

Best Practices Award in Sustaining Urban Food Systems

Food markets

Title of the Best Practice / Research

Less Fish Loss Supporting Better Nutrition through Innovative Partnership

The Location of Best Practice Implementation

Country Indonesia

City Jakarta

Project Website

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The Category Applied for

Best Practices Award in Sustaining Urban Food Systems

Focus Area

Food markets

Project Summary

IPLAN, an innovative alliance, founded by GAIN Indonesia, has increased the supply of fish and fish products for Indonesia's population. It facilitates dialogue and collaboration between fish supply chain actors and government to identify bottlenecks and source sustainable, local innovations to reduce the 25-35% loss of fish prior to market. Members are small and medium-sized enterprises who produce, process and distribute fish/fish products; academics, civil society and government officials. IPLAN supports business-to-business and -to-government engagement to scale up distribution and utilisation of innovations that reduce food loss and energy use, increase access to food markets, and create economic benefits. IPLAN mentorship, training, innovation challenges, seed funding and business development have supported entrepreneurs to increase fish-based food products supply and promote innovations in cold-chain distribution. IPLAN Alliance became an independent national association in July

Project logo or Main Photo



Type of submission

Organization

Name of the Organization Global Alliance for Improved Nutrition

Location Of Organization Indonesia

City/Town,Postal Code Jakarta, 12950

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Organization Website <https://www.gainhealth.org/>

Type of Organization	Global Alliance for Improved Nutrition
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Partners in Executing the Practice

Name	Organization Type	Other Organization	Address	Contact	Support Type
Ministry of Maritime Affairs and Fisheries, Republic of Indonesia	Central Government		Jl. Medan Merdeka Timur No. 16, Jakarta Pusat	Ir. Artati Widiarti, MA (Senior Advisor on the Economic, Social and Cultural Affairs) artati.widiarti@kcp.go.id +622135121780	Technical Support
Ministry of Health, Republic of Indonesia	Central Government		JL. HR Rasuna Said Block X5, Kav 4-9, Kuningan, Jakarta, Indonesia	Dr. RR. Dhian Probhoyekti, SKM, MA (Director of Community Nutrition) dir.gizi@yahoo.co.id +62215201590	Political Support
Jejaring Pasca-Panen untuk Gizi Indonesia	Non-Governmental Organisation		Wisma Abadi, 4th Floor, Room AIE. Jl. Balikpapan, Petojo Selatan, Jakarta, Indonesia	Dr. Soenan Hadi Poernomo (Chairman, JP2GI) soenanhp@jp2gi.org +628161933911	Administrative Support

Financial Profile

Annual Budget	Partner Name	Year	Contribution Amount	Support Type
28656.00	Dutch Government	2017	28656.00	
254938.00	Dutch Government	2018	254938.00	
564194.00	Dutch Government	2019	564194.00	
546367.00	Dutch Government	2020	546367.00	

Level of Activity

National

Key Dates

Date	Significance
2018-01-02	GAIN's IPLAN Project in Indonesia started
2018-05-03	GAIN's IPLAN Project in Indonesia started National workshop to initiate IPLAN Alliance
2018-08-28	MoH Decree to kick-off IPLAN Alliance
2019-07-01	IPLAN Alliance (JP2GI) becomes independent national association
2020-03-31	400 JP2GI members in 12 provinces

Scope and Criteria

The project is expected to use renewable energy, and have reduced fossil fuels dependency, and adopt approaches to reduce and decarbonize energy and material flows for transporting and storing produce in markets.

The Indonesia Postharvest Loss Alliance for Nutrition has contributed to reducing energy use in the fish sector in Indonesia. Most fish supply chain actors use excessive amounts of ice to keep fish fresh, which requires a significant amount of water and electricity but also causes food safety risks when transporting over long distances. In 2018, IPLAN organised a national competition to identify local innovations in cold-chain technology that would be environmentally sustainable, energy efficient and appropriate for the local context. From 230 proposals, Maslaha Cold Bank, a reusable ice substitute, was selected to receive capacity building, seed funding (USD 22,000), and links with new markets. These reusable icepacks are made from food grade materials, easily cleaned and refrozen, and offered in three size variations. They help small-scale fishermen save money, reduce energy use, maintain quality of their catch, and sell it at a good price. Such changes can be transformative, as Indonesian fishermen largely live in poverty. A market assessment conducted by the Ministry of Maritime Affairs and Fisheries confirmed that Maslaha could reduce freezer use by up to 15 hours per day—saving electricity and the fossil fuels used to generate it. It can also reduce the use of plastic bags for holding ice by up to 70 pieces per day per fisherman and save fisherman 83% of their daily expenditure on ice. As a result of IPLAN support, Maslaha sold more than 20,000 cold banks to 400 fishermen and other users such as lactating mothers, street food vendors and health workers transporting vaccines from June to December 2019. Cost-benefit analysis indicates that the benefits of investing in Maslaha are worth 12.6 billion IDR (760,000 USD) over 3 years, assuming reach to 400 fish traders. An effectiveness study is in process. Further investment has been secured which will allow the business to increase production to be able to reach 3 million Indonesian fishermen.

The project is expected to add new opportunities for local value addition, business development, stable markets, and maximization of the agricultural productivity and incomes of small-scale food producers including plans to reduce solid waste or promote recycling.

IPLAN consists of an Alliance and a Business Innovation Challenge (BIC), both of which develop small businesses and incomes of small-scale fish producers. Through the BIC platform, IPLAN identifies local innovations to reduce post-harvest loss in the fishery sector and improve community nutrition intake. Across two rounds, BIC has inspired over 500 proposals on cold chain technology and fish-based food innovations. Most proposals come from SMEs working as fish processors. IPLAN has mentored 5 innovations to improve products and help marketing of products to enable the public, especially the vulnerable to access affordable nutritious fish-based food. From January to March 2020, over 28,000 ready-to-eat and ready-to-cook fish-based food products have been sold on the local market. Through the Alliance, IPLAN builds business-to-business (B2B) and -to-government (B2G) engagement to scale up distribution and utilisation of the innovative products supported through the BIC. GAIN matched Maslaha with Koen Irianto, a social entrepreneur, who recruited and trained 25 sales agents, mostly community health workers and small-scale fishermen, in 12 districts of East Java. With a 20-30% margin to the agents—a lucrative amount, by local standards, in two months, Mr. Irianto and his agents successfully sold 1,500 items, generating \$1,050 USD in profit (many times the monthly minimum wage in East Java, \$152 USD). Through other channels, including IPLAN-recruited district fishery facilitators, Maslaha sold their product to 400 fishermen. On average, it is estimated that each fisherman saved \$990 USD per year in ice costs—almost three times the national per-capita poverty line of \$365 USD per year. Another supported innovation, Co-Fresh, a cooling box to transport fish, has received orders for national procurement by the government. These examples show how IPLAN is improving productivity and value added while reducing loss and increasing incomes in Indonesia's fish supply chain.

The project is expected to revitalize the rural communities, promote equality, alleviate malnutrition, hunger, poverty, and facilitate access to production value chain.

Increased consumption of fish in Indonesia is essential. 19.4 million Indonesians are unable to meet minimum dietary requirements of essential nutrients. Nutritional deficiencies are common including 30% stunting among children under five – partially caused by chronic undernutrition. Stunted children are at higher risk of poor cognitive performance and increased morbidity and mortality. Almost 50% of pregnant women are anemic, a high proportion due to nutrient deficiency, particularly iron. In Indonesia, fish is an important source of protein, vitamins, minerals, and essential fatty acids. It is cheap and easily found in markets in coastal areas, but, it is easily spoiled before reaching customers living inland; affordability can also be a barrier for poorer households. Stunting is highest in these regions of the country and among the poorest households. IPLAN enables consumers to purchase fish, bolstering the quality of their diets – critical for the prevention of malnutrition. By reducing fish loss and increasing access to affordable, nutritious fish, this platform systematically addresses the root issues that underpin the challenges fish supply chain actors face and creates an enabling environment for greater fish availability and affordability in rural markets. IPLAN's strong working alliance (currently, 400 members in 13 provinces) has engaged business, government, and civil-society actors to identify local innovations on food loss (507 proposals to date) and undertake market testing of fish-based products (over 28,000 fish-based food products and over 20,000 simple cold chain products sold). IPLAN focused on innovations which help increase the shelf-life of fish and make it more available to those communities that need it most. IPLAN also contributed to creating a 2019 Memorandum of Understanding between Indonesia's Ministry of Health and Ministry of Maritime Affairs and Fisheries to reduce malnutrition through increased fish consumption.

The project is expected to ensure the creation of local and rural entrepreneurship via education, finance and infrastructure.

Sustainably supporting local entrepreneurship is central to IPLAN's mission. While IPLAN began through a donor-sponsored project, GAIN ensured it could become an independent, self-sustaining national association that would be a resource for entrepreneurs after the project ended. This organisation, the IPLAN Alliance (or JP2GI in Bahasa) now has 400 members, 72% of whom are rural small-scale fishermen, fishmongers, or fish processors. The JP2GI builds capacity for its members through training, business matching, and seed funding for business development. JP2GI also engages fishery polytechnics and research centres in 15 provinces to assess fish loss. With this information, local and national government will be able to formulate stronger policies to support entrepreneurs to reduce food loss, improve community nutrition, and support livelihoods of local small-scale fish entrepreneurs. In November 2019, the JP2GI submitted a catalogue of IPLAN BIC winners for the MMAF's consideration in procuring mobile fish marketing aid to small fishermen in rural areas. The MMAF selected to procure 42 hygiene fish boxes from Co-fresh (USD 20,000). The catalogue also gained some interest from local government and other private sector. For example, Keumamah (fish floss tuna) was adopted by AP51, one of JP2GI's members. The BIC further reduces the gaps in capacity, technology, and financial services faced by small-scale local innovators and entrepreneurs to help them to improve their products and scale-up production and marketing. IPLAN engaged experts from a Singapore university and national food start-up community to assess BIC winners' products and provide specialized training to improve products and business models. The BIC winners have received coaching and seed funding which has been used to meet complex regulatory requirements, including production standardisation, and enabled sales of more than 23,000 units of their food products on the local market.

The project is expected to identify crops that are not currently, and internationally traded ("orphan crops") that can be developed into ones, and provide new potential sources of revenue for small scale holders, women and youth.

IPLAN supports businesses that produce innovative fish-based products using local ingredients for local tastes. One good example is a 2019 BIC winner, Tria Asteria. This local SME makes Uni Urchin, a jam based on sea urchin gonads, seaweed, and local herbs. The final product is rich in vitamins and minerals, as IPLAN-facilitated laboratory testing demonstrated. The main ingredient (sea urchin) is widely available in the local area (Lombok island) but was previously considered waste; before Tria Asteria, there was no local urchin processing into food. Urchin aquaculture is low-input and sustainable, as urchins live naturally in abundance in local seas. With mentoring and seed funding from IPLAN, Tria Asteria was able to develop its business, including urchin aquaculture, food processing, marketing, and by-product (waste) processing. The SME also trains local fishermen to collect existing "waste" urchins and sell them to Tria Asteria for use in Uni Urchin jam. Leftover shells are processed into organic fertiliser, animal feed, and decorative items (such as plant pots, lamps, and art). Tria Asteria has also started a small art centre, training and facilitating villagers to create art products using the waste from the jam making process. This creates a new type of livelihood for small-scale fishermen and villagers in the region, West Nusa Tenggara, where the local economy has suffered since a major earthquake in 2018.

The project is expected to have measures that will ensure the access to healthy foods for marginalized groups and proper functioning of food commodity markets, including their derivatives, while facilitating timely access to market information.

GAIN designed IPLAN as a platform to connect experts and supply chain actors in order to make fish and fish-based products more accessible and affordable to vulnerable groups at high risk of malnutrition, such as households with young children. Addressing malnutrition, with its long-term impact on economic and human development, is a government priority. In 2013, the government enacted a national movement to accelerate nutrition improvements through inter-ministerial activities. This included a Fish Eating Movement (from the MMAF) and a Healthy Living Community Movement (from the MOH). IPLAN facilitated tighter and smoother collaboration between the MMAF and MoH, including supporting a MoU between the ministries to collaborate on fish-for-nutrition issues. IPLAN advocates with key stakeholders to increase attention on the availability of nutritious fish and fish-based foods and plans to do the same with other nutritious food commodities in future. The Alliance currently helps increase access to fish by serving as a venue to share knowledge, collaborate, and coordinate activities and initiatives to reduce post-harvest loss. This includes mapping local food loss and matching local business with other business and government entities to increase market availability of nutritious fish. The Alliance uses online platforms (www.jp2gi.org, WhatsApp, social media) and face-to-face training and meetings. We plan to integrate market information on fish into a mobile application developed by GAIN for urban consumers. IPLAN has also supported SMEs to bring new fish-based food products to market in line with local government food standards. Seed funding has been used to improve the quality of food production and laboratory testing. All BIC-supported products will be available in retail markets and accessed by vulnerable households at an affordable price. Alliance members influence consumers' behavior to improve fish consumption through engaging in and promoting national campaign

The project is expected to adopt approaches and measures for correcting and preventing trade restrictions and distortions in world agricultural markets.

IPLAN focuses solely on the domestic fish supply chain, working to ensure its development to support the economic and nutritional needs of the Indonesian population.

The project is expected to ensure the flow and adaptation of new technology in rural areas through education, legislation and various ways of financial support, in and from the developed markets for waste management measures.

Through its members, IPLAN promotes technologies, practices, and behaviors to reduce fish loss and transform waste from production into other products, forwarding zero waste principles. This is done primarily through the BIC, participants in which are small and medium-sized entrepreneurs and local researchers. The products they develop are distributed and marketed in local markets, reaching small-scale fishermen and fish mongers and household consumers in rural areas. All of these technologies aim at reducing food loss and waste; for example, the Maslaha Cold Bank ice packs provide an appropriate technology, new to rural areas, to reduce fish spoilage through cold storage and transportation; and Co-Fresh provided an attractive and hygienic fish box which enables fishmongers to safely transport fish to inland rural areas while maintaining fish nutrition content. Supported firms create fish-based products using not only the fillet but also all other parts of the fish, and some businesses work on waste processing, such as transforming fish bone into flour, and processing unused parts of Uni Urchin as fertilizer and souvenirs.

The project is expected to ensure reduction of inequality in agricultural markets, limit exploitation of small-scale farmers while creating more equitable access to markets and services.

IPLAN is built on a tight focus on consumption of safe nutritious foods combined with capacity to engage and connect a wide range of actors in the food system. The Alliance serves to give small scale fishermen and sellers collective visibility and voice to have more weight in discussions with government and regulators. For example, IPLAN has conducted a post-harvest loss assessment in Surabaya and Probolinggo, during which government and fish association representatives, fishermen and fishmongers were engaged in discussion. Following the assessment, government and small scale farmers have had more frequent meeting and discussion. This assessment process is now being conducted in 15 provinces. Through the IPLAN Alliance, small-scale fishermen and fishmongers can increase their capacity to produce quality fish and reduce loss and waste; this is done through technology development, facilitating access to markets, training, and policy advocacy. Through IPLAN-enabled adoption and distribution of appropriate and effective technologies, such as the Maslaha cold bank, small-scale fishermen and fishmongers are able to sell higher-quality fish, reduce their operational costs for ice by 83%, increase their incomes, and provide their communities with more nutritious fish. IPLAN also helps SMEs access retail markets by providing technical advice and facilitating SMEs to qualify for government licences (i.e Certificate of Processing Feasibility/SKP from MMAF and Trade License/MD from national drug agency), matching SMEs with distributors and linking them with retail companies, such as Indomart. Both of these actions help empower small-scale fishers and fish producers while making market access more equitable.

The project is expected to have positive changes in dietary trends, linked health conditions, and healthy storage methods.

Thanks to IPLAN as well as the associated government movements (the Fish Eating Movement and Stunting Prevention Movement) and economic growth, estimated fish consumption in Indonesia has increased from 50 kg/capita/year in 2018 to 54 kg/capita/year in 2019 (MMAF report, 24 Nov 2019). There has also been an increase in average fish protein intake, from 8.31 g/person/day in 2018 to 8.54 g/person/day in 2019 (BPS-Indonesian Statistics Bureau, 01 Nov 2019). The biggest increase (106%) occurred in the poorest income group. However, malnutrition is still highly prevalent in Indonesia (30.8% of children stunted in 2018), and anemia in pregnant women increased over the same period, from 37.1% in 2013 to 48.9% in 2018. Indonesia thus still has further to go to increase availability of affordable nutritious foods in the market; reducing fish loss and waste through IPLAN can help achieve this.

The project is expected to strengthen the bonds with existing and future multi-level infrastructure, and the dependent human settlements.

Currently, this is not the focus of this project.

Narrative

Innovative, leap-frogging, and affordable technological advancement use.

IPLAN has enabled innovation and affordable technological advancement. For example, cost-benefit analysis of IPLAN innovation challenge winner, Maslaha, shows fishsellers save approximately 1,500 IDR (\$0.11) a day on ice by using Maslaha's cold bank and make an additional 2,000 IDR per kg of fish by selling more fish (Dalberg, 2019). Selling just 1 kg of fish per day gives savings which cover the cost of one Maslaha unit (25,000 IDR/ \$1.81) in eight days of use. Maslaha users reported, in the Dalberg external assessment, they could sell fish at a higher price, due to the improved quality.

Introduces a positive cultural change

One benefit of IPLAN has been improving the culture of sharing knowledge between Indonesia's Ministry of Health (MoH) and Ministry of Marine Affairs and Fisheries (MMAF). By providing a third-party platform through which both ministries were presented as experts, IPLAN has enabled the two government agencies to collaborate more effectively and supported a more efficient knowledge exchange. An external assessment of IPLAN (Dalberg 2019) highlighted that one of the project's most critical contributions has been supporting better collaboration between the MoH and the MMAF through intra-government engagement. The partnership between the two ministries facilitated by IPLAN allowed the ministries to exchange ideas on technologies, provide technical expertise to the BIC winners, and communicate results to a wider community through their respective channels.

Positive outcomes on sustainable development at either economic, environmental and social level

The IPLAN alliance provides an opportunity for private- and public-sector stakeholders to share knowledge and support sustainable and innovative SMEs that work to reduce the loss of fish. For example, IPLAN fostered a partnership between the Maslaha entrepreneur and a distributor, which led to a sustainable business model with economic benefits for both partners—as well as for the fish supply chain actors, who now have access to the money-saving technology. Maslaha thus helps save supply chain actors money while also helping reduce food safety risks and prolong the freshness of fish, thereby reducing loss and improving fishermen's and fishsellers' return on investment. Finding win-win, economically sustainable solutions such as Maslaha is at the core of IPLAN's goal of using market-based approaches to reduce post-harvest loss of nutritious foods.

Favors least developed human settlements, promotes gender equality and social inclusion

Fishermen have been one of the most neglected groups in Indonesian development. According to the Indonesian Statistics Bureau (2019), 25 million people are poor in Indonesia and 63% of them live in coastal and rural areas. About 48% of fishermen are poor. Malnutrition also disproportionately affects the poor. For example, the stunting rate among children from poor households is 50%. IPLAN's focus on entrepreneurs in the fish sector thus aims to improve the nutritional status of these less fortunate households by enabling access to nutritious fish and fish-products while supporting innovations and capacity development which favor livelihood improvement for poor individuals in domestic fish supply chains. These innovations are chosen to cater to low-income populations as both fish producers and consumers.

Aims to Improve quality of life in either developing or developed countries/communities

IPLAN connects more than 400 individuals and institutions across 12 provinces in Indonesia. It has supported more than 500 local technological and food design innovations, which could help reduce fish loss and waste at a large scale, improving the availability of this nutritious food and contributing to strengthening local economies. IPLAN has also fostered closer collaboration between the Ministry of Health and Ministry of Marine Affairs and Fisheries, providing examples of policy actions; if adopted, these policies could have a large and lasting impact on the diets, health, and incomes of Indonesians.

Demonstrates potential for transferability, adaptability, and replicability, including partnership models

IPLAN's novelty lies in its practical approach to addressing a common challenge. IPLAN focuses on human relationships and building trust between stakeholders to support an environment for knowledge sharing, innovation, and collective action. As a neutral platform focused on food loss and waste, which has negative implications for a range of stakeholders, IPLAN is able to bring together people who might not normally interact. Through facilitated discussions, the Alliance members lead the platform, steering it in a direction most appropriate for the local context and fostering a pathway to sustainability. The IPLAN platform is extremely replicable and can be applied to a diverse range of complex issues in various countries. The PLAN model has been implemented by GAIN in Nigeria and Ethiopia. Further the innovations that IPLAN supports, such as Maslaha, are also practical and replicable in many contexts; these Indonesian-developed products have already been sold internationally.

Improving the ecological footprint.

Indonesia is a country with many diverse and unique ecological zones, housing numerous at-risk and endangered plant and animal species. The latest official report on the human ecological footprint in Indonesia showed that humanity's ecological footprint had not yet overstepped its limits, and biocapacity was still in surplus. However, when considering fishing grounds, specifically, only three provinces (Papua, West Kalimantan, Gorontalo) remain within limits. IPLAN aims to contribute to increasing local fish consumption without depleting fish stocks through improved technology, reduction of post-harvest loss and waste, optimised utilisation of fish components (including the bones, skin, and offal), improved handling practices, and improved cross-regional linkages in the fish supply chain through B2B and B2G collaboration. All of this should provide more fish-based food in the market while reducing the ecological footprint of the fishery sector.

Personal Attachments

Document Name	Document Summary	Attachment
Organization website		External link
Organization website		External link
MoU GAIN and MoH Indonesia	This is the legal document and scope of works of GAIN in Indonesia.	2017-2020 MOU GAIN & MoH.pdf

Project Attachments

Document Name	Document Summary	Attachment
Project website		External link
Project Logo		GAIN-standard-logo-web_jpg (002).jpg
Jejaring Pasca-Panen untuk Gizi Indonesia	A brief summary of IPLAN Alliance (JP2GI)'s activities from 2018.	Jejaring Pasca-Panen untuk Gizi Indonesia (JP2GI) english.pdf
GAIN Annual Report to the MoH 2019	A summary of IPLAN activities on 1) building the IPLAN Alliance Forum, 2) Business Innovation Challenge and 3) Education and training throughout fishery supply chain actors.	GAIN MoH Progress Report 2019.pdf
GAIN Annual Report to the MoH 2018	A summary of IPLAN project report to the MOH on building IPLAN Alliance, establishing business innovation challenge platform and preparing series of capacity building for the Alliance members	GAIN Progress Report MoH 2018-02 FINAL-English.pdf
IPLAN Factsheet	A factsheet on post-harvest loss and nutrition in fishery sector in Indonesia	1-IPLAN Factsheet.pdf
BIC 2019 Catalogue	Catalogue showcasing the participants in the BIC-2 on Food Design Challenge	External link
BIC Catalogue 2018	Catalogues showcasing the participants in the BIC-1	External link
Prominator	A video capturing the work of Prominator, a local SME, on improving their technology during a PLAN bootcamp.	Video link
Box storage ozone technology for fish	A video about one of the first BIC products.	Video link
Post-harvest loss	A video explaining a holistic postharvest loss in simple presentation.	Video link

Other Attachments

Document Name	Document Summary	Attachment
IPLAN Alliance	This is the official website of the IPLAN Alliance (Jejaring Pasca-Panen untuk Gizi Indonesia)	External link
IPLAN Business Innovation Challenge	This is the microsite used for 2019 IPLAN Business Innovation Challenge highlighting Food Design Challenge	External link
Fighting Covid19 in Indonesia through New Nutritious Food Products	A blog about how one of the BIC-2 winners improved her business and contribute to reduce Covid19.	External link
Distributing BIC Product to Consumers	A video on the distribution of the Maslaha cold bank, the winner of the 2018 BIC	Video link
Co-Fresh	A video highlighting the most significant change experienced by the second winner of the 2018 BIC and the users of the technology.	Video link
Demo Day IPLAN Business Innovation Challenge-1	A video capturing the selection process of the first BIC on Cold Chain Technology to reduce fish loss.	Video link
BIC-1 Learning Journey	A video summarizing the eight-month-long Learning Journey of the 2018 BIC winners.	Video link