

The Contribution of United Nations Industrial Development Organization (UNIDO) in Sustainable Fisheries Development in Indonesia 2019-2023

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Article History:

Received: Nov 14, 2024

Revised: Nov 19, 2024

Accepted: Des 09, 2024

Published: Jan 02, 2025

Keywords: GQSP, Institutional Liberals, NQIS, SDGs, UNIDO.

Abstract

This type of research is qualitative research, using Liberal Institutional theory and the concept of SDGs. Data collection was conducted through desk research and secondary data techniques to obtain the necessary data. The Miles and Huberman model identifies three main processes in data analysis: data reduction, data presentation, and conclusion drawing. This research was conducted as an effort to find out the extent of UNIDO's contribution and implications in the development of the sustainable fisheries sector and towards sustainable development (SDGs) No. 14 in Indonesia in 2019-2023. This research provides academic benefits by enriching the literature on the role of international institutions in the development of sustainable fisheries sector. Practically, the results of this study serve as a guide for policy makers and fisheries industry players in improving quality and sustainability standards. The implementation of Indonesia's GQSP has been going well in all sectors, as a whole. Based on the targeted Key Performance Indicators (KPIs), GQSP has achieved 100% of 52 Output KPIs, 80% of 33 Outcome KPIs and 67.3% of 7 Impact KPIs. In its contribution to improving quality infrastructure and services, strengthening producers and value chains, and building a culture of quality, these aspects have a major contribution. This can be seen from the growth of Indonesian fishery product exports over the past five years (2017-2022). In 2017 Indonesia reached an export figure of 1.08 million tons worth USD 4.52 billion and to 1.22 million tons worth USD 6.24 billion in 2022. UNIDO through GQSP Indonesia has successfully improved the overall quality of Indonesia's fisheries industry. NQIS has brought significant positive impacts in various aspects of fisheries industry development.

I. INTRODUCTION

This research discusses the contribution of the United Nations Industrial Development Organization (UNIDO) in the development of a sustainable fisheries industry sector and realizing sustainable development SDGS no. 14 (conserve and sustainably use marine and oceanic resources for sustainable development) in Indonesia. Indonesia is a country where 2/3 of its territory is a water area, with a total area of 5.8 km², has a coastline length of about 81,000 km and an aggregate of 17,508 islands. In addition, Indonesia is the world's largest Marine Mega-Biodiversity country with approximately 8,500 species of fish or about 37% of the world's fish species in Indonesia, 55 species of seaweed, and 950 species of coral reef biota.¹ Therefore, Indonesia is a maritime country that is rich in marine flora and fauna. According to Alfred Thayer Mahan in his book entitled the Influence of Sea Power upon History, 1660-1783, a maritime state is a country utilizing the wealth of the sea as a means to achieve prosperity and glory. Similarly, the concept of maritime vision describes a way of thinking that focuses on efforts to achieve prosperity and success through the utilization of marine resources.² Therefore, the sea can be a strength in various aspects. Indonesia's geographical position at the crossroads of two oceans and two continents provides various advantages, including in economic terms, such as being a vital center in international trade.

The potential availability of fish is a very important factor, referring to data from the Food And Agriculture Organization (FAO) in 2018 being the highest record, with 179 million tons of fish availability for the entire world community. However, this figure decreased by 1% in 2019 and increased again in 2020 by around 0.2% or around 178 million tons. This imbalance is greatly influenced by the COVID-19 pandemic. The Asian continent is the largest contributor to fish availability with a percentage reaching 70% in 2020.³ The Ministry of Maritime Affairs and Fisheries (MMAF) estimated that fisheries production in Indonesia in 2022 reached 24.85 million tons, representing an increase of 13.63% compared to the previous year's production of 21.87 million tons.⁴ The rate of increase in fisheries in Indonesia far exceeds the rate of the world community. This is supported by changes and updates to the Republic of Indonesia Fisheries Management Area (WPP-RI). In an effort to achieve optimal and sustainable utilization in fisheries management that ensures the sustainability of fish resources and the environment throughout Indonesia, there has been a change in the number of WPP, from 9 WPP to 11 WPP based on the Regulation of the Minister of Maritime Affairs and Fisheries No. Per.01 / Men / 2009 and updated again based on the Regulation of the Minister of Maritime Affairs and Fisheries No.18 / PERMEN-KP / 2014 concerning

¹ Muhammad Resa et al., "Analisis Potensi Maritim Indonesia," 2016, 1–9.

² Mahan Tayer Alfred, *The Influence Of Sea Power Upon History 1660-1783* (Britania Raya: Cambridge University Press, 1889).

³ FAO, "The State Of World Fisheries And Aquaculture 2022," Food and Agriculture Organization of the United Nations, 2022, <https://www.fao.org/3/cc0461en/online/sofia/2022/world-fisheries-aquaculture-production.html>.

⁴ KKP, "Rilis Data Kelautan Dan Perikanan Triwulan 2022," Kementerian Kelautan Dan Perikanan Tahun 2022, 2022, 06\8.

Fisheries Management Areas of the Republic of Indonesia. With the high potential of the fisheries industry and accompanied by optimal management, it can be a driver of national economic growth.⁵

With its abundant resources, the fisheries sector cannot be underestimated. The high availability rate makes it an important resource for the fulfillment of people's livelihoods and has high potential as one of the prime movers of the national economy. This sector contributes significantly to the country's economy and provides livelihoods for millions of people. However, empirically it can be seen that with great potential, the development of the fisheries sector still receives less attention and tends to be positioned as a peripheral sector. This is due to the focus of natural resource-based development strategies on the agricultural and mining sectors. On the other hand, the emphasis on the development of the fisheries sector is on resource exploitation, which results in a decrease in the quality of environmental ecosystems and does not pay attention to the economic added value that can be obtained from the sector. Lack of technology as well as access to knowledge and labor skills are still major obstacles.⁶

A sustainable system in the fisheries sector is essential in order to maintain sustainable fisheries resources, protect the environment, and ensure long-term prosperity for the people who depend on this sector. In principle, a sustainable fisheries system is a combination of management and utilization while maintaining the sustainability of resources in the long term for the benefit of many people in a sustainable manner.⁷ This is what underlies the United Nations Industrial Development Organization (UNIDO) to give Indonesia the opportunity to become a partner country. With UNIDO Indonesia has a greater opportunity to optimize its marine resources.

The United Nations Industrial Development Organization (UNIDO) is a specialized agency of the United Nations (UN) established in 1966. The objective of UNIDO is to promote sustainable industrial development, including the development of industrial technology and the enhancement of productivity, with due regard to environmental and social aspects. UNIDO is based in Vienna, Austria, and has 170 member countries worldwide. It works with governments, the private sector and other international organizations to help developing countries improve their industrial capabilities, promote trade and investment, and strengthen institutional and human resource capacity. UNIDO's programs cover areas such as energy and environment, agro-industrial development, information and communication technology, and entrepreneurship and investment development. UNIDO also plays an important role in promoting technological innovation and development to help developing countries improve their industrial capabilities. UNIDO prioritizes its goals on 4 aspects namely;

⁵ Sjarief Widjaja Kadarusma et al., *Buku Besar Maritim Indonesia Seri 2 Sumber Daya Hayati Maritim*, ed. Sjarief Widjaja Kadarusman, vol. 11 (Jakarta: AMAFRAD PRESS, 2019).

⁶ Dody Yuli Putra, "Peran Sektor Perikanan Dalam Perekonomian Dan Penyerapan Tenaga Kerja Di Indonesia," *Jurnal Maritime Economy* 93, no. Peran sektor perikanan dan keterkaitan ke depan dan ke belakang (forward and backward linkage) dalam perekonomian Indonesia (2011): 1–93.

⁷ Widjaja Kadarusma et al., *Buku Besar Maritim Indonesia Seri 2 Sumber Daya Hayati Maritim*.

industrial technology, improving environmental quality, alleviating poverty and improving people's lives.⁸

The Global Quality and Standards Programme (GQSP), also known as Sustainable Market Access through Responsible Trading of Fish 2 (SMART-Fish2), is one of UNIDO's contributions to the development of Indonesia's sustainable fisheries sector oriented towards improving infrastructure and service quality, strengthening producers and value chains and building a culture of quality. The program is funded by Switzerland through Switzerland's State Secretariat of Economic Affairs (SOCA). UNIDO started SMART-Fish in 2009. SMART-Fish has a program which facilitating market access and trade improvement in Indonesia's three leading fisheries industries, namely tuna and skipjack, catfish and seaweed, both caught and cultured. SMART-Fish was then extended from 2019-2023 and turned into the Global Quality and Standards Program (GQSP). This was done due to the effectiveness of the program that was able to increase competitiveness and reduce the production power of the national fisheries sector. As well as actively contributing to opening up market share both domestically and internationally and providing more benefits for fish farmers. The SMART-Fish Phase 2 national project under the Global Quality and Standards Program was designed based on the specific needs of Indonesian fisheries and aquaculture, following the outline of the GQSP program as one of its country projects. SMART-Fish Phase 2 intends to contribute to better market access for Indonesia's aquaculture through enhancing Indonesia's capacity to meet internationally recognized quality standards, and intends to create significant impact by contributing to improved quality recognition and compliance of Indonesian fishery products to the standards and requirements of international markets and buyers.⁹

In addition to contributing through its programs, UNIDO as one of the international organizations under the UN has an important role in supporting the achievement of the Sustainable Development Goals. UNIDO is committed to making a significant contribution to the achievement of the SDGs, including SDG No. 14 (conserve and sustainably use the oceans, seas and marine resources for sustainable development). Through the Global Quality and Standards Program (GQSP), UNIDO is committed to strengthening Indonesia's fisheries sector, by integrating sustainable approaches in the management of fisheries resources. The program focuses on improving infrastructure and quality services, strengthening producers and value chains and raising awareness. With a holistic and collaborative approach, UNIDO through the GQSP program aims at increasing the capacity of the fisheries sector, maintaining the sustainability of fisheries resources, and creating a significant contribution to the achievement of SDGs No. 14 globally.¹⁰

The relationship between UNIDO and Indonesia has a connection in terms of its interests, where UNIDO needs objects as the implementation of its program and

⁸ United Nations Industrial Development Organization, "UNIDO in Brief," [unido.org](https://www.unido.org/about-us/unido-brief), accessed March 23, 2023, <https://www.unido.org/about-us/unido-brief>.

⁹ GQSP Indonesia, "About Us," Programme, Global Quality Standarads, 2024, <https://gqspindonesia.org/page/about-us>.

¹⁰ Widjaja Kadarusma et al., *Buku Besar Maritim Indonesia Seri 2 Sumber Daya Hayati Maritim*.

Indonesia needs institutions that can emphasize on improving technology to optimize marine resources and human resources. Looking at the condition of Indonesia's fishing industry and the program presented, these two things become mutually sustainable aspects. Optimizing marine resources can have a positive impact on the Indonesian economy. It is possible that the fisheries industry becomes one of the pillars of Indonesia's economic development. UNIDO as a global organization handling industrial activities has an important position in this discussion. Likewise UNIDO also has goals that are attached to the balance between industry and the sustainability of nature. In this case, industrial activities must continue without damaging nature. UNIDO not only helps Indonesia in technology and human capital but also contributes to the promotion of fisheries products in the international market.

UNIDO as an international institution is responsible for designing and implementing technical cooperation to promote sustainable industrial development in its member countries, especially in developing countries and countries with economies in transition. Given the vastness of Indonesia's maritime territory, the fisheries sector is one of the main livelihoods of the Indonesian people, especially people who are close to the sea area. In addition, its maritime wealth has the potential to make the fisheries sector a driving force for national economic growth. The abundant and more than sufficient supply of fish, with good quality and in demand by the global community, creates a big opportunity and challenge for Indonesia. An opportunity to build the national economy and a challenge to build a sustainable fisheries system. UNIDO can be the answer for Indonesia in optimizing and protecting its marine wealth.

II. METHODOLOGY

This research is an effort to be able to analyze the extent of the contribution of the United Nations Industrial Development Organization (UNIDO) in developing the sustainable fisheries industry sector in Indonesia in 2019-2023, in this study the author uses Liberal Institutional Theory as a paring knife and the concept of SDG No. 14. This research uses qualitative methods. In this study, the authors used library research and secondary data collection techniques such as scientific journals, books, websites, E-books, newspapers and collected data from various kinds of official documents and others to obtain the necessary data. Researchers used the Miles and Huberman Model data analysis technique which identifies three main processes in data analysis, namely data reduction, data presentation, and conclusion drawing.

III. RESULT AND DISCUSSION

AN OVERVIEW OF THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO)

The United Nations Industrial Development Organization (UNIDO) is a specialized agency of the United Nations with a primary mandate to promote, dynamize and accelerate industrial development. This mandate is reflected in Sustainable Development Goals (SDGs) No. 9 "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation" but in its implementation UNIDO activities contribute to all SDGs. UNIDO has a Vision of "A world without poverty and hunger, where industry drives a low-emission economy, improves living standards and preserves a livable environment for current and future generations, leaving no one behind". Until 2023 UNIDO has provided its support to 172 member states through four mandated functions: 1). Technical cooperation. 2). Action-oriented research and policy advisory services. 3). Activities related to normative standards. 4). Fostering partnerships for knowledge and technology transfer. UNIDO's programs concentrate on three main priority areas namely: supporting sustainable supply chains, limiting climate breakdown and ending hunger.¹¹

By 2023 UNIDO will have implemented its projects and programs in approximately 120 Member States. UNIDO implemented 636 portfolio projects with a total value of US\$1,350 million. To enhance the impact of its technical cooperation, as well as promote key issues related to industrial development, UNIDO collaborates with a wide range of development partners. UNIDO remains committed to strengthening the United Nations development system and continues to support reforms for more cohesive collaboration among development partners.¹²



Figure SEQ Gambar * ARABIC 1. Top Funding Partners for UNIDO Programmes and Project in 2022

¹¹ UNIDO, "About Us," United Nations Industrial Development Organization, 2023, <https://www.unido.org/about-us/who-we-are>.

¹² UNIDO, "Partnerships," United Nations Industrial Development Organization, 2023, <https://www.unido.org/about-us/partnerships>.



DYNAMICS OF INDONESIA'S SUSTAINABLE FISHERIES INDUSTRY DEVELOPMENT

The fishing industry plays an important role in people's lives. Not only to be a source of daily food, fish, which is a superior commodity, is one of the driving forces of the national economy, increasing exports and creating jobs, especially for people living in coastal areas. It can be concluded that fish resources will be a necessity both now and in the future. The principle of sustainability is needed in the implementation of the fishing industry to ensure the sustainability and fulfillment of the needs of fish resources both domestically and abroad and for the next generation. As a member of the United Nations (UN), Indonesia is required to make an active contribution in realizing the 2030 Sustainable Development Goals (SDGs) which cover various aspects of sustainability (economic, social, environmental) including the fisheries sector (capture, cultivation) and the use of marine resources.¹³

As a maritime country, Indonesia has provided support through the making of policies in regulating the use of fishing gear and sustainable fishing and aquaculture practices. However, it cannot be denied that there are still many problems related to the development of a sustainable fishing industry, which is assumed to be due to the lack of government's role in providing supervision, education and socialization of the concept. On the other hand, there are many people who depend on fish production, which prioritizes economic aspects and pays less attention to the environment. In this case, the Indonesian government has established a sustainable fisheries development policy through Law of the Republic of Indonesia (UURI) Number 45 of 2009 concerning fisheries article 6 paragraph 1. This law is a reference for every fisheries production sector to carry out these principles.

SMART-Fish is a program funded by the Swiss Secretariat for Economic Affairs (SECO) and implemented by UNIDO. The program aims to strengthen selected value chains in Indonesia's fisheries export sector.¹⁴ Through the development of sustainability certification schemes for targeted export products/value chains. This program will encourage the sustainable use of maritime resources and thus indirectly contribute to the preservation of biodiversity.¹⁵ Through the SMART-Fish program, the United Nations Industrial Development (UNIDO) has contributed to 6 aspects, namely:

1. Policymaking favorable to value chain development and facilitating entry into global markets.
2. Strengthening the competitiveness of value chain actors from upstream (farmers) to downstream (processors) through better product quality, increased productivity, resource efficiency and cleaner production.
3. Improvement of educational programs at the Jakarta Fisheries University (STP) through curriculum improvement on aspects of productivity, innovation and sustainability and strengthening linkages with industry.

¹³ Dessy Natalia, op.cit., hlm. 9-10.

¹⁴ Rifdah Hanun A, op.cit., hlm. 3.

¹⁵ United Nations Industrial Development, "Project Document for Increasing Trade Capacities of Selected Value Chains within the Fisheries Sector in Indonesia," 2012.

- ## SMART-FISH INDONESIA IN NUMBERS
- | | | | |
|--|--|--|---|
| <p>3 States in the first year of pilot</p> <p>12 Countries participating</p> <p>37 OFFICES</p> <p>16 PROVINCES</p> <p>13 Companies in the first year of pilot</p> | <p>USD 36 million
TOTAL IN INVESTMENT</p> <ul style="list-style-type: none"> ▶ Private business bank is the World Bank ▶ Partner for company bank: Bank Mandiri and Bank Indonesia ▶ 100% loan for company bank ▶ Guaranteed by PTG (Garansi PTG) ▶ Guaranteed by PTG (Garansi PTG) | <p>USD 1.66 million
DONORS FOR SMART-FISH INDONESIA</p> <ul style="list-style-type: none"> ▶ US\$ 937,000 from USAID and government sector (donor in SMART-FISH APPROACH) ▶ US\$ 500,000 / 100% from private sector (in Corporate Finance from PTG) ▶ US\$ 897,000 lending / year (from credit, water and equipment financing from 10 national processing groups) | <p>USD 8 million
TOTAL INVESTMENT</p> <ul style="list-style-type: none"> ▶ 100% equity from private sector (donor in SMART-FISH APPROACH) ▶ 100% equity from private sector (donor in SMART-FISH APPROACH) ▶ 100% equity from private sector (donor in SMART-FISH APPROACH) |
| <p>5'939 participants</p> <ul style="list-style-type: none"> ▶ 1,453 currently holding small activities (only 10% of the total number of participants, other activities are not specific, such as fishing, etc.) ▶ 3'994 participants from private sector ▶ 1'453 participants from government sector | <p>USD 11.8 million
INVESTMENT</p> <ul style="list-style-type: none"> ▶ Processing: US\$ 283,000 ▶ Production: US\$ 283,000 ▶ Processing: US\$ 283,000 ▶ Production: US\$ 283,000 ▶ Processing: US\$ 283,000 ▶ Production: US\$ 283,000 | <p>22 digital platforms</p> <ul style="list-style-type: none"> ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) | <p>USD 1.5 million
TOTAL INVESTMENT FROM PRIVATE SECTOR</p> <ul style="list-style-type: none"> ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) |
| <p>2'134 farmers / extension officers (total)</p> <ul style="list-style-type: none"> ▶ 1'067 extension officers in 10 districts, 2 extension officers ▶ 1'067 extension officers in 10 districts, 2 extension officers ▶ 1'067 extension officers in 10 districts, 2 extension officers | <p>USD 2.3 million
TOTAL INVESTMENT FROM GOVERNMENT SECTOR</p> <ul style="list-style-type: none"> ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) | <p>USD 9.05 million
TOTAL INVESTMENT FROM PRIVATE SECTOR</p> <ul style="list-style-type: none"> ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) | <p>USD 1.5 million
TOTAL INVESTMENT FROM PRIVATE SECTOR</p> <ul style="list-style-type: none"> ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) ▶ 100% from private sector (donor in SMART-FISH APPROACH) |
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8

SMART-Fish Indonesia's sustainable fisheries industry has gained knowledge and technology transfer and experienced significant quality improvements.¹⁷

The Global Quality Standards Programme (GQSP) is a large-scale program that aims to promote the systematic development of trade along specific value chains by strengthening quality infrastructure and service providers, enhancing the compliance capacity of private sector actors, especially Small and Medium Enterprises (SMEs) and creating a culture of quality among all stakeholders. The program is located in eleven countries, including Indonesia. It supports 14 value chains on five continents around the world. GQSP is funded by the Swiss Confederation through the Swiss State Secretariat for Economic Affairs (SECO) and implemented by the United Nations Industrial development Organization (UNIDO).¹⁸ In its implementation in Indonesia, GQSP collaborates with the Ministry of Marine Affairs and Fisheries (KKP) and the National Standardization Agency (BSN). GQSP was launched in July 2019 and is an extension of the previous program SMART-Fish Indonesia (2014-2019). The main objective of the program is to strengthen the quality and standards compliance capacity of Small and Medium Enterprises (SMEs) to improve market access both domestically and internationally. GQSP supports countries to align the demand and supply of quality services needed to prove and verify product quality through its three contributions namely: 1). Enhancing quality infrastructures, 2). Strengthening SMEs compliance to standards and 3). Quality for culture.¹⁹

SHIFTING SUSTAINABLE MARKET ACCESS THROUGH RESPONSIBLE TRADING OF FISH (SMART-FISH) TO GLOBAL QUALITY STANDARDS PROGRAMME (GQSP)

The Sustainable Market Access through Responsible Trading of Fish (SMART-Fish) Program 2014-2019 followed by the Global Quality Standards Programme (GQSP) 2019-2023 are the same two programs under UNIDO with the same donor State Secretariat for Economic Affairs (SECO) but have different focuses. GQSP identifies quality-related challenges and conducts targeted interventions at each value chain, thereby improving compliance with international market requirements and ultimately helping countries to engage in global trade.²⁰

Indonesia as one of the countries that is developing its fisheries industry sector has the same goals and priorities as UNIDO, which is oriented towards the availability of sustainable supply chains, limiting climate damage and reducing greenhouse gas emissions and ending hunger. Not without obstacles, in addition to meeting the three

¹⁷ United Nations Industrial Development, "Annual Report 2019," vol. 1 (Vienna, 2020).

¹⁸ UNIDO, "Global Quality and Standards Programme Active in 11 Countries Worldwide," UNIDO knowledge hub, 2020, <https://hub.unido.org/news/global-quality-and-standards-programme-active-11-countries-worldwide>.

¹⁹ GQSP Indonesia, "About Us."

²⁰ UNIDO, "Global Quality and Standards Programme (GQSP) - A Truly Global Initiative," UNIDO knowledge hub, 2024, <https://hub.unido.org/news/global-quality-and-standards-programme-gqsp-truly-global-initiative>.

priorities above, Indonesian fisheries industry products must also meet international quality standards in order to enter and take part in the global market. Therefore, UNIDO through the Global Quality Standards Programme (GQSP) prioritizes the improvement of the National Quality Infrastructure System (NQIS). NQIS is a system that aims to improve the quality of products and services that are qualified and safe for consumption and use at the global level. UNIDO believes that building a quality infrastructure system (QIS) is one of the most practical steps that developing countries can take. QIS can have a positive impact on many areas including trade competitiveness, food safety, public health, efficient use of natural and human resources, environment and climate change, as well as improving the quality of infrastructure.²¹

The National Quality Infrastructure System is a system (regime) created by GQSP Indonesia that serves to provide effective technical regulation with the necessary conformity assessment capabilities. In accordance with applicable international trade rules. In this regard Standards, Quality Assurance, Accreditation and Metrology (SQAM) plays an important role in enhancing the global competitiveness of economic endeavors. To facilitate trade at a global level, it is necessary to establish efficient standards, testing, certification and accreditation capacities/mechanisms that have been established by the World Trade Organization Sanitary and Phyto-Sanitary Measures (WTO SPS), Technical Barriers to Trade (TBT) and the Trade Facilitation (WTO TFA) as well as gaining international recognition. Conformity assessment means evaluating and confirming aspects such as quality, reliability, safety, economic efficiency and effectiveness, as defined in standards and regulations. To prove compliance with quality standards and adequate quality infrastructure, it is important for the Indonesian fisheries industry to face the challenges and benefit from the changing global landscape. Standardization, for example, not only contributes to international trade but also to the basic infrastructure that drives sustainability and good regulatory capabilities. Standards also drive innovation, as they bridge the gap between innovation and the market. Adequate Quality Infrastructure (QI) has the potential to improve the quality of.²²



Figure SEQ Gambar * ARABIC 3.

The Quality Infrastructure for Sustainable Development Index (QI4SD) was developed by UNIDO in collaboration with partner organization International Network

²¹ UNIDO, Global Quality Standards Programme GQSP (Austria, 2020), <https://www.youtube.com/watch?v=ZkVjJZsVay0&t=125s>.

²² UNIDO, "Quality Infrastructure Building Trust For Trade," United Nations Industrial Development Organization (Vienna, n.d.).

on Quality Infrastructure (INetQI). The Index is a Global Knowledge tool of the Global Quality and Standards Programme (GQSP), funded by the Swiss State Secretariat for Economic Affairs (SECO). The QI4SD Index is a tool to assess the overall state of development of a country's QI readiness in support of the Sustainable Development Goals (SDGs). Information on the suitability of QIs to meet sustainable development needs will be a useful input to support national policy processes and implementation plans in achieving the SDGs, as well as the coordination of technical cooperation programs, not only by UNIDO but also by implementing partners and other development agencies around the world.

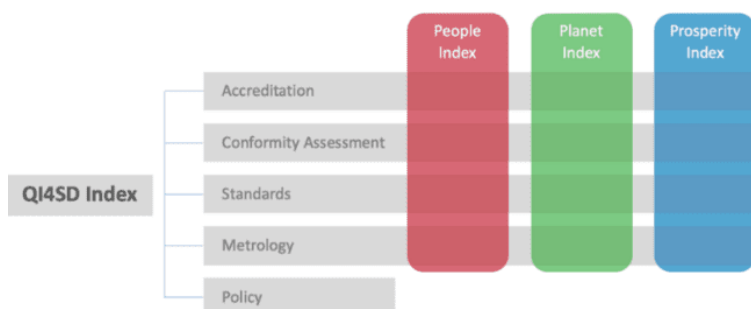


Figure SEQ Gambar * ARABIC 6. Five Dimention

The QI4SD Index aims to measure QI by using five indicators namely (Standards, Accreditation, Conformity Assessment, Market Surveillance, Metrology and Policy). In addition, the QI4SD Index provides a score for each of the three main pillars of sustainable development: People, Planet and Prosperity. These scores aim to measure a country's contribution and readiness in addressing sustainable development in these pillars.²³

CONTRIBUTION OF UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO) IN DEVELOPMENT OF SUSTAINABLE FISHING SECTOR AND ITS CONTRIBUTION TO SDGs NO. 14 THROUGH THE GLOBAL QUALITY AND STANDARDS PROGRAMME (GQSP) IN INDONESIA

Robert Kohane said, Institutional Liberals have a view that institutions and regulations can facilitate beneficial cooperation within and between countries. The functions of international institutions according to Kohane include providing information related to the goals and objectives of the state, setting standards and identifying issues that can unite the interests of all parties or provide information regarding what actions will be taken to achieve the expected goals. In this regard,

²³ QI4SD, "About QI4SD Index," [hub.unido.org](https://hub.unido.org/qi4sd/about), 2022, <https://hub.unido.org/qi4sd/about>.

UNIDO as an international institution has played an effective role in facilitating the development and implementation of global standards in Indonesia's fisheries sector. Indonesia's GQSP implementation was well underway in all sectors in May 2023, across the board. Based on the targeted Key Performance Indicators (KPIs), GQSP has achieved 100% of 52 Output KPIs, 80% of 33 Outcome KPIs and 67.3% of 7 Impact KPIs.²⁴

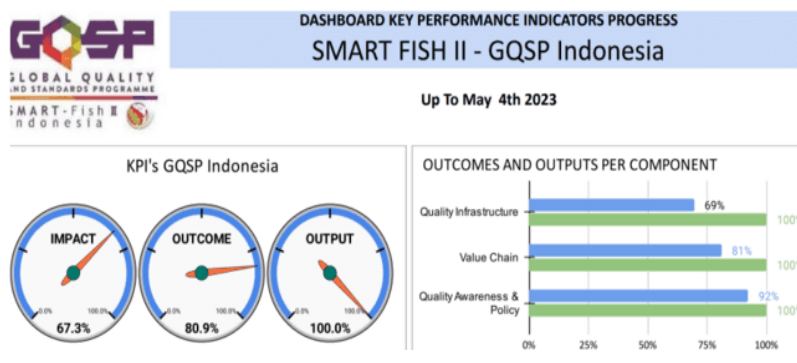


Figure SEQ Gambar * ARABIC 7. Key Performance

The successful implementation of Indonesia's GQSP reflects the effectiveness of international institutions. The successful achievement of high KPIs in Output, Outcome and Impact shows that country cooperation through international institutions can generate significant benefits. Improving quality infrastructure and services, strengthening producers and value chains, and building a culture of quality, affect major contributions. This can be seen from the growth of Indonesia's fishery product exports over the past five years (2017-2022). In 2017 Indonesia reached an export figure of 1.08 million tons worth US\$4.52 billion and to 1.22 million tons worth US\$6.24 billion in 2022.²⁵ This is in line with institutional liberal principles that believe that international cooperation can produce better results than if states act alone.

Within the framework of Liberal Institutional theory, international institutions such as the United Nations Industrial Development Organization (UNIDO) play an important role in developing a sustainable fisheries industry sector in Indonesia. This theory underlines that international cooperation and the role of global institutions can produce greater benefits than unilateral actions by states. UNIDO, through its Global Quality and Standards Programme (GQSP) Indonesia, demonstrates how international institutions can function as allocators, arbitrators, and representatives, all of which contribute to the development of a sustainable fisheries industry and Indonesia's economic stability. As an allocator UNIDO through GQSP Indonesia has allocated scarce resources to Indonesia to support the development of a sustainable fisheries industry. UNIDO's largest resource allocation to Indonesia was the implementation of the

²⁴ UNIDO, "Project Document Global Quality and Standards Programme (GQSP) Indonesia," United Nations Industrial Development Organization (Indonesia, 2023).

²⁵ Ibid.

National Quality Infrastructure System (NQIS) This was realized through the improvement of infrastructure from upstream to downstream, provision of certification and training and access to international markets, all of which contributed to the achievement of targeted KPIs and increased export value. As an allocator, UNIDO has demonstrated its ability to allocate scarce resources to support the development of a sustainable fisheries industry in Indonesia. The implementation of the National Quality Infrastructure System (NQIS) is one clear example of how UNIDO allocates resources in the form of infrastructure improvement, provision of certification, training, as well as access to international markets. This is in accordance with the Institutional Liberal principle which emphasizes on efficient and effective distribution of resources through international cooperation. Through this resource allocation, UNIDO has successfully improved the quality and capacity of Indonesia's fisheries industry, which is reflected in the achievement of targeted KPIs and increased export value from 2017 to 2022.

As a UNIDO arbitrator through GQSP Indonesia has helped solve various problems and challenges faced in the fisheries industry. The quality of fisheries products is the biggest problem for the Indonesian fisheries industry, this is the main problem faced by Indonesia. UNIDO through GQSP Indonesia with its NQIS implementation has successfully improved and brought Indonesian fishery products in the global market. Throughout 2019-2023, Indonesian fishery products faced two major problems, namely the COVID-19 pandemic and the rejection of fishery products in the global market. By cooperating with UNIDO as a partner and implementing GQSP, Indonesia has successfully faced both problems. UNIDO has succeeded in building awareness for fisheries industry actors. By providing training and certification and providing a framework, UNIDO wants to ensure that all parties involved in the sustainable fisheries development process can work together effectively, thereby achieving 100% output KPIs and improving economic stability. As an arbitrator, UNIDO helps resolve various issues and challenges in Indonesia's fisheries industry. In the face of product quality issues and the challenges of the COVID-19 pandemic, UNIDO has provided training, certification and built a strong framework to ensure the quality of Indonesia's fishery products are in line with global standards. UNIDO's role as an arbitrator is in accordance with the Liberal Institutional theory that considers international institutions as mechanisms to resolve disputes and problems faced by member states. With UNIDO in place, Indonesia's fisheries industry is able to overcome these obstacles and achieve greater economic stability.

As a representative in ensuring Indonesian fisheries products comply with and maintain global quality standards, through GQSP, UNIDO provides one of its main focuses on quality development and awareness. In addition, UNIDO serves as a representative by ensuring compliance with quality standards and sustainable practices. UNIDO helps Indonesia strengthen its position in the global market and ensures that increased fisheries exports not only increase GDP but also support the long-term goal of SDGs No. 14 on life underwater. As a representative, UNIDO ensures that Indonesia's fisheries products comply with global quality standards and sustainable practices. This involves building awareness of the importance of quality and sustainability, as well as helping Indonesia strengthen its position in the global market. This representative role

reflects the Institutional Liberal principle that emphasizes the importance of adherence to international norms and standards to achieve common goals. By ensuring compliance with such standards, UNIDO not only helps increase Indonesia's GDP through fisheries exports but also supports the achievement of SDGs No. 14 on life underwater.

Through the application of the three traits of international institutions in Liberal Institutional theory, UNIDO has played a significant role in the development of a sustainable fishing industry in Indonesia. Resource allocation, problem solving, and representation of compliance with global standards demonstrate how international institutions can support economic stability and environmental sustainability. This cooperation not only improves the quality of Indonesia's fishing industry but also contributes to the long-term goals of global sustainability, particularly SDGs No. 14. This reinforces the argument that international cooperation through global institutions can generate greater benefits for member states than unilateral action. Indonesia's GQSP is a clear example of how Institutional Liberal theory can be applied in practice. Through international cooperation and assistance from international institutions such as UNIDO, countries can achieve their goals and face global challenges more effectively. This shows that Liberal Institutional theory has significant relevance to this case study.

In order to realize SDGs No. 14, Indonesia's GQSP KPI targets show progress in various sectors, which have a positive impact and contribute to the protection of marine ecosystems and sustainable management of marine resources. For example, improvements in environmental standards and natural resource management under the Outcome KPI can help reduce pollution and improve the health of marine ecosystems. In addition, significant achievement of the Impact KPI can signal that the policies and programs implemented have a long-term positive effect on environmental sustainability, which is a key aspect of achieving SDGs No. 14. Therefore, the successful implementation of Indonesia's GQSP can positively contribute to the achievement of SDGs No. 14 through improved environmental quality and sustainability of marine ecosystems.

In developing Indonesia's sustainable fisheries industry sector, the relationship between UNIDO as an international institution and Indonesia as a partner is very close and provides mutual benefits. In Islam, this is known as ta'awun which means "helping each other". In this case, helping each other regardless of race, ethnicity, nation and religion, as long as it is within the scope of goodness and benefit, not within the scope of evil and damage on earth, then humans are encouraged to help each other and work together. The naqli evidence regarding ta'awun is contained in a fragment of Surah Al-Maidah verse 5:2.

وَتَعَاوَنُوا عَلَى الْبِرِّ وَالتَّقْوَىٰ وَلَا تَعَاوَنُوا عَلَى الْإِثْمِ وَالْعُدْوَانِ وَاتَّقُوا اللَّهَ إِنَّ اللَّهَ شَدِيدُ
الْعِقَابِ

Meaning: "Help each other in (doing) righteousness and piety, and do not help each other in sin and enmity. Fear Allah, surely Allah is very severe in His punishment" (QS. Al-Ma'idah 5: verse 2).²⁶

The verse explains that helping in worship is a factor that strengthens relationships in religion, from helping each other will bring a sense of belonging to each other which leads to a strong sense of brotherhood. This is very rational because humans are social creatures who definitely need other people to fulfill their needs. Islam directs the purpose and form of helping in goodness and usefulness that is still in the corridor of sharia and in piety.

The concept of ta'awun has become a concept that is often found and practiced at the international level. It is motivated by overlapping needs and problems. At this time the world's countries are associated with the global order and will continue to develop and change along with the rapid evolution of the industry that occurs. This is the case with the relationship between the United Nations Industrial Development Organization (UNIDO) and Indonesia. Significantly, we can see that UNIDO as an international institution becomes a helper for Indonesia by intermediating GQSP Indonesia as its representative to improve Indonesia's marine resources sustainably and increase its fishery products in the global market. But on the other hand, Indonesia becomes a helper for UNIDO to implement its duties and knowledge. Of course, this will increase the trust of various stakeholders at the global level that UNIDO as an institution engaged in the industrial sector is vital for improving the quality and management of a country's industry.

The relationship between UNIDO and Indonesia is embedded in the philosophy of ta'awun, which is mutual assistance in goodness. UNIDO has the quality, capability and knowledge in the field of industry needed by developing countries and Indonesia has a fishing industry that is still not qualified but on the other hand has abundant marine resources. So Indonesia is a suitable partner for UNIDO in implementing everything it has and contributing to the improvement of the Indonesian fishing industry.

ENHANCING QUALITY INFRASTRUCTURE AND SERVICE

In improving the quality infrastructure and services of Indonesia's sustainable fisheries industry, through GQSP Indonesia UNIDO has fulfilled the three characteristics of international institutions (allocator, arbitrator and representative). As an allocator, UNIDO through GQSP Indonesia has implemented the National Quality Infrastructure System (NQIS) as a contribution and main actor in improving Indonesia's sustainable fisheries industry. Through NQIS, Indonesia's fishery products have increased in line with the objectives of NQIS, which is to improve the fisheries industry in all its aspects. On the other hand, through UNIDO, SECO has provided assistance funds for the realization of this GQSP. As an allocator, UNIDO through GQSP Indonesia has implemented NQIS which has the function to provide technical regulations effectively with the necessary standard conformity assessment capabilities.

²⁶ Al-Quran, 5 (Al-Maidah): 2

The NQIS is a major contribution in improving the sustainable fisheries industry in Indonesia. By allocating scarce resources and grants from the Swiss Secretariat for Economic Affairs (SECO), UNIDO has ensured that Indonesia's fishery products have significantly improved in quality. Liberal Institutional Theory emphasizes the importance of resource distribution through international cooperation to achieve common goals. The implementation of the NQIS reflects this principle by improving the quality of infrastructure, certification, and access to international markets.

As an arbitrator, UNIDO through GQSP Indonesia has helped Indonesia resolve its problems and challenges including product quality issues, compliance with international standards, and fulfillment of complex regulations. Therefore, to solve these problems UNIDO through GQSP has made improvements in quality infrastructure and services through regulations and quality standard certification. The milestones achieved by UNIDO through GQSP are: 40 new/revised SNIs (24 SNIs for aquaculture and 16 SNIs for food and non-food fishery products). 3 IndoGAP CABs/LSPs accredited to ISO/IEC 17065 by KAN. 5 farmers received IndoGAP certificates (part of the accreditation assessment process). 68 fish farmers (hatchery and grow-out) applied for IndoGAP certification. 480 quality supervisors, quality inspectors and central and regional auditors) were trained and certified. 3 laboratories for producing reference materials have been established and 1 laboratory (BUSKIPM) has applied for accreditation and is in the process of ISO 17034 accreditation. 2 laboratories for conducting proficiency tests (PTP) have been established (documents prepared and ready for accreditation). BBP BAT Sukabumi has applied for accreditation. TUV Nord is in the process of preparing documents. BSN's business plan and roadmap for the metrology SNSU have been prepared. To support value chain actors to comply with standards.²⁷ As an arbitrator, UNIDO through GQSP Indonesia helps resolve various issues and challenges faced by the Indonesian fisheries industry, including product quality issues, compliance with international standards, and complex regulations. UNIDO, through the improvement of quality infrastructure and services as well as regulation and certification of quality standards, creates a conducive environment for trade and export of fishery products. This is in accordance with the Institutional Liberal theory that considers international institutions as mechanisms to resolve disputes and problems faced by member states. With UNIDO in place, Indonesia's fisheries industry is able to overcome these obstacles and achieve greater economic stability.

As UNIDO's representative through GQSP Indonesia acts as a representative of the international community in ensuring Indonesia complies with agreed international agreements and standards. By facilitating the implementation of global policies and standards, UNIDO helps Indonesia strengthen its position in the international market and ensure compliance with sustainable global norms. As a representative, UNIDO through GQSP Indonesia ensures that Indonesian fisheries products comply with agreed international agreements and standards. By facilitating the implementation of global policies and standards, UNIDO helps Indonesia strengthen its position in the international market and ensure compliance with sustainable global norms. This

²⁷ UNIDO, "Project Document Global Quality and Standards Programme (GQSP) Indonesia."

representative role reflects the Institutional Liberal principle that emphasizes the importance of adherence to international norms and standards to achieve common goals. By ensuring compliance with such standards, UNIDO not only helps increase Indonesia's Gross Domestic Product (GDP) through fisheries exports but also supports the achievement of long-term global sustainability goals.

Through the lens of Institutional Liberalism, SNI needs to create trust, ensure product quality and facilitate SNI in helping to create trust, ensure product quality, and facilitate international trade. The development of the Indonesian fisheries industry, both aquaculture and products, the Indonesian National Standard (SNI) has an important foundation. SNI is not only a technical regulation, but also an instrument strengthening cooperation and advancing the fisheries sector globally. SNI has a central role as a foundation which facilitates cooperation between fisheries industry players. Through SNI, Indonesia's fisheries industry has built trust between countries and industry players. It is based on the adoption of a uniform standard. Thus, the parties involved can be confident that the products produced meet the set quality. By ensuring that fishery products meet established quality standards, consumers can be confident that the fishery products they purchase are safe and meet their expectations. In addition, the adoption of SNI can facilitate international trade. This can be seen from Indonesian fishery products being recognized by the global market as well as reducing barriers and expanding market access.

Institutional Liberals argue that international institutions and agencies can strengthen cooperation between countries. This is implemented through the accreditation process conducted by the National Accreditation Committee (KAN) and the provision of IndoGAP certificates to farmers. Accreditation and certification help ensure compliance with standards and improve product quality. It can be elaborated that KAN is the body responsible for accrediting institutions and organizations that conduct assessments of products, services and management systems. In this case, the accreditation process is an aspect to ensure that the institution meets international standards and has the necessary competencies. The IndoGAP accreditation shows that fish farmers have met the requirements in implementing good and standardized aquaculture. Awarding IndoGAP certificates to farmers signifies that they have complied with sustainable aquaculture practices and meet quality standards. These certificates help build trust among countries and facilitate trade in fishery products. Accreditation and certification have a positive impact on improving product quality. In this case, accreditation and certification ensure that the products produced meet the set standards. Thus, product quality improves and consumers can be assured that the products they buy are safe and in line with expectations. With this process, institutions and agencies play an active role in ensuring compliance with standards and strengthening cooperation among countries.

Institutional Liberalism underlines that the establishment of trust between countries and industry players is essential to sustain cooperation. GQSP Indonesia has conducted training and certification for quality inspectors, quality supervisors, and auditors at the central and local levels, which plays a strategic role in strengthening individual capabilities. The training provided to quality inspectors, quality supervisors,

and auditors helps improve their understanding of assessment standards and procedures. Through enhanced capabilities these individuals gain deeper knowledge and can be more effective in ensuring uniformity in quality assessment. A key role for certification is to ensure that these professionals have competencies that comply with international standards. As such, product quality assessments become more consistent and reliable. This uniformity is important to ensure that the products being evaluated meet the same standards in different locations. When individuals involved in quality assessment have recognized certifications, it strengthens trust among the parties involved. This trust is a driver of cross-border cooperation and facilitates product trade. Thus, training and certification not only benefit individuals, but also contribute to a more efficient and reliable system for product quality assessment.

UNIDO through GQSP Indonesia with its NQIS has been effective through the establishment of laboratories to produce reference materials and the organization of proficiency tests which have a major role in ensuring the validity and accuracy of measurements. Laboratories that produce reference materials act as reference standards. In this case, reference materials are used to verify and calibrate measurement equipment. With reliable reference materials, measurement results can be compared objectively and accurately. Conducting a proficiency test involves laboratory testing by an external party. The laboratory is tested by measuring a predetermined reference material. The test results are compared with the actual values to evaluate the accuracy and reliability of the laboratory. This process helps ensure that the laboratory meets international standards. The process of laboratory accreditation based on the ISO 17034 standard demonstrates a commitment to meeting precision and reliability requirements. This accreditation is granted by an authoritative body and ensures that the laboratory adheres to best practices in producing reference materials. Overall, UNIDO's role through GQSP Indonesia as an international institution in ensuring measurement validity and reliability of test results is key to supporting cross-border cooperation and ensuring consistent product quality.

In the Liberal Institutional framework, an institution has one of the functions where the institution provides information regarding what actions are taken to achieve the expected goals. This function is clearly implemented through the creation of a business plan and roadmap prepared together with SNSU kemetrologian (metrology). The business plan describes the institution's vision, mission and goals in measurement and metrology. Formulating a clear plan, the institution can allocate resources efficiently and focus on achieving the desired results. A roadmap shows the concrete steps employed to achieve the goals. As a result, the SNSU metrology roadmap identifies priorities, stages of implementation and evaluation of progress. The roadmap helps ensure continuity and consistency in the development of metrology. The business plan and roadmap involve the participation of various stakeholders. Involving experts, industry, and related institutions, the institution can ensure that the strategic steps taken reflect common needs and strengthen cross-sector cooperation. With the business plan and roadmap, the institution assists the development of a measurement system that is reliable, accurate, and relevant to the needs of society and industry.

These achievements show that UNIDO through GQSP Indonesia has improved the standards and capacity of Indonesian fishery products to compete in the global

market. In addition, UNIDO has succeeded in raising the awareness of industry players on the importance of compliance with quality standards. UNIDO has helped build human resource capacity in the fisheries sector. These achievements not only enhance product quality, but also increase the competitiveness of Indonesian fisheries products in the global market. This improvement in the quality of infrastructure and services can be an effort to create a conducive business environment and increase confidence in Indonesian fishery products in the international market.

The National Quality Infrastructure System (NQIS) initiated by UNIDO and implemented by GQSP Indonesia in collaboration with KKP and BSN is UNIDO's biggest contribution to the sustainable fisheries industry in Indonesia. NQIS has succeeded in sharpening all aspects of the Indonesian fisheries industry while taking into account the sustainability of the marine environment and ecosystem. This proves that UNIDO through GQSP is able to provide all their resources and see the biggest problems of the fishing industry and take the right steps in overcoming these problems. The target of an international institution achieved, (the institution) becomes a platform or media for a country to face challenges and take solutions that the country has. Thus, Institutional Liberalism recognizes the important role of international institutions and organizations in facilitating cooperation, addressing global challenges, and improving the quality of infrastructure and services.

STRENGTHENING PRODUCERS AND VALUE CHAINS

Institutional Liberalism has a social goal, which is to increase the beneficial impact on human security, human welfare and human freedom. In the scope of GQSP Indonesia, these three aspects have their own orientation. Human security refers to the protection of individuals from economic and political threats that could jeopardize survival and well-being. Human freedom refers to economic and social well-being, which includes adequate access to decent work and opportunities to participate in life from local to global levels. Likewise, human freedom refers to the right of individuals to act according to their own will, including freedom of association. These three aspects are essential to create independent individuals. UNIDO through GQSP Indonesia has implemented these three aspects through GQSP Indonesia's steps in strengthening producers and value chains that have a full orientation for the community.

In strengthening producers and value chains, through GQSP Indonesia UNIDO has fulfilled all three properties of international institutions (allocator, arbitrator and representative). In fulfilling the nature of an allocator, UNIDO through GQSP Indonesia has allocated the necessary resources to support certification and training for middlemen and SMEs. Good Handling Practices (GHP) certification has been provided to 19 middlemen in South Sulawesi, North Kalimantan, and Karawang, West Java. In addition, three processing SMEs have received Hazard Analysis and Critical Control Points (HACCP) certification, and four others are in the process of applying. A total of 88 SMEs have received Good Manufacturing Practice (GMP) certificates. The program also included upscaling that reached 2,927 farmers with the adoption of SOPs, covering a production area of 2,938 hectares. Through these certifications and upscaling UNIDO

has ensured improved quality and operational standards in the fisheries industry and UNIDO has successfully distributed the necessary resources to increase the capacity and productivity of the fisheries industry in Indonesia. This is in line with the Institutional Liberal principle which emphasizes the importance of resource distribution through international cooperation to achieve common goals.

The arbitrary nature is fulfilled through UNIDO's role in helping to resolve various challenges faced by fisheries producers and value chain actors. For example, through collaboration with the Center for Brackish Water Aquaculture (BBPBAP) in Jepara, Central Java, UNIDO developed SOPs to improve the shelf life and packaging techniques of *Caulerpa* spp (sea grapes). This helped ensure compliance with international standards and resolve issues faced by local producers. As an arbitrator, UNIDO through GQSP Indonesia helps resolve various challenges faced by fisheries producers and value chain actors. For example, by developing SOPs to improve the shelf life and packaging techniques of *Caulerpa* spp (sea grapes) through collaboration with the Center for Brackish Water Aquaculture (BBPBAP) in Jepara, Central Java, UNIDO helped ensure compliance with international standards and resolve issues faced by local producers. This reflects the role of international institutions as mechanisms to resolve disputes and problems faced by member states, as emphasized in Liberal Institutional theory.

And as a UNIDO representative has ensured that global standards are implemented and followed by producers in Indonesia. Through collaboration with BBPBAP, UNIDO has not only developed SOPs but also organized training to empower disabled communities in fresh *Caulerpa* preservation and packaging techniques, strengthening social inclusion and ensuring that international standards are adhered to throughout the value chain. As a representative, UNIDO through GQSP Indonesia ensures that global standards are implemented and followed by producers in Indonesia. By developing SOPs and organizing training to empower people with disabilities in fresh *Caulerpa* preservation and packaging techniques, UNIDO not only strengthens social inclusion but also ensures that international standards are adhered to throughout the value chain. This representative role reflects the Institutional Liberal principle which emphasizes the importance of adherence to international norms and standards to achieve common goals.

Improving the capacity and quality of producers across the entire value chain in the fisheries sector is a concrete step towards achieving an improved fisheries industry sector. This involves a series of activities aimed at improving production processes, raising product quality standards, and improving coordination between various actors in the value chain, from producers to consumers. This includes training for producers to support farming techniques or processing methods that are more efficient and of higher quality, as well as the implementation of higher quality standards in the production, packaging, and distribution of fishery products. Cultivating producers and the value chain thus allows to optimize the competitiveness of fishery products, increasing the income of producers, and ensuring the availability of quality products for domestic and international consumers. Strengthening producers and value chains, GQSP Indonesia has facilitated certification for middlemen and SMEs. There are 19 middlemen who have

received Good Handling Practices (GHP) certification: (14 in South Sulawesi, 3 in North Kalimantan, and 2 in Karawang, West Java). Meanwhile, 3 processor SMEs are Hazard Analysis and Critical Control Points (HACCP) certified and 4 are in the process of applying for HACCP certification. 88 SMEs received Good Manufacturing Practice (GMP) certificates. An extensive upscaling program was conducted to determine the effectiveness of the Standard Operating Procedures (SOPs) on Good Aquaculture Practices and reach a wider range of farmers. The upscaling program has reached 2,927 farmers who adopted the SOPs and covered a production area of 2,938 hectares. This figure comprises 621 fish and shrimp farmers (including grow-outs and hatcheries) who collectively cover an area of 990 hectares and 2,306 seaweed farmers who cultivate an area of 1,947 hectares.²⁸

Referring to Indonesia's GQSP achievement data, the certifications that have been conducted illustrate the role of certification bodies as facilitators of cooperation and quality improvement in trade and distribution. Within the framework of Institutional Liberalism, certification bodies function as mechanisms that reinforce shared norms and ensure good practices in the handling of fishery products. This certification not only strengthens trust between countries and economic actors, but also facilitates cross-regional cooperation and improves trade efficiency. Thus, certification is one example of how international institutions can play an important role in strengthening cooperation and improving quality in the trade and distribution sector down to the domestic and even individual level.

UNIDO, which plays the role of an international institution, has had a huge positive impact. This can be seen from the expansion program that managed to reach 2,927 farmers who have adopted Standard Operating Procedures (SOPs). SOPs are guidelines that ensure good practices in aquaculture. With the adoption of SOPs, farmers ensure quality and sustainability of production. This evidence indicates that the role of international institutions through their programs has a huge positive impact. Furthermore, international institutions through their programs serve as mechanisms that reinforce shared norms and ensure knowledge and practices are widespread. Evidence of this argument can be seen from the 2,938 hectares of production area involving 621 fish and shrimp farmers and 2,306 seaweed farmers. This shows how international institutions and their programs can expand knowledge and practices in the fisheries sector, create networks, and improve production efficiency. On the other hand, it does not only have a big impact on the domestic regime. UNIDO as an international institution also has a representative nature where UNIDO becomes a forcing party to maintain the continuity of the quality standards of Indonesia's sustainable fisheries industry that have been achieved so that there is no decline or better to be improved.

UNIDO's achievement through GQSP Indonesia in facilitating certification for middlemen and SMEs in Indonesia's fisheries sector reflects the role of international institutions such as UNIDO in promoting global standards and improving compliance with those standards at the national level. By facilitating certifications such as Good Handling Practices (GHP), Hazard Analysis and Critical Control Points (HACCP), and

²⁸ UNIDO, "Project Document Global Quality and Standards Programme (GQSP) Indonesia."

Good Manufacturing Practice (GMP), UNIDO helps improve the quality and safety of Indonesian fishery products in accordance with international standards. In addition, through the upscaling program, Indonesia's GQSP has effectively reached a large number of fisheries farmers, expanding the use of Standard Operating Procedures (SOPs) on good aquaculture practices. By covering a large production area and involving thousands of farmers, the program has not only increased awareness of good aquaculture practices, but also improved coordination between various parties in the fisheries value chain. Overall, these efforts are part of a broader strategy to enhance Indonesia's integration in the global economy, by ensuring that Indonesian fishery products meet international standards and improve their competitiveness in the international market. As such, the achievements of GQSP Indonesia in facilitating certification and program expansion reflect UNIDO's contribution in advancing the development of a sustainable fisheries industry in Indonesia.

RAISING A CULTURE FOR QUALITY

In the framework of Institutional Liberalism, an institution has a representative nature in which the institution becomes a forcing party to agreements that have been mutually agreed upon. In the scope of GQSP Indonesia, this representative nature is implemented where international institutions become a forcing party to maintain the sustainability of the quality standards of Indonesia's sustainable fisheries industry that have been achieved. Therefore, GQSP Indonesia strives to change the mindset and behavior of fisheries industry players to pay more attention to quality standards in all aspects of production and distribution. This includes the introduction and implementation of good aquaculture practices, the selection and use of quality raw materials, the use of appropriate technology, and the implementation of an effective quality management system. "Quality Culture is a value system that produces an environment useful for the establishment and continuous improvement of quality".²⁹ As a representative, UNIDO functions as a party that enforces mutually agreed international agreements and standards. In GQSP Indonesia, this role is realized by encouraging Indonesian fisheries industry players to comply with international quality standards. This includes the introduction and implementation of good aquaculture practices, the use of quality raw materials, appropriate technology, and effective quality management systems. By playing a representative role, UNIDO helps ensure that high quality standards are maintained, which is essential to maintaining Indonesia's competitive position in the global market.

Moreover, UNIDO has also fulfilled its allocator and arbitrator properties in building a culture of quality for Indonesian sustainable fisheries industry actors. In fulfilling its allocator nature UNIDO has allocated various resources to build a culture of quality in the Indonesian fisheries sector, through the provision of training, measurement tools, and quality management systems that help industry actors

²⁹ Phillip E Pfeifer, Mark E Haskins, and Robert M Conroy, "The Influence of Organizational Structure on the Effectiveness of Tqm Programs," *Journal of Managerial Issues* 11, no. 4 (2004): 440–53.

understand and adopt best practices in their operations. More than 250 capacity building activities (skills and awareness) have been organized with 25,199 participants (57% male and 43% female). UNIDO ensures that all actors in the fisheries value chain have the knowledge and skills needed to comply with international quality standards. As an allocator, UNIDO provides the resources necessary to build a culture of quality in Indonesia's fisheries sector. Through the provision of training, measurement tools and quality management systems, UNIDO helps fisheries industry players understand and adopt best practices. Intensive training programs and the provision of educational materials ensure that the entire fisheries value chain has the knowledge and skills needed to comply with international quality standards. This reflects UNIDO's role in allocating scarce resources to support the sustainable development of the fishing industry.

And in fulfillment of its arbitrary nature UNIDO has facilitated the resolution of conflicts and challenges that may arise in the implementation of a culture of quality in the fishing industry. For example UNIDO has worked with various local and international agencies to identify barriers to the implementation of quality standards and find solutions that are acceptable to all parties. This includes mediation between regulators, producers and consumers to ensure that quality standards are adhered to without imposing excessive burdens on either party. As an arbitrator, UNIDO plays an important role in resolving conflicts and challenges that may arise in the implementation of a culture of quality in the fishing industry. UNIDO works with various local and international organizations to identify barriers to the implementation of quality standards and find solutions that are acceptable to all parties. For example, UNIDO has worked with the Center for Brackish Water Aquaculture (BBPBAP) in Jepara to develop SOPs that improve the shelf life and packaging techniques of *Caulerpa* spp (sea grapes). With this mediation, UNIDO ensures that quality standards are adhered to without imposing excessive burdens on either party, thus creating a conducive environment for all stakeholders.

GQSP Indonesia creates a culture of quality among all stakeholders. Implementation involves advocacy, increasing knowledge dissemination, providing advice for policy decisions based on standards compliance, and supporting policy development and dialogue and cooperation between the public and private sectors. More than 250 capacity building activities (skills and awareness) have been organized with 25,199 participants (57% male and 43% female) attending events organized together with partners.³⁰ GQSP Indonesia aims to create a conducive environment for the overall improvement of the quality of Indonesia's fisheries products, which in turn will have a positive impact on economic growth, increased competitiveness, and improved community welfare. In strengthening awareness about the importance of quality GQSP Indonesia has taken a proactive role through intensive advocacy campaigns. GQSP with its partners educates the public, businesses and government on quality and standards compliance. Through its holistic approach of seminars, workshops and discussions GQSP Indonesia successfully builds awareness about quality as the foundation of economic growth and sustainability. GQSP Indonesia is a key agent in the dissemination

³⁰ Ibid.

of knowledge on good quality practices. In this regard, GQSP Indonesia develops and expands Standard Operating Procedures (SOPs) with the aim of helping small and medium enterprises comply with international standards and technical regulations. By taking steps to educate producers and selected value chain actors, GQSP Indonesia ensures the transfer of quality knowledge is effectively applied on the ground.

In building a policy based on quality, GQSP Indonesia collaborates with KKP and BSN in order to strengthen the National Quality Infrastructure (NQI) of the fisheries sector. This contributes to the development of a national quality policy and harmonizes the Quality and Safety Assurance system, while ensuring standardization and certification processes in Indonesia are in line with international standards. GQSP Indonesia also facilitates dialogue and cooperation between the public and private sectors. By building strong relationships between manufacturers, government and relevant institutions in ensuring effective implementation of quality practices. It should be underlined that the cross-sectoral cooperation has strengthened the overall and sustainable quality culture.

Indonesia's implementation of the Global Quality Standards Program (GQSP) reflects efforts to build a culture of quality among all stakeholders, both from the public and private sectors. Through advocacy activities, increased knowledge dissemination, and support to policy development, UNIDO as an international institution has played a role in mobilizing support and cooperation among various parties to comply with global standards in the fisheries sector. These measures have not only increased the capacity and awareness of stakeholders on the importance of quality standards, but also strengthened their commitment towards compliance with set standards.

CONTRIBUTION OF THE GLOBAL QUALITY AND STANDARDS PROGRAMME (GQSP) IN REALIZING SDGS NO.14 (CONSERVE AND SUSTAINABLY USE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT) IN INDONESIA

As global challenges related to environmental sustainability become more pressing, efforts to realize the Sustainable Development Goals (SDGs) are increasingly becoming a major focus for various international institutions. One SDG goal that plays an important role is SDG No. 14, which emphasizes the importance of conserving and sustainably utilizing oceans, seas and marine resources. In its implementation, GQSP Indonesia focuses on 3 areas: economic, social and environmental.

CONTRIBUTION TO THE ECONOMY

GQSP Indonesia through its NQIS contributes to supporting Small and Medium Enterprises (SMEs) in the fisheries value chain by helping them meet international quality standards and access the global (export) market. Through GQSP Indonesia, SMEs receive the necessary training and certification to improve the quality of their

fishery products, thus meeting the stringent requirements of the global market. In addition, GQSP Indonesia also provides technical assistance and mentoring to improve production efficiency and operational management. As a result, small and medium enterprises are able to increase their income, which will eventually contribute to economic stability in the fisheries sector. With increased access to global markets, through GQSP Indonesia can not only expand market share but also improve the competitiveness of Indonesian fishery products in the international market. This, in turn, supports sustainable and inclusive economic growth in the national fisheries sector.

Evidence of the program's success can be seen from the significant increase in Indonesia's fisheries exports. In 2017, Indonesia achieved an export figure of 1.08 million tons with a value of US\$4.52 billion, and this figure increased to 1.22 million tons with a value of US\$6.24 billion in 2022. This increase shows that GQSP Indonesia's support not only helps SMEs meet international quality standards but also increases the competitiveness of Indonesian fishery products in the global market. GQSP Indonesia's efforts in improving quality and export market access also contribute significantly to the achievement of Sustainable Development Goal (SDG) No. 14, which focuses on the conservation and sustainable use of marine resources. By encouraging sustainable fisheries practices and improving product quality, the program helps ensure that Indonesia's fisheries sector develops responsibly and sustainably. In addition, increased exports and quality of fishery products also support the national economy, increase state revenues, and provide better jobs for coastal communities. Thus, the program not only conserves marine ecosystems but also strengthens local and national economies.

CONTRIBUTION IN THE SOCIAL SECTOR

GQSP Indonesia involves various training and capacity building programs for businesses in the fisheries sector, including fish farmers and aquaculture farmers. Through these training, businesses are introduced to best practices in fish farming and handling, international quality standards, and the latest technologies that can improve efficiency and productivity. GQSP Indonesia does not only focus on technical aspects, but also includes improving management skills and market knowledge, thus helping businesses become more competitive in the global market. By improving skills and knowledge, GQSP Indonesia significantly strengthens the social dimension of the fisheries sector. Better-trained fish farmers and aquaculture farmers are able to implement better and more sustainable practices, which not only improves production output but also quality of life. Improved knowledge also enables farmers and fish farmers to adapt to market and environmental changes, reducing their vulnerability to economic and ecological risks.

In addition, this upskilling has a positive impact on the local community, as more productive actors can create additional jobs and contribute more to the local economy. Improved skills and knowledge also directly contribute to improved living standards for fish farmers. With higher incomes from selling higher quality and more efficient products, they can improve the economic conditions of their families, access better education and health services, and improve general well-being. These training and

capacity building programs play an important role in empowering fisheries businesses, promoting sustainable development, and strengthening the socio-economic resilience of fishing communities in Indonesia, while ensuring that the living standards of fish farmers continue to improve.

More than 250 capacity building (skills and awareness) activities have been implemented with 25,199 participants (57% male and 43% female) attending events organized with partners.³¹ In the data, we can see that women make up 43% of the total 25,199 participants. By paying attention to gender equality and women empowerment, GQSP Indonesia contributes significantly to the social inclusion and welfare of coastal communities. The training and capacity building programs organized by GQSP Indonesia actively encourage women's participation in the fisheries sector. This is done by providing equal access for women to the training, knowledge and resources needed to succeed in the industry.

Women's empowerment in the fisheries sector not only improves the well-being of individuals and their families but also brings broader positive impacts to coastal communities. Women engaged in economic activities have the potential to increase family income, reduce poverty, and ensure diversification of income sources. It also helps in strengthening women's role in community decision-making, encouraging their participation in social and economic activities, as well as ensuring that their voices are heard in the planning and management of fisheries resources. By providing women with equal opportunities to participate and succeed in the fisheries sector, the program helps to address gender inequality and create a more inclusive environment. Gender equality in access to education, training, and economic opportunities also contributes to the sustainable development and long-term well-being of coastal communities. Therefore, by addressing gender equality and women's empowerment, GQSP Indonesia not only improves social inclusion but also ensures that the benefits of fisheries development are widely and equitably felt by all members of coastal communities, thereby supporting their socio-economic well-being and resilience.

ENVIRONMENTAL CONTRIBUTION

In this context, the Global Quality and Standards Programme (GQSP) is present as an initiative that supports efforts to achieve SDGs No. 14. Through various strategies and activities, GQSP seeks to make a meaningful contribution to maintaining the sustainability of marine and coastal ecosystems, and promoting the responsible use of marine resources. The Global Quality and Standards Programme (GQSP) in Indonesia plays an important role in supporting SDG Goal 14, which focuses on the conservation and sustainable use of oceans, waters and marine resources. GQSP Indonesia can contribute to the achievement of SDGs No.14 by strengthening the quality infrastructure that supports the conservation and sustainable use of marine resources.

The high demand for blue food and the depletion of wild aquatic resources and ecosystems. It must be underlined that aquaculture will be a major player in meeting this

³¹ Ibid.

demand. Since 1970, aquaculture production has increased by 7.5% per year. As a result, environmental sustainability has become a growing concern. Greater attention has also been given to the implementation of good aquaculture practices designed to reduce the environmental impact of aquaculture. GQSP Indonesia has made improvements in aquaculture practices to increase productivity and implement the four pillars of the FAO Code of Conduct for Responsible Fisheries (CCRF) namely food safety, fish health and welfare, environment and social responsibility. To enhance this, GQSP Indonesia developed standard operating procedures (SOPs) to improve productivity and fulfill the CCRF pillars. In addition to supporting the successful implementation of SOPs, GQSP Indonesia has prepared local assistants, technical guidance and farm management. As of June 2022, 2,990 fish farmers and extension workers have taken the SOP training module provided by the Fisheries Extension Center, and 951 farmers have adopted the SOP.³²

QUALITY INFRASTRUCTURE READINESS IN REALIZING SDGS

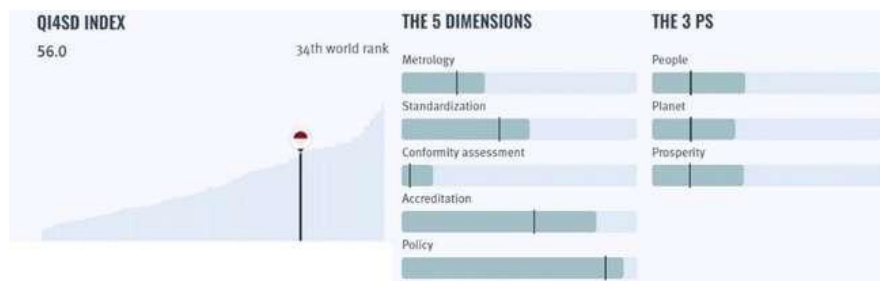


Figure SEQ Gambar * ARABIC 9. Indonesia QI4SD Index

In 2022 the results of a survey on the Quality Infrastructure for Sustainable Development Index (QI4SD) conducted by UNIDO stated that Indonesia was ranked 34 out of 137 countries the country using the 5 dimensions of the QI4SD index consists of several indicators, with a total of 36 indicators the result for Indonesia is 56.0.³³ Highlighting the importance of quality infrastructure in supporting the achievement of Sustainable Development Goals (SDGs) number 14, which is on the Conservation and Sustainable Use of Oceans and Maritime Resources. Through GQSP Indonesia, infrastructure improvements in the marine and fisheries sector play an important role in supporting SDGs goal No. 14, including protecting marine biodiversity, addressing overfishing, and reducing marine pollution. Indonesia's efforts to improve marine and fisheries infrastructure can increase coastal communities' access to marine resources, promote sustainable management, and support local economies based on marine resources. While these achievements reflect progress, further efforts are needed to strengthen cross-sector cooperation, improve resource management capacity, and reduce negative impacts on the marine environment. With a focus on environmentally friendly

³² UNIDO, "Global Quality And Standards Programme Impact Stories."

³³ BSN, "Indeks QI4SD, Indonesia Menduduki Peringkat 34 Dunia," Badan Standarisasi Nasional, 2023, <https://www.bsn.go.id/main/berita/detail/16437/indeks-qi4sd-indonesia-menduduki-peringkat-34-dunia>.

infrastructure development and sustainability, GQSP Indonesia can strengthen its contribution to the achievement of SDG No.14 and ensure the well-being and sustainability of marine ecosystems for future generations.

Looking at the efforts made by GQSP Indonesia in realizing SDGs No.14 illustrates the contribution of institutions that have a positive impact on global interests. In the Liberal Institutional framework, UNIDO has several significant roles, namely, as an actor that ensures food security, where UNIDO through GQSP Indonesia can facilitate cooperation between countries to overcome food security problems globally while ensuring the health and welfare of fish implemented through the provision of SOP training modules to extension workers and fish farmers. In addition, UNIDO is a Solution Giver in addressing environmental issues. Through GQSP Indonesia UNIDO can monitor environmental conditions, prevent fraud and offer alternative solutions to global environmental problems. The last role is Social Responsibility where UNIDO through GQSP Indonesia which facilitates cooperation between countries must also ensure the sustainability of socially responsible aquaculture practices. Thus, UNIDO's contribution through the achievements of GQSP Indonesia in realizing SDGs No. 14 can be seen as an implementation of the principle of Institutional Liberalism which prioritizes cooperation between countries and international institutions to achieve common goals.

The National Quality Infrastructure System initiated by UNIDO has proven to be able to improve the readiness of Indonesia's Quality Infrastructure in supporting the SDGs. Thus it can be concluded that UNIDO through GQSP Indonesia has implemented the principles of Institutional Liberalism initiated by Robert Kohane, namely in providing information related to the goals and objectives of the state, setting standards and identifying issues that can unite the interests of all parties / providing information related to actions that will be taken to achieve the expected goals. And fulfill the social goals of Institutional Liberalism which are oriented towards increasing the beneficial impact on human security, human welfare and human freedom.

IV. CONCLUSION

The United Nations Industrial Development Organization (UNIDO), as an international institution, has made significant contributions in improving the sustainable fisheries industry in Indonesia. Through the Global Quality and Standards Program (GQSP) and the National Quality Infrastructure System (NQIS), which are implemented in Indonesia. UNIDO has successfully improved the overall quality of Indonesia's fisheries industry. NQIS has brought significant positive impacts in various aspects of fisheries industry development, including increased trade competitiveness in the global market, increased efficiency in the use of natural and human resources, and improved food safety and health standards. In addition, the implementation of NQIS also contributes to environmental protection and climate change mitigation by encouraging more sustainable and environmentally friendly fishing practices. These efforts not only improve the quality and competitiveness of Indonesian fishery products in the

international market, but also support the long-term welfare of fishing communities in Indonesia. This success demonstrates the importance of maintaining and continuously improving the quality standards of the fishing industry to ensure sustainability and continued competitiveness.

In the context of global goals, these efforts also contribute to the achievement of the Sustainable Development Goals (SDGs), particularly SDG No. 14 on life underwater. The success of these programs demonstrates the importance of collaboration between governments, international organizations and local stakeholders in achieving sustainable development goals. With continued support, these programs can continue to adapt and evolve, address new challenges, and capitalize on emerging opportunities in the global fishing industry. Therefore, to ensure that Indonesia's fisheries industry can continue to thrive and provide maximum benefits for all stakeholders, UNIDO-initiated programs need to be continuously supported and improved. This will help secure a more sustainable and prosperous future for Indonesia's fisheries industry and ensure its continued contribution to the achievement of the SDGs, particularly those relating to life underwater and marine resource management.

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