the fact that they often fall under multiple jurisdictions. Additional challenges include destructive fishing practices like electrocution and poisoning, and the threat of invasive species to the existing ecosystem.

Despite these challenges, inland fisheries are recognized for their significant contribution to local food and nutrition, as a substantial portion of the catch is consumed locally. Opportunities for sustainable development in inland fisheries include sustainable tourism, environment-friendly fishing methods, and the exploration of high-value species. Multi Stakeholder forums, initiated by the department of fisheries and watershed department, present another avenue for development. However, compared to other fisheries sectors, inland fisheries are generally less developed in terms of data, research, multi-stakeholder forums, and project support from donors.

5.2 Conclusion of Fisheries Food System Current Realities

We have categorized the stakeholders' concerns identified in the fisheries food systems into four main areas: social, economic, environmental, and institutional challenges.

5.3 Common Goal of Fisheries Food Systems in Indonesia

After the rich picture exercise, during which participants discussed and visualized their understanding of the current situation of fisheries in the food system perspective, the participants actively engaged in reaching a common goal for fisheries food systems in Indonesia. The goal, collectively agreed upon by the stakeholders, is;

A sustainable fisheries food system that is inclusive and ensures social justice, economic prosperity, food and nutrition security, as well as environmental sustainability for the well-being of the community.

The participants regrouped to discuss the pathway from the common goal, which they had collectively agreed upon, to the current state of fisheries food systems. This common goal was central to the process of discussing and constructing the ToC. During this process, participants deliberated on strategies to achieve the common goal, addressing the various issues facing Indonesia's fisheries food systems.



Social Challenges

In the realm of social issues, small-scale fisheries emphasized the need for rights and recognition of women fishers, underlining a broader requirement for social inclusivity. Similarly, aquaculture sectors highlighted the importance of including both small-scale and women fishers, pointing to a widespread emphasis on social equity across different fisheries.

Economic Factors

conomically, large-scale fisheries grappled with the challenge of balancing sustainable practices against the backdrop of economic growth, particularly focusing on export markets. Aquaculture, on the other hand, faced economic hurdles stemming from a reliance on imported feed and the necessity for technological advancements, factors that significantly impact its economic viability.



Environmental Concerns

From an environmental perspective, small-scale fisheries were centered on ecological sustainability and the responsible exploitation of resources. Inland fisheries, meanwhile, drew attention to issues such as pollution, the impacts of climate change, and the threat of invasive species, all of which underscore the importance of maintaining ecological well-being.

Institutional and Regulatory Issues

Regarding institutional and regulatory challenges, large-scale fisheries were confronted with complexities such as those introduced by government regulation No. 11/2023 concerning Measurable Fishing (Perikanan Terukur or PIT). This specific regulation mandates fishing vessels to report their catches at designated ports, a requirement that, along with logistical and compliance issues, underscores the need for effective management systems. Additionally, inland fisheries faced governance challenges, particularly those arising from overlapping jurisdictions, further emphasizing the necessity for robust and efficient management systems in these sectors.





Mapping the Fisheries Food System Issues into Sustainable Food System Framework

Discussions among participants have raised several keywords in fisheries food systems (Figure 7). At least three keywords gain the most concern in the discussion, namely fishermen, environment and product. Issues on fishermen conditions include lack of skills to increase productivity, economies of scale, limited options for their livelihood, low-income level, vulnerability due to impact of climate change, protection, lack of capital, etc. Ecosystem is also a key concern because it relates to issues on degradation, overfishing, destructive practices, and waste. Product is highlighted because of its relation to issues on product quality and standardization, traceability, product handling and processing, marketing, added value, etc.

We identify 36 key issues raised by participants during the group discussion (Figure 8). Some of them constitute common issues among the four fisheries groups, namely lack of skills to increase product quality and economic of scale, lack of effectiveness and synergy among agencies involved in governance, overfishing, degradation of habitat and aquatic ecosystem, waste resulting from fish processing, IUU fishing and transshipment, lack of capital, lack of good handling practices and added value, the importance of good practices by local wisdom in ecosystem and species conservation, violations of law and low enforcement of regulation.

In the analysis, we mapped the fisheries issues identified during the stakeholder workshop to assess the adoption of the food system perspective in the development of Indonesia's fisheries sector. This mapping is based on the Sustainable Food System Framework (SFSF) from HLPE 2017 as presented in Figure 1. We analyzed issues raised by FGD participants and identified a total of 36 distinct issues (see detailed issues in Annex 1). We then classified these issues based on SFSF, categorizing them into drivers and constituent elements of the framework.

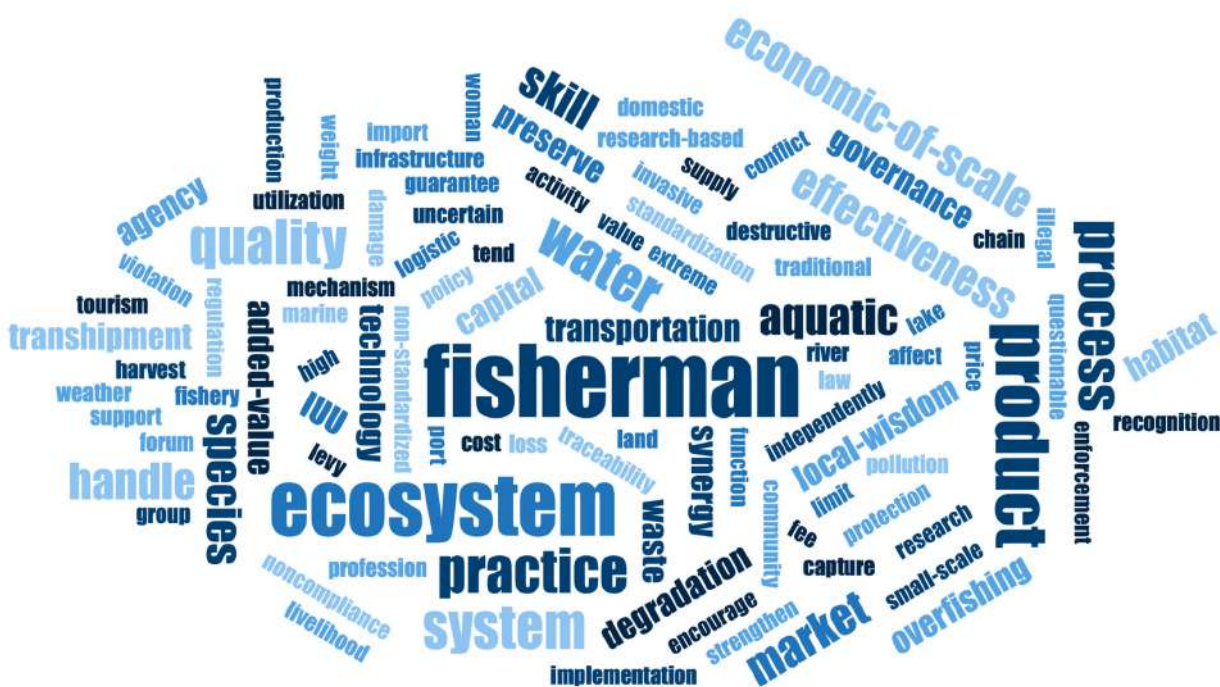


Figure 7. Word cloud of keywords from stakeholder input at Fisheries Food System Workshops

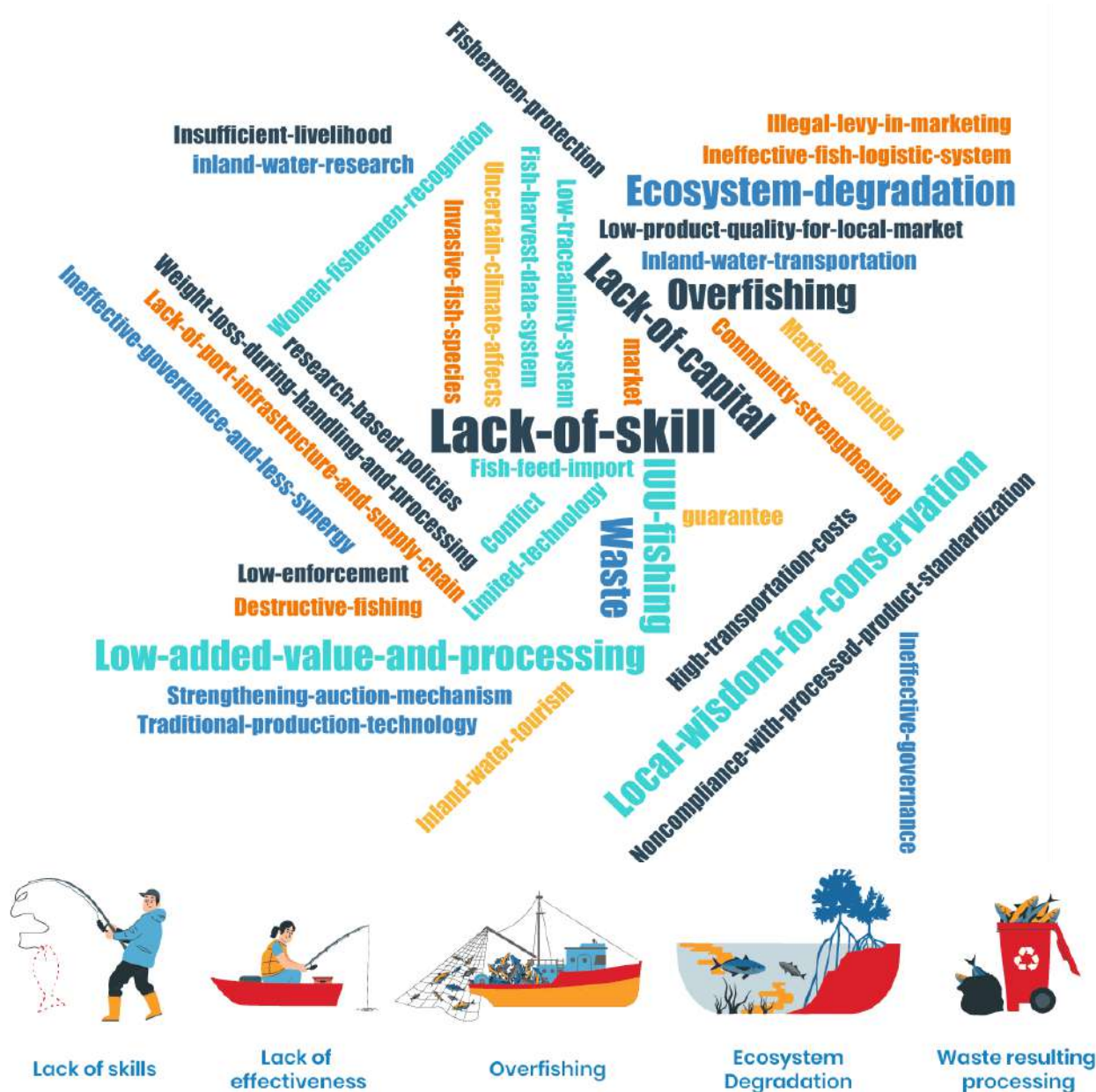


Figure 8. Key issues from stakeholder input at Fisheries Food System Workshops

The SFS Framework encompasses six drivers that collectively influence all aspects and elements, contributing to improved outcomes in nutrition and health, as well as broader positive impacts on social, economic, and environmental aspects (see Figure 1 SFS Framework from HLPE 15, 2020). While no single driver dominates across the board, we can identify predominant ones for specific issues. Our analysis reveals that the majority of the issues in Indonesia's fisheries sector are primarily shaped by four drivers: technology, innovation, and infrastructure; political and institutional factors; economic and market forces; and biophysical and environmental conditions (Figure 9). Socio-cultural and demographic drivers, while generally less influential, play a significant role in specific contexts where local knowledge and institutions are deeply ingrained and practiced across generations. However, such influence is not uniform across all regions. Notably, in areas where these socio-cultural practices persist, challenges like high stunting rates indicative of food security problems are still prevalent.

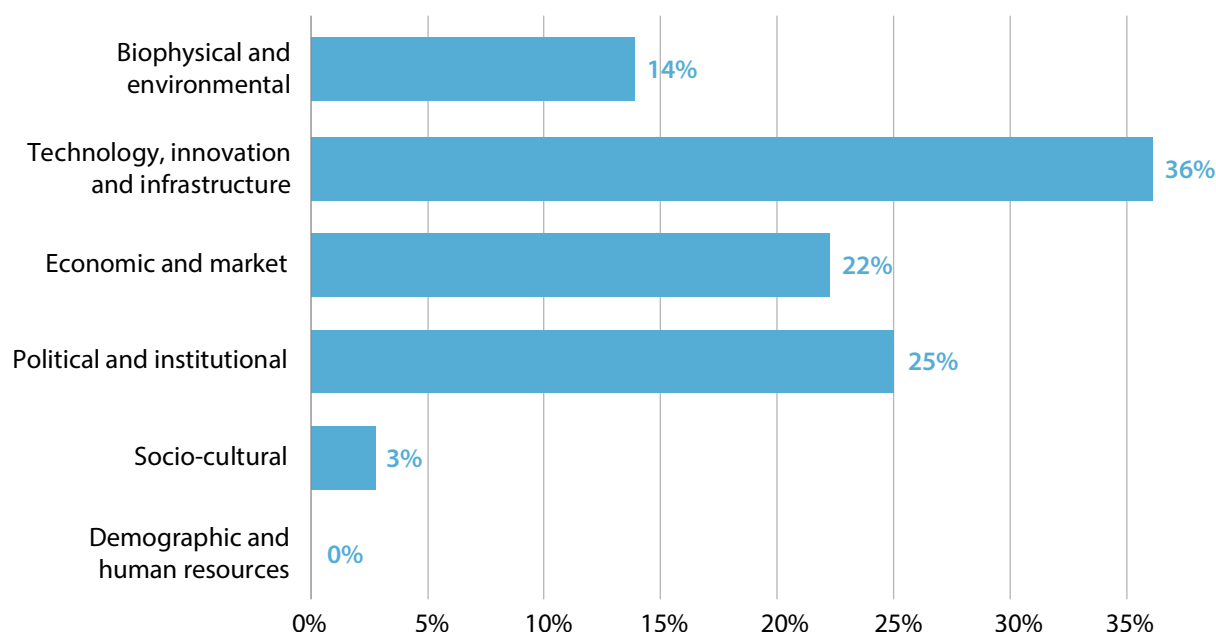


Figure 9. Analysis of drivers of sustainable food systems based on issues raised by stakeholders

We also clustered the issues raised by stakeholders into constituent elements of sustainable food system framework (HLPE 15, 2020), namely: system supporting food production, food supply chain, consumer behaviour and diets. Our analysis found that stakeholders put heavy emphasis on the food production system, with 67 percent of the issues related to it, as shown in Figure 10. This is followed by the food supply chain (28 percent) and diets (6 percent).

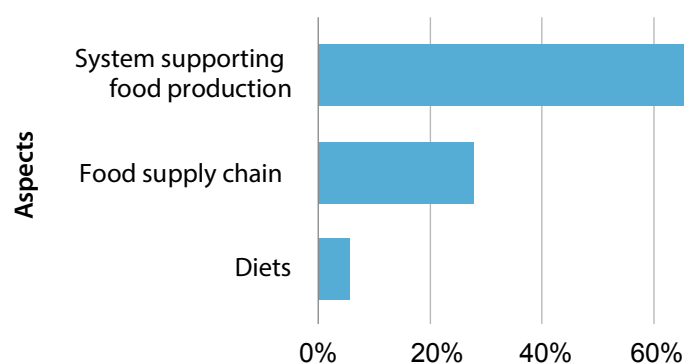


Figure 10. Analysis of constituent elements in SFS Framework based on issues raised by stakeholders

Further, we also clustered the issues raised by stakeholders against the subcomponent of system supporting food production, food supply chain, and diets, as listed in HLPE 15 (2020). Figure 11 show a significant portion of these issues pertain to human systems and the environment, accounting for 32 percent and 23 percent respectively. The other issues are distributed among economic systems (15 percent), production systems (12 percent), storage and trade (12 percent), and retail and marketing (6 percent).

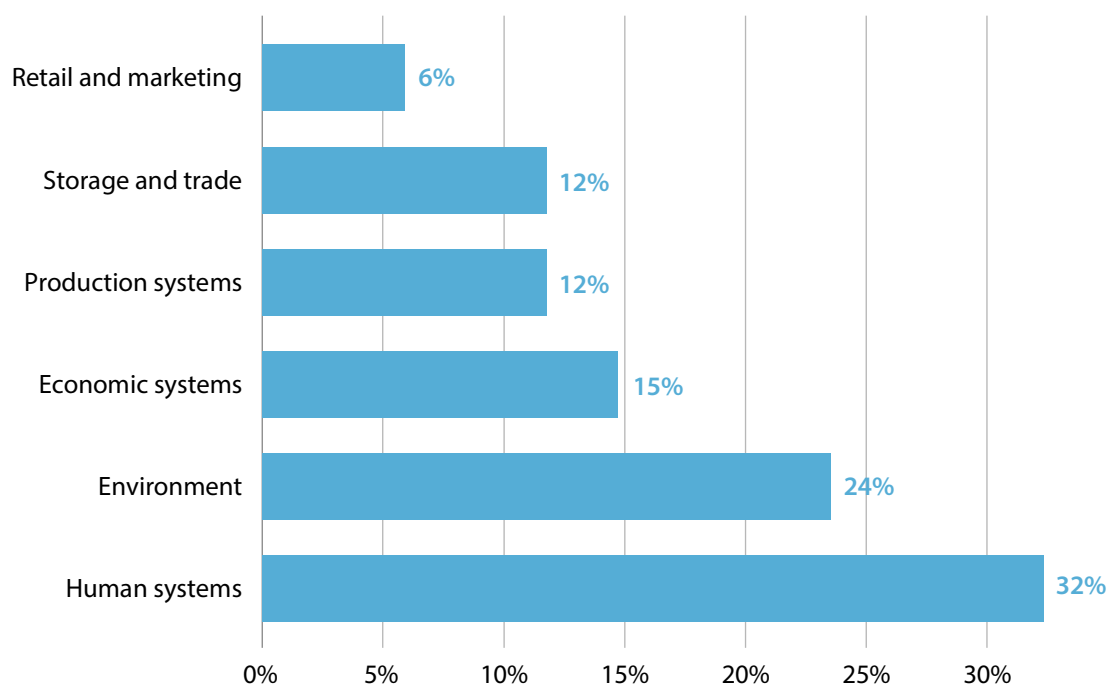


Figure 11. Analysis of Fisheries Food System key issues raised by FGD participants

This distribution of issues suggests that the development of Indonesia's fisheries sector has not fully embraced the food system framework, primarily due to the disproportionate attention given to each aspect. Stakeholders paid much attention and predominantly focused on production, emphasizing the support system for fish resource provision and production optimization and efficiency. However, there is a notable lack of focus on the downstream aspects involving society as consumers, which are crucial for the broader impact of fisheries on public health and nutrition. It is noteworthy that aspects related to consumer behaviour, such as food preference and nutrition literacy, as well as diets, including food quantity, quality, diversity, safety, and adequacy, have not been prominently addressed by the stakeholders in the FGD.



Fisheries Food System in Indonesia's Strategic Documents and Stakeholder Inputs

By employing the SFS Framework (HLPE 15, 2020) as a reference point, this chapter discerns gaps in the national strategic documents and stakeholder perspectives on strategies aimed at achieving a collective goal of establishing a sustainable aquatic food system in Indonesia. While the Indonesian government's strategic documents, including RPJMN 2020–2024, lack a clear vision for food system transformation, the draft RPJPN 2025–2045 explicitly expresses ambition for sustainable food system transformation, including the integration of aquatic food. There are explicit mentions of blue food in documents such as National Blue Agenda Action Partnership (NBAAP)³⁰ and the Blue Economy Roadmap.³¹ These documents were assessed to understand the government standpoint on developing sustainable aquatic food system transformation. Assessment employed six food security dimensions in fisheries as benchmark, and recommendations were provided to align goals and strategies proposed by fishery stakeholders with RPJPN 2025–2045.

7.1 Assessing National Strategic Documents against Six Food Security Dimensions in Fisheries

HLPE 15 underscores the pivotal role of the right to food in the transformation of a sustainable food system. While the four dimensions of food security—availability, access, utilization, and stability—remain central, the report places additional emphasis on two crucial elements, “agency” and “sustainability.” These elements are seen as imperative for aligning with SDGs and serve to streamline the overarching principle of the right to food. The right to adequate food is recognized as fundamental human rights stated in the 1948 Declaration of Human Rights as it is also reaffirmed in the Rome Declaration on World Food Security adopted in World Food Summit in 1996 *“the right to everyone has access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger”*.³²

Food system framework recognised the complexity of relationships among systems and captured the manner in which complex drivers influencing changes in a broader scale impact the food systems. This often involves uncertainty and unanticipated outcomes that feed back into the system.³³ By utilising HLPE's sustainable food system framework allows us to discern Indonesia's food system holistically.

7.1.1 RPJMN 2020–2024

RPJMN 2020–2024 outlines key programs to achieve food security, emphasizing improvements in availability, access, and quality of food, along with enhanced marine and fisheries resource management.³⁴ However, it falls short in its emphasis on aquatic food, with only one out of 25 indicators,³⁵ specifically addressing fish consumption per capita per year. Meanwhile, the

30 Page 7 of NBAAP.

31 Page 21, 51, 72, 81 and 87 of Blue Economy Roadmap.

32 HLPE. 2020. *Food security and nutrition: Building a global narrative towards 2030*.

33 HLPE. 2020. *Food security and nutrition: Building a global narrative towards 2030*.

34 Page I–13 of RPJMN 2020–2024.

35 Page II–17, 18 of RPJMN 2020–2024.

15 indicators,³⁶ for marine and fisheries resource management primarily focus on supply chain, conservation and institutions improvement. Agency and “sustainability” have not yet been attended to, revealing a potential imbalance in addressing critical aspects of food security.

The document presents five priority strategies to achieve its targets in improved food availability, access and quality. Notably, the final strategy is dedicated to enhancing the governance of the national food system. This involves reinforcing the national logistic system, integrating data on national food (including fish), establishing a food and agriculture platform, developing warehouse receipts, and managing sustainable food systems, encompassing urban food systems and food waste. Unfortunately, this is unclear of which sustainable food system framework was referred to in the document.

The targeted indicators and priority strategies for food security, as outlined, are interpreted and implemented by the Ministry of Agriculture in its five-year strategic plan for 2020–2024. Notably, matters pertaining to aquatic food and fisheries fall under the jurisdiction of MMAF with Ocean Policy Action Plan 2021–2025. This division, lacking a defined food system framework in the national strategic plan, may face challenges in determining ultimate goals.

7.1.2 Indonesia Blue Economy Roadmap

The Blue Economy Roadmap aims to expedite the implementation of the blue agenda outlined in key national documents, including RPJMN 2020–2024, Ocean Policy Action Plan 2021–2025, Indonesia SDGs Roadmap, Indonesia 2045 vision, ASEAN leaders’ commitment to the blue economy in 2021, and the Blue Economy Development Framework for Indonesia’s Economic Transformation.³⁷ The roadmap plays a crucial role in the National Development Planning system. It will directly inform the development of the upcoming RPJPN 2025–2045 and subsequent RPJMN 2025–2029, serving as a key resource with suggested actions for both long- and medium-term development plans.

The Blue Economy Roadmap outlines four missions to achieve three main targets for the 2045 vision, supported by four strategies and four outcomes. Indicators in outcome 3 contribute to the availability and access dimension of food security, including the growth of women in fisheries, higher monthly income for fishers and fish farmers, reduced poverty rates in coastal areas, and increased fish consumption (kg/capita).

The roadmap comprises five phases with phase 1 scheduled for 2023 to 2024, phase 2 to 5 aligned with the five-year term of RPJMN. Although these phases predominantly emphasize availability, access, and sustainability, discussions on the utilization, stability, and agency dimensions remain limited. In Phase 1, the focus is on availability and sustainability, encompassing ecosystem and resources management. Phase 2 (2025–2029) concentrates on availability and sustainability of ecosystem and resources management, along with enhancing equitable access to infrastructure. Phase 3 (2030–2035) outlines availability by promoting increased investment and diverse marine

³⁶ Page II–25,26 of RPJMN 2020–2024.

³⁷ Bappenas. 2023. *Indonesia Blue Economy Roadmap*. Accessed October 26. ENG 20072023_Indonesia Blue Economy Roadmap_ebook (bappenas.go.id)

resources, improving equitable access to infrastructure, and ensuring sustainability of natural resources. Phase 4 (2035–2040) maintains a focus on the availability of diverse marine resources, including fostering inclusivity among diverse groups, and sustaining the health of coastal and marine ecosystems. Phase 5 (2040–2045) delineates availability of marine resources, access to the global supply chain, and investments in research and innovation, while maintaining a focus on the sustainability of the health of coastal and marine ecosystems.

7.1.3 The National Blue Agenda Action Partnership (NBAAP)

The National Blue Agenda Action Partnership (NBAAP), introduced in 2022 during the G20 summit, aims to expedite the implementation of RPJMN 2020–2024 and the Blue Economy Roadmap. NBAAP focuses on four pillars: blue health, blue food, blue innovation, and blue finance. Blue food agenda in NBAAP is supported by at least 10 UN agencies and foreign embassies. In this document, aquatic food is a key pillar, acknowledging the crucial role of women in the blue food supply chain but highlighting their underrepresentation in policy and decision-making. The Blue Food Agenda comprises 13 key priorities, aligning with food security dimensions within the sustainable food system framework. However, it predominantly emphasises availability (10 out of 13), with considerations for access (KP7), utilisation (KP5 and KP10), stability (KP2), and sustainability (KP12 and KP13), while notably lacking focus on the agency dimension. The key priorities also recognize various drivers within the food system, including biophysical and environmental, technology innovation and infrastructure, economic and market, political and institutional, and socio-cultural aspects. Unfortunately, demographic drivers such as urbanisation, changing age profiles, and migration are noticeably absent.

7.1.4 National Long Term Development Plan (RPJPN) 2025–2045

The draft of RPJPN 2025–2045,³⁸ proposed the ultimate objective of transforming the food system into a sustainable eco-region system—characterized by health, resilience, and reliance on natural resources and local wisdom. It outlines seven policy priorities, with the primary strategy emphasizing the recognition of the right to food as a fundamental value in the transformation of a sustainable food system. This acknowledgment signifies a notable enhancement of the rights-based approach in addressing food system issues and formulating corresponding strategies. The second priority is ensuring the provision of adequate, diverse, balanced, and safe food and nutrition. The third involves boosting local food to enhance food resilience, while the fourth centers on elevating nutrition content through large-scale fortification. The fifth prioritizes improving access to food and nutrition, particularly for infants, and the sixth involves implementing conservation agriculture that is regenerative, adaptive, and low carbon. The final priority is the enhancement of blue food, demonstrating a notable commitment in the RPJPN 2025–2045 to integrate aquatic resources into the broader food system. This commitment is detailed through four strategies, including the revitalization of the fishery private sector, strengthening the cold chain to ensure quality and traceability of fishery products, focusing on research and technology databases, and improving monitoring and enforcement to address IUUF and destructive fishing practices.

38 Bappenas. 2023. Rancangan Akhir RPJPN 2025-2045.pdf

7.2 Aligning Fisheries Stakeholders Input with RPJPN 2025–2045 Strategies

During the workshop, fishery stakeholders outlined specific goals and strategies for integrating fishery food systems into the national agenda for food system transformation. This effort demonstrates the stakeholders' commitment to addressing key aspects of sustainable fishery food systems. Our focus is on aligning these stakeholder strategies, which address fishery food system issues identified in previous chapters, with the RPJPN 2025–2045. We selected the RPJPN 2025–2045 from the four documents reviewed in earlier chapters because it is the official government strategy for the long term, and it will inform the formulation of medium and short-term strategies. Additionally, the current RPJPN is still in draft form and undergoing revisions, providing an opportunity for stakeholders to contribute their inputs.

As it stands, the draft of the RPJPN 2025–2045 does not yet fully represent all issues raised by stakeholders in the workshop, including human rights aspects such as the protection of fisheries and seafood workers. The following infographic presents the goals set by fishery stakeholders during the workshop, the strategies they proposed to achieve the goals and the alignment with strategies in the RPJPN 2025–2045.

Goals proposed by fishery stakeholders



Goal 1

Achieve a healthy and sustainable ecosystem and fish stock

Aligning with RPJPN 2025–2045



Strategy 4

Improving monitoring and enforcement to address IUUF and destructive fishing practices

Strategies proposed by fishery stakeholders

- A. Enhance the management of fisheries and coastal areas.
- B. Implement strong efforts to achieve the 30x45 conservation area target through Marine Protected Areas (MPA) and involvement of traditional and customary law communities.
- C. Regulate fishing methods and gear.
- D. Monitor and report on main and bycatch results, particularly Endangered, Threatened, and Protected (ETP) species.
- E. Control and monitor ecosystem health, including coral reefs, seagrass, and mangroves.
- F. Implement environmental control and rehabilitation measures.
- G. Regulate fishing areas and vessels.
- H. Maintain continuous monitoring of fishing vessels, gears, and areas.
- I. Control invasive species and explore their utilization for their high economic value.
- J. Conduct research and development of inland water management technology.



Goals proposed by fishery stakeholders

Aligning with RPJPN 2025–2045



Goal 2 Establish strong governance and institutions through multi-stakeholder collaboration



Strategy 1 Revitalisation of fishery private sector

Strategies proposed by fishery stakeholders

- A. Capacity Strengthening: Enhancing capacity for policy advocacy to ensure effective representation and influence in decision-making processes.
- B. Integrated Information Technology: Implementing integrated information technology systems between agencies to streamline communication and collaboration.
- C. Participatory Policies: Determining and formulating participatory and collaborative policies for rural-related sectors with multi-stakeholder involvement.
- D. Regulatory Harmonization: Harmonizing regulations related to inland water management for consistency and efficiency.
- E. Good Governance Realization: Achieving good and non-overlapping governance through effective coordination and clear delineation of responsibilities.
- F. Stakeholder Collaboration: Encouraging collaboration between stakeholders for coordinated efforts in fisheries and inland water management.
- G. Public Awareness: Increasing public knowledge and awareness about the importance of sustainable coastal management through education and outreach.
- H. Policy Integration: Elevating traditionally or customarily managed areas into policy, recognizing and incorporating local practices.
- I. Knowledge Management: Bringing back local and traditional knowledge through effective knowledge management practices.
- J. Identity Recognition: Enhancing recognition of the identity of male and female fishermen, ensuring equal access to social safety nets.
- K. Local Institution Strengthening: Strengthening local institutions to empower communities and improve governance at the grassroots level.
- L. Stakeholder Representation: Optimizing DAS FORUM (MSF) to ensure stakeholder representation from diverse interests.
- M. Promotion and Campaigns: Promoting widespread public education related to the management of inland water ecosystems.
- N. Operationalization of Instruments: Implementing instruments like EAFMPD, LPP WPP PD for fisheries management in inland waters, including monitoring and evaluation, with an inclusive and cross-sectoral approach.
- O. Sustainable Tourism Model: Developing a sustainable tourism model in inland water areas to balance economic development with environmental conservation.
- P. Capacity Building: Increasing capacity for managing inland water ecosystems through training and skill development programs



Goals proposed by fishery stakeholders



Goal 3

Develop a sustainable fisheries-based food system ensuring food security and nutrition

Aligning with RPJPN 2025–2045



Strategy 2

Strengthening the cold chain to ensure quality and traceability of fishery products



Strategy 3

Focusing on research and technology database

Strategies proposed by fishery stakeholders

- A. Implementation of Quality Standards: Adopting certifications such as CBIB, CPIB, HACCP, SKPI/fish handling expertise, and ecolabel to ensure product quality.
- B. Enhancing Traceability: Implementing measures to improve fish product traceability, ensuring transparency in the supply chain.
- C. Market Guarantee and Standards: Establishing market guarantees, price standards, and developing an e-commerce system to streamline transactions.
- D. Legal System Improvement: Enhancing the legality system for fishing vessels to promote responsible and lawful practices.
- E. Infrastructure Development: Investing in fishing port infrastructure and logistic systems to facilitate efficient operations.
- F. Technology Utilization: Developing and utilizing fishing technology, improving handling and processing practices with tools like weather information, fish trade information, and communication tools.
- G. Quality and Quantity of Seed Production: Increasing the quality and quantity of Parent and Seed production to sustain aquaculture.
- H. Reducing Imports: Implementing measures to reduce dependency on imports and promote self-sufficiency.
- I. Added Value: Increasing the added value of fish products, including those from inland water, through processing and marketing strategies.
- J. Diversity in Aquaculture: Promoting diversity in aquaculture products to meet market demands and enhance resilience.
- K. Innovation and Technology: Emphasizing innovation and technology adoption to improve efficiency and sustainability.
- L. Infrastructure Improvement: Investing in the improvement of infrastructure facilities and systems to support the fisheries sector.
- M. Access to Permits and Capital: Ensuring easy access to permits and capital for stakeholders to encourage participation and growth in the industry.





Goal 4

Increase social welfare and sovereignty



Strategy 1

RPJPN 2025–2045, revitalization of fishery private sector

Strategies proposed by fishery stakeholders

- A. Capacity Building for Small-Scale Fishermen, SMEs, and Cooperatives: Provide training and resources to increase the capacity of small-scale fishermen, SMEs, and cooperatives in sustainable fisheries practices.
- B. Marine and Coastal Food-Based Entrepreneurship: Foster the development of marine and coastal food-based community entrepreneurship with a sustainable business model.
- C. Financial Literacy and Access to Capital: Strengthen financial literacy among fishermen, facilitate marketing of fishery products, and improve access to capital.
- D. Climate Change Impact Mitigation: Encourage guarantees and access to insurance for fishermen to safeguard their livelihoods from the impacts of climate change.
- E. Capacity Building in Fishing Activities: Enhance the capacity of fishermen in fishing activities through training and skill development.
- F. Gender Equality and Social Inclusion (GESI): Develop a gender equality and social inclusion-based sustainable business model, empowering female fishermen in fishing activities.
- G. Financial Support and Cooperative Development: Provide capital support through banking, strengthen fishermen cooperatives, and develop micro markets.
- H. Law Enforcement Strengthening: Strengthen law enforcement to ensure adherence to regulations and sustainable fishing practices.
- I. Advocacy and Worker Protection: Accompany fishermen's advocacy against legal challenges and protect workers (fishers and food workers) through fishing working agreements, insurance, and guaranteed minimum wages. Prohibited debt bondage
- J. Protection and Recognition: Ensure protection and recognition of both male and female fishermen, addressing their specific needs and challenges.
- K. Human Resources Capacity Increase: Increase human resources capacity through training and education programs.
- L. Business Matching and Investor Relations: Facilitate business matching with potential buyers and investors to support market access.
- M. Consumer Education and Socialization: Conduct consumer education and socialization efforts to enhance community knowledge and insight.
- N. Promote Fish Consumption and Nutrition: Increase fish consumption rates and decrease stunting through education and awareness campaigns.
- O. Community Capacity Building for Food and Nutrition (GESI): Increase community capacity in terms of food and nutrition, with a focus on gender equality and social inclusion considerations.





Recommendations

8.1 Recommendations to Advance the Fisheries Food System Agenda (For Government)

8.1.1 Addressing the Lack of A Sustainable Food System Approach in Indonesia's Fisheries Food Systems, as Identified Through Stakeholders' Input and Document Reviews

Based on our review of strategic documents, including RPJPN 2025–2045, RPJMN 2020–2024, the Blue Economy Roadmap, and NBAAP, we found that several issues deemed important by stakeholders and/or included in the SFS framework were not addressed in the documents. We recommend the following measures for the government to consider:

1. **Integration of Fisheries Food System in Strategic Planning:** Ensure the effective integration of the fisheries food system narrative within Indonesia's broader strategic plans, especially the RPJPN 2025–2045. The framework could reference HLPE Report 15 (2020) to incorporate elements of agency and sustainability into the narrative. This approach is essential for coherently and effectively addressing the diverse challenges within the fisheries sector.
2. **Mapping and Coordination of Government Institutions:** Emphasize the mapping of government institutions with mandates in fisheries food systems and establish a coordination channel among them. Additionally, map all national strategic documents related to fishery food systems to guide the national strategy for fisheries food systems development in Indonesia.
3. **Comprehensive Stakeholder Mapping and Engagement:** Conduct a thorough mapping of all stakeholders in fishery food systems to establish clear coordination mechanisms among governmental agencies and delineate responsibilities. This will foster synergy and prevent duplication of efforts. Furthermore, expand stakeholder involvement in formulating strategic plans like the RPJMN 2025–2029 and RENSTRA, ensuring diverse representation for more inclusive decision-making.



8.1.2 Addressing Lack of Knowledge and Understanding on Food and Nutrition Security Issues among Fisheries Stakeholders

There is an urgent need to launch programs aimed at deepening the understanding and engagement of fisheries stakeholders in the sector's crucial role in food security and nutrition. Additionally, there is also need to involve food and nutrition stakeholders in fisheries programs. Despite Indonesia's vast fisheries sector and high fish consumption, the country still faces significant challenges with malnutrition, a paradox that underscores the need for a more nuanced approach. Fish, known for its nutritional value, should be a key component in combating malnutrition, yet the persisting high rates indicate underlying issues in the food system that need to be addressed.

Our findings suggest that fisheries stakeholders are relatively unfamiliar with the food system perspective and did not emphasize nutrition and dietary issues during the Focus Group Discussions (FGD). Programs that aimed at deepening the understanding and engagement of fisheries stakeholders in the food security and nutrition are crucial not only for highlighting but also for strengthening the significant contribution of the fisheries sector to the sustainability of the overall food system.

One program could focus on bolstering food security and nutrition among fisherfolk, whether in local fishing communities or aboard large-scale fishing vessels. This initiative aims to shift the focus of these communities towards crucial issues of food security and nutrition within the fisheries sector. Another valuable program could involve a detailed documentation of the diversity of Indonesian fish species, alongside an analysis of their nutritional value, mapped against the regions where they are predominantly consumed and caught. This project could create a collaborative platform, fostering learning and exchange between fisheries stakeholders and food and nutrition experts. Additionally, a project aimed at identifying the root causes of malnutrition in fishing communities, and proposing solutions leveraging locally available resources, could be highly impactful. Addressing these identified gaps will pave the way for a more resilient and sustainable fisheries sector, ultimately contributing to a reduction in Indonesia's malnutrition rates.

8.2 Recommendations for Improving Workshop Methodology (For Organisers)

8.2.1 Improving Composition of the Participants

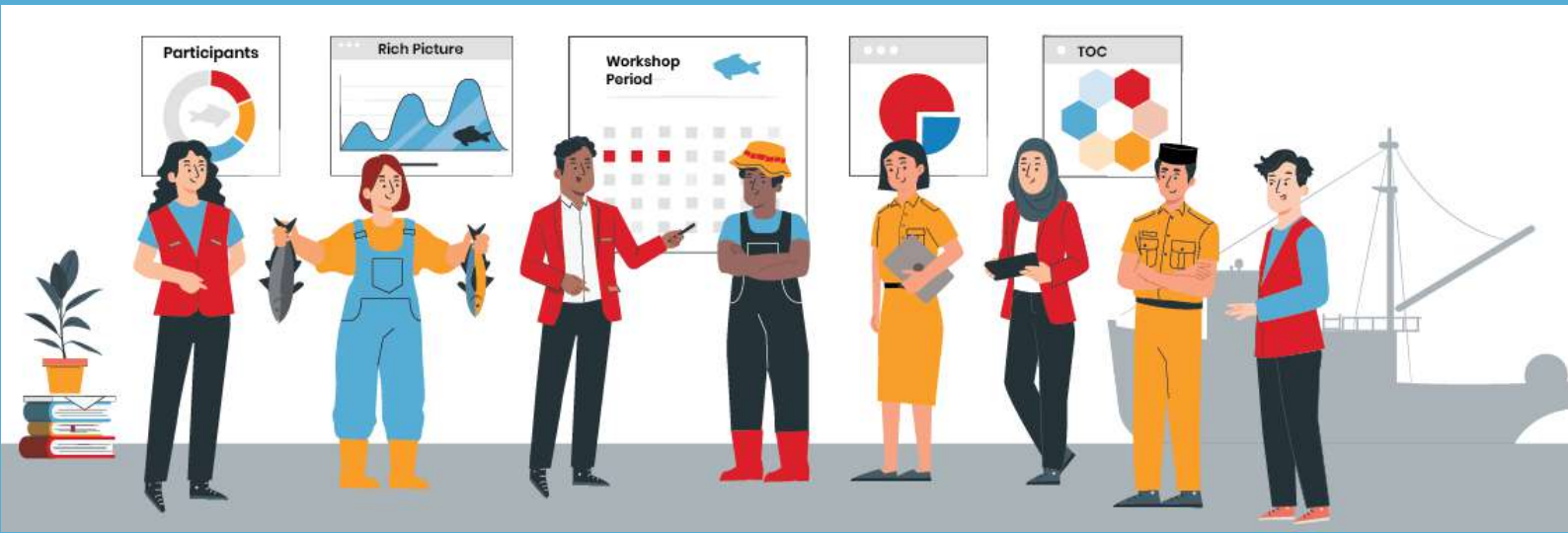
Data collection method through workshop and FGDs relies heavily on the participant composition which influences the group dynamics. A desired group dynamic is when the participants are balanced in terms of their knowledge, expertise, and characters that creates a comfortable environment for each participant to express their opinions. It is imperative that workshop organizers ensure the diversity of participant representation for better group dynamics.

8.2.2 Extending the Workshop Period

Extending the workshop to three days would significantly enhance the workshop output. This additional time would allow participants to more effectively navigate between food and nutrition issues and fisheries issues, particularly beneficial for those less familiar with food and nutrition topics. Moreover, participants would have ample opportunity to effectively utilize the ToC in delivering their input and formulating their strategies.

8.2.3 Utilization of Rich Pictures

Acknowledging the dual purpose of rich pictures is crucial in our approach. These tools serve not only to illustrate the interconnectedness within fisheries but also to provide the committee with a contextual understanding of the issues at hand. However, it's important to note that while rich pictures are effective in fostering mutual understanding among participants, they should not be the sole tool employed. This is because they may not always fully integrate the diverse perspectives necessary for consensus-building. Therefore, complementing rich pictures with other methodologies is essential to ensure a comprehensive and inclusive approach to discussion and decision-making.



8.2.4 Refining the Theory of Change (ToC) Process

The establishment of a common goal for the fisheries food system, achieved through active participation, marks a significant accomplishment. This collaborative effort reflects the commitment and engagement of all stakeholders involved. However, it's important to recognize certain limitations encountered during the process. The constraints of insufficient time, coupled with the diverse backgrounds of stakeholders, contributed to a somewhat disorganized ToC. To address these challenges, it is suggested that future workshops adopt a more structured approach to the ToC process. This would involve allocating adequate time for discussion and ensuring that stakeholders from varied backgrounds can effectively contribute. By doing so, we can facilitate a clearer delineation of goals, visions, outcomes, and strategies, leading to a more coherent and actionable ToC that truly reflects the collective aspirations and insights of all participants.

Annexes

Annex A. List of Participants

ID	Gender	Institution	Position	Day 1	Day2	Invited
1	Laki-laki	JP2GI	Ketua	Yes	Yes	Yes
2	Perempuan	WWF Indonesia	Marine Business & Investment Specialist	Yes	Yes	Yes
3	Perempuan	WCSIP	Marine Science Unit Manager	Yes	Yes	Yes
4	Laki-laki	Bappenas		Yes	No	
5	Laki-laki	ICCTF Bappenas	Program Officer	Yes	Yes	Yes
6	Laki-laki	Bappenas		Yes	No	
7	Perempuan	USAID Ber-IKAN	Supply Chain & Traceability Specialist	Yes	Yes	Yes
8	Perempuan	MDPI		Yes	Yes	Yes
9	Perempuan	Pesisir Lestari	Direktur	Yes	Yes	Yes
10	Laki-laki	Pemda Papua Barat	Kabid Ekbang	Yes	Yes	Yes
11	Perempuan	Environmental economist	Folu Wri	Yes	Yes	
12	Perempuan	WRI		Yes	No	
13	Laki-laki	DKP Jateng	Kasubag Program	Yes	Yes	Yes
14	Perempuan	Bappeda Provinsi Jawa Tengah	Staf	Yes	Yes	Yes
15	Perempuan	Yayasan Rekam Nusantara	Team Leader	Yes	Yes	Yes
16	Laki-laki	WWF Indonesia		Yes	Yes	Yes
17	Perempuan	PPNI	Sekjen	Yes	Yes	Yes
18	Laki-laki	Kementerian Koperasi dan UKM	Jabatan Fungsional Analisi Kebijakan Ahli Muda	Yes	Yes	Yes
19	Laki-laki	FOLU Asia	FOLU Asia Coordinator	Yes	Yes	
20	Perempuan	KEHATI	Program Development Manager	Yes	Yes	Yes
21	Perempuan	AP2HI		Yes	Yes	Yes
22	Perempuan	Yayasan KEHATI	Agricultural Program Assistant	Yes	Yes	Yes
23	Perempuan	YKAN		Yes	No	Yes
24	Laki-laki	WALHI Jawa Tengah	Direktur Eksekutif	Yes	Yes	Yes
25	Perempuan	KNTI	Program Manager	Yes	Yes	Yes
26	Perempuan	Dit. IPEK, Bappenas	Konsultan Ekonomi Biru	Yes	Yes	Yes

ID	Gender	Institution	Position	Day 1	Day2	Invited
27	Laki-laki	KIARA (Koalisi Rakyat untuk Keadilan Perikanan)	Deputi Pengelolaan Pengetahuan	Yes	Yes	Yes
28	Perempuan	GAIN	Comms	Yes	Yes	Yes
29	Perempuan	Bappenas		Yes	No	
30	Laki-laki	AP2HI	Outreach Manager	Yes	Yes	Yes
31	Laki-laki	PT. Aruna Jaya Nuswantara	Public Policy & Government Relations Officer	Yes	Yes	Yes
32	Perempuan	AP5I - Asosiasi Produsen Pengolahan dan Pemasaran Produk Perikanan Indonesia	Sekretaris Eksekutif	Yes	Yes	Yes
33	Laki-laki	KKP	Market Analyst, Direktorat Pemasaran	Yes	No	Yes
34	Perempuan	APCI	Wasekjen	Yes	Yes	Yes
35	Laki-laki	Bappenas		Yes	No	
36	Perempuan	Yayasan HIVOS	DMEL Coord	Yes	Yes	
37	Perempuan	Yayasan HIVOS	Executive Director	Yes	No	
38	Perempuan	Yayasan HIVOS	PDM Coordinator	Yes	Yes	

Annex B. Key Issues of ToC

Key Issues	Large Scale Fisheries	Small Scale Fisheries	Inland Fisheries	Aqua-culture
Lack of fishermen's skill to increase product quality and economies of scale	✓	✓		✓
Lack of effectiveness and synergy among agencies involved in governance		✓	✓	
Overfishing	✓	✓		
Degradation of habitat and aquatic ecosystem	✓		✓	
Waste resulting from fish processing	✓			✓
IUU Fishing and transshipment	✓		✓	
Lack of capital	✓			✓
Lack of good handling practices and added value	✓	✓		
Good practices by local wisdom still apply to preserve the ecosystem and certain species		✓	✓	
Violations of laws and low enforcement of regulations	✓	✓		
Conflict among fishermen	✓			
Limited technology	✓			
Fisherman protection is still questionable		✓		
Lack of recognition of the fishing profession for women		✓		
The need to strengthen communities, fishermen groups, fishermen forums in inland waters			✓	
Inland water research is still not widely developed			✓	
The need to encourage research-based policies			✓	
Marine pollution	✓			
Destructive fishing activities			✓	
Extreme and uncertain climate affects inland aquatic ecosystems			✓	
Invasive fish species tend to damage the functions of inland water ecosystems			✓	
High transportation costs and illegal levies in marketing				✓
Inland capture fisheries is mainly small scale which cannot support livelihood sufficiently			✓	
Tourism is increasingly developing in inland waters			✓	
Utilization of rivers and lakes for transportation			✓	
Lack of fish harvest data system	✓			
Lack of traceability system	✓			
Fish feed still depends on imports				✓

Key Issues	Large Scale Fisheries	Small Scale Fisheries	Inland Fisheries	Aqua-culture
Traditional production technology				✓
Low effectiveness of fish logistic system	✓			
Weight loss during handling and processing	✓			
Lack of port infrastructure and supply chain systems	✓			
Lack of implementation of bidding mechanism	✓			
Non-standardized fish price and lack of market guarantee	✓			
Low quality of domestic marketted fish product	✓			
Noncompliance with processed product standardization				✓

Annex C. Theory of Change (ToC) of Each Group

Small-scale Fishery

GOAL 1		
Ekosistem pesisir yang sehat dan masyarakat pesisir yang berdaulat dan sejahtera		
OUTCOME 1	OUTCOME 2	OUTCOME 3
Ekosistem pesisir yang terkelola secara lestari untuk mendukung ketahanan pangan & gizi masyarakat	Masyarakat pesisir yang sejahtera dan berdaulat	Terlaksananya kebijakan dan regulasi yang inklusif
OUTCOME 1.1	OUTCOME 2.1	OUTCOME 3.1
Sistem pengelolaan kawasan terbentuk	Tersedianya wirausaha nelayan dan masyarakat perikanan yang berkelanjutan.	Terbentuknya regulasi dan kebijakan yang efektif dalam pengelolaan kawasan perikanan
OUTCOME 1.2	OUTCOME 2.2	OUTCOME 3.2
Tersedianya informasi mengenai kondisi ekosistem pesisir yang akurat.	Meningkatnya pengelolaan keuangan keluarga nelayan dan masyarakat pesisir.	Terintegrasi kebijakan dan informasi antar stakeholder terkait
OUTCOME 1.3	OUTCOME 2.3	
Peningkatan kesadaran dan keterlibatan masyarakat tentang pengelolaan ekosistem pesisir.	Adanya perlindungan nelayan dan masyarakat pesisir yang terdampak perubahan iklim	
STRATEGY 1	STRATEGY 2	STRATEGY 3
<ol style="list-style-type: none"> 1. Menyediakan informasi tentang kondisi ekosistem sebagai basis pengelolaan (1.1) 2. Usaha mencapai target kawasan konservasi 30x45 melalui MPA dan pengelolaan tradisional dan masyarakat hukum adat (1.1) 3. Monitoring dan pengawasan kesehatan ekosistem (terumbu karang, lamun, dan mangroves) (1.2) 4. Pengelolaan wilayah perikanan dan kawasan pesisir (1.2) 5. Peningkatan pengetahuan dan kesadaran masyarakat tentang pentingnya pengelolaan pesisir yang berkelanjutan (1.3) 	<ol style="list-style-type: none"> 1. Peningkatan kapasitas nelayan skala kecil, UMKM, dan koperasi dalam perikanan berkelanjutan (2.1) 2. Pengembangan kewirausahaan masyarakat berbasis pangan laut dan pesisir dengan model bisnis yang berkelanjutan (2.1) 3. Penguatan literasi keuangan, pemasaran produk perikanan dan akses permodalan (2.2) 4. Business matching dengan potential buyer dan investor (2.2) 5. Perlindungan & pengakuan nelayan laki-laki dan perempuan (2.2) 6. Mendorong adanya jaminan dan akses jaminan/asuransi nelayan atas mata pencahariannya karena terdampak perubahan iklim (2.3) 	<ol style="list-style-type: none"> 1. Pengaturan penangkapan berdasarkan zonasi (WPP) dan kuota (3.1) 2. Penguatan kapasitas terkait advokasi kebijakan (3.1) 3. Mengangkat pengelolaan kawasan yang dilakukan secara tradisional atau masyarakat hukum adat menjadi kebijakan (3.1) 4. Teknologi informasi yang terintegrasi antar instansi (3.2) 5. Penetapan/ perumusan kebijakan yang partisipatif dan kolaboratif dalam sektor rural dan multipihak (3.2) 6. Mendorong pengakuan identitas nelayan laki-laki dan perempuan, dan akses jaring pengaman sosial (3.2)

Large-scale Fishery

PERIKANAN SKALA BESAR DI INDONESIA

Untuk mendukung sistem pangan perikanan berkelanjutan yang inklusif dan menjamin keadilan sosial, kemakmuran ekonomi, ketahanan pangan dan gizi serta kelestarian lingkungan demi kesejahteraan masyarakat

REALITA

- Harga ikan belum terstandar, belum ada jaminan pasar
- Keterbatasan modal dan keterampilan nelayan/pelaku usaha dalam meningkatkan mutu produk dan skala usaha
- Keterbatasan sistem ketelusuran
- Keterbatasan teknologi dan pengetahuan dalam mengakses sumber daya
- Pelanggaran hukum dan aturan serta rendahnya tingkat kepatuhan
- Minimnya infrastruktur pelabuhan dan sistem rantai pasok
- Kerusakan habitat dan lingkungan perairan
- Pencemaran
- Ancaman IUU fishing dan transshipment
- Ancaman overfishing

GOAL

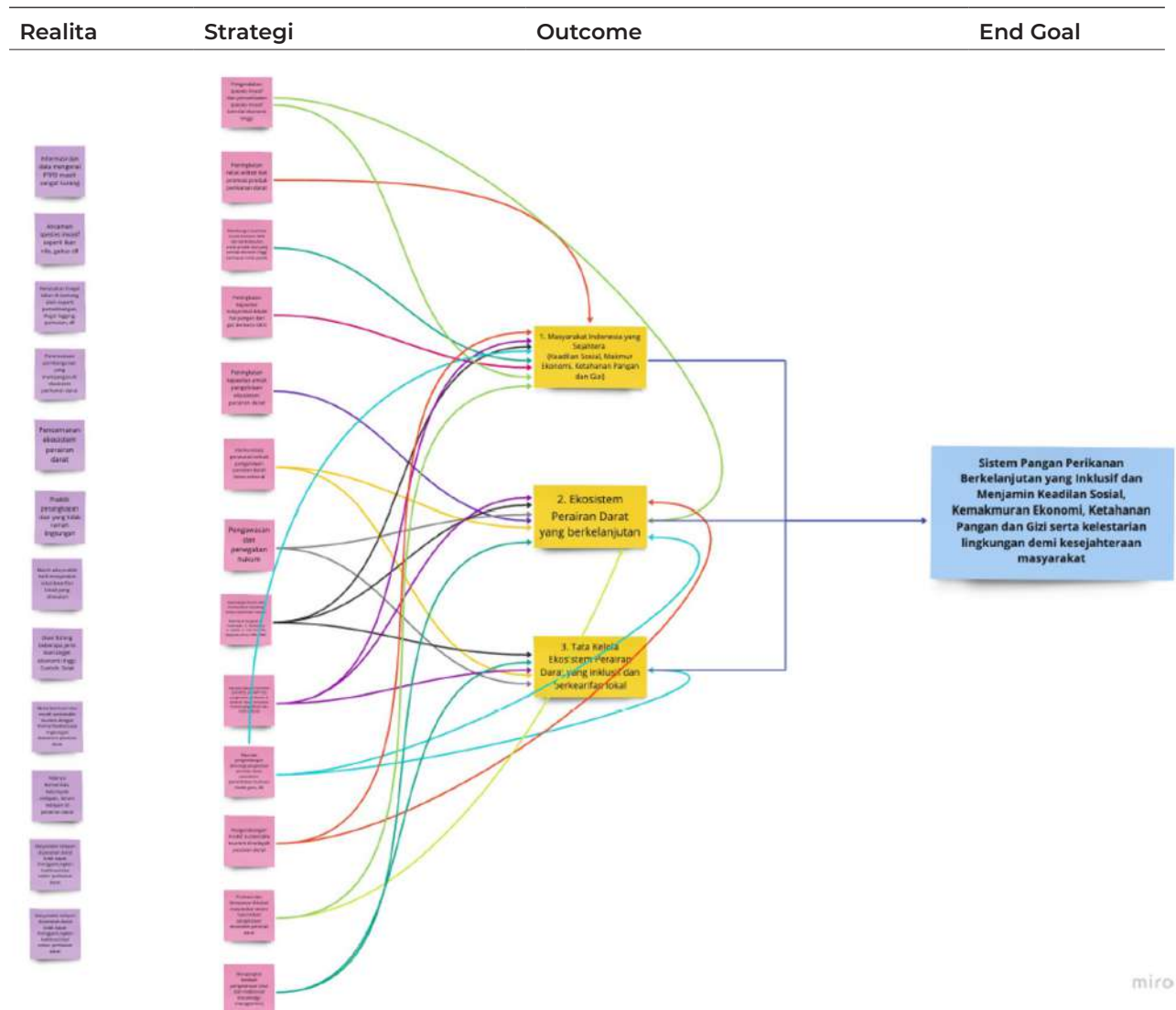
Sistem perikanan tangkap yang mendukung kesejahteraan masyarakat serta keberlanjutan lingkungan dan sumber daya ikan

STRATEGY 1	STRATEGY 2	STRATEGY 3	STRATEGY 4
Penguatan mutu produk perikanan	Peningkatan kesejahteraan nelayan dan kepatuhan	Perbaikan lingkungan	Perbaikan stok ikan
<ul style="list-style-type: none"> • Peningkatan sistem legalitas kapal perikanan (O1.3; 2.3) • Pengendalian mutu hasil tangkapan (O1.1) • Meningkatkan ketelusuran produk perikanan (O1.1; 1.2) • Jaminan pasar, standar harga, pengembangan sistem e-commerce (O1.2) 	<ul style="list-style-type: none"> • Peningkatan kapasitas nelayan dalam kegiatan perikanan (O2.1) • Pengawasan yang berkesinambungan: Kapal perikanan, alat tangkap, daerah tangkapan ikan (O2.3; 3.1; 3.2; 4.1) • Pengaturan kapal perikanan (O2.3; 3.2) • Perlindungan pekerja (ABK, buruh kapal) melalui perjanjian kerja laut dan asuransi, serta jaminan upah minimum yang meliputi biaya operasi, biaya makan, biaya hidup, perawatan kapal, tabungan (O2.1) • Mendampingi advokasi nelayan terhadap aturan hukum (O2.2) • Memberikan dukungan permodalan melalui perbankan, penguatan koperasi nelayan, dan pengembangan pasar mikro (O2.1) • Pemberdayaan perempuan nelayan dalam kegiatan perikanan (O2.4) 	<ul style="list-style-type: none"> • Pengaturan daerah tangkapan ikan (O3.2; 4.1) • Pengaturan metode dan alat tangkap (O3.2; 4.1) • Pengendalian dan rehabilitasi lingkungan (3.1) 	<ul style="list-style-type: none"> • Monitoring dan pelaporan hasil tangkapan utama dan sampingan (ETP species) (O4.1)
<ul style="list-style-type: none"> • Mendukung implementasi standar mutu: CPIB, SKPI (Surat Keahlian Penanganan Ikan), sertifikasi ekolabel • Pengembangan dan pemanfaatan teknologi penangkapan ikan, penanganan dan pengolahan hasil panen (mis.informasi cuaca, informasi perdagangan ikan, dan alat komunikasi) • Pengembangan infrastruktur pelabuhan perikanan dan sistem logistik 			
OUTCOMES 1	OUTCOMES 2	OUTCOMES 3	OUTCOME 4
Produk perikanan bermutu	Nelayan sugih sejahtera	Lingkungan terjaga	Sumber daya ikan berkelanjutan
1.1 Produk perikanan yang bermutu 1.2 Pasar dan harga patokan ikan yang terjamin 1.3 Sistem logistik dan rantai pasok yang aman dan terjamin	2.1 Kesejahteraan, taraf ekonomi dan skala usaha nelayan dan pekerja perikanan meningkat 2.2 Perlindungan hukum terjamin 2.3 Kepatuhan hukum meningkat 2.4 Bebas konflik dan ijon	3.1 Lingkungan yang lestari 3.2 Bebas IUU Fishing	4.1 Stok sumber daya ikan terjaga

Aquaculture

Strategi	Outcome 1	Outcome 2	Tujuan Akhir
Peningkatan kualitas dan kuantitas produksi induk dan benih	<ul style="list-style-type: none"> • Benih unggul • Induk unggul • Mengurangi impor • Benih dan induk yang terstandarisasi • Produk olahan ikan yang terstandarisasi • Daging yang berkualitas 	<ul style="list-style-type: none"> • Produk terseluruh • Produk lebih bermutu • Budidaya berkembang • Lebih berdaya saing (produk bermutu, produksi yang efisien) • Produksi yang berkelanjutan • Lingkungan terjaga (patuh pada) • Produk bisa diterima di manca negara 	Perikanan budidaya berkelanjutan yang mendukung ketahanan pangan melalui kolaborasi multi-pihak
Peningkatan inovasi dan teknologi	<ul style="list-style-type: none"> • Efisiensi produksi • Kualitas dan kuantitas produksi meningkat • Produk perikanan budidaya yang beragam • Harga stabil 		
Peningkatan sarana dan prasarana infrastruktur	<ul style="list-style-type: none"> • Proses hulu - hilir lebih efisien • Daya saing yang meningkat 		
Peningkatan kapasitas SDM	<ul style="list-style-type: none"> • Kualitas SDM yang meningkat • Produksi meningkat • Produktivitas dan keuntungan meningkat 		
Kemudahan akses perijinan dan permodalan	<ul style="list-style-type: none"> • Jumlah pelaku dan skala usaha meningkat • Mendapat kepercayaan dari stakeholder 		
Penguatan kelembagaan	<ul style="list-style-type: none"> • Usaha lebih stabil dan risiko berusaha menurun 		
Standarisasi	<ul style="list-style-type: none"> • Prosesnya terstandar (GAP) CBIB, CPIB, HACCP, SKP • Food safety • Produk yang aman dan bermutu 		
Added value produk perikanan	<ul style="list-style-type: none"> • Harga lebih tinggi • Produk perikanan budidaya yang beragam 	<ul style="list-style-type: none"> • Pangsa pasar semakin luas • Tenaga kerja semakin banyak yang terserap • Pelaku usaha bekerja dengan bahagia • Iklim usaha lebih kondusif • Permintaan ikan meningkat 	
Kepastian hukum	<ul style="list-style-type: none"> • Usaha stabil • Konflik lebih sedikit • Terwujudnya tata kelola yang baik dan tidak tumpang tindih 		
Kolaborasi antar pemangku kepentingan	<ul style="list-style-type: none"> • Konflik lebih sedikit • Peluang pasar, modal, usaha riset lebih luas 	<ul style="list-style-type: none"> • Lebih banyak komoditas perikanan yang bisa dikembangkan • Banyak menghasilkan generasi pintar • Masyarakat lebih cerdas 	
Edukasi dan sosialisasi konsumen	<ul style="list-style-type: none"> • Angka konsumsi ikan meningkat • Jumlah stunting menurun • Wawasan masyarakat lebih terbuka 		

Inland Fishery



Report: Toward Sustainable Fisheries Food Systems in Indonesia

© 2024

Based on multistakeholders workshop “Aquatic, Marine, and Fisheries Management to Achieve Healthy, Equitable, and Resilient Food System Transformation in Indonesia” organized by the Ministry of National Development Planning/National Development Planning Agency (BAPPENAS) in collaboration with Food and Land Use (FOLU) Coalition, Yayasan Humanis dan Inovasi Sosial (Humanis) and CIFOR-ICRAF, in September 13–14, 2023, at Hotel Novotel Cikini, Jakarta.

