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Landscape Analysis of Large-Scale Food Fortification in Indonesia

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Landscape Analysis of Large-Scale Food Fortification in Indonesia

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Acronyms and Abbreviations

APTINDO	Asosiasi Produsen Tepung Terigu Indonesia (Wheat Flour Millers Association)
Bulog	Badan Urusan Logistik (Food Logistics Agency)
BAPPENAS	Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)
BPOM	Badan Pengawas Obat dan Makanan (National Agency of Drug and Food Control)
BPS	Badan Pusat Statistik (National Bureau of Statistics)
BSKJI	Badan Standardisasi dan Kebijakan Jasa Industri (Industrial Services Standardization and Policy Agency)
BSN	Badan Standardisasi Nasional (National Standardization Agency of Indonesia)
cap	capita
CMoMAI	Coordinating Ministry of Marine Affairs and Investment
CoA	Certificate of Analysis
CPPOB	Cara Produksi Pangan Olahan yang Baik (Good production practice for processed food)
d	day
EAR	estimated average requirement
FAO	Food and Agriculture Organization of the United Nations
FRK	fortified rice kernels
GAKY	Gangguan Akibat Kekurangan Yodium (iodine deficiency disorder)
GAIN	Global Alliance for Improved Nutrition
GFDx	Global Fortification Data Exchange
GIMNI	Gabungan Industri Minyak Nabati Indonesia (Indonesian Vegetable Oil Association)
IDD	iodine deficiency disorders
KAN	Komite Akreditasi Nasional (National Accreditation Committee)
KFI	Koalisi Fortifikasi Indonesia (Fortification Coalition of Indonesia)
KIO_3	potassium iodate
LA	landscape analysis
LSFF	large scale food fortification
LSPro	Lembaga Sertifikasi Produk (Product Certification Institution)
MD	Makanan Dalam negeri (registration number for local food products)
mcg	micrograms
mg	milligrams
mg/kg	milligrams per kilogram

ML	Makanan Luar negeri (registration number for imported food products)
MoH	Ministry of Health
MoHA	Ministry of Home Affairs
MoI	Ministry of Industry
MoT	Ministry of Trade
MoMAF	Ministry of Marine Affairs and Fisheries
MoSA	Ministry of Social Affairs
MoU	Memorandum of Understanding
MT	metric ton
MUI	Majelis Ulama Indonesia (Indonesian Council of Ulama)
NaEDTA	sodium ethylenediaminetetraacetic acid
NFA	National Food Agency
NaCl	sodium chloride
NGOs	non-government organizations
NTB	Nusa Tenggara Barat (West Nusa Tenggara)
NTT	Nusa Tenggara Timur (East Nusa Tenggara)
ppm	parts per million
PIRT	Pangan Industri Rumah Tangga (Home Industry Food)
PNRT	Program Nasional Regulasi Teknis (National Programme for Technical Regulations)
PUGAR	Pemberdayaan Usaha Garam Rakyat (People's Salt Empowerment Programme)
RASKIN	Beras Miskin (Rice for the Poor Program)
RASTRA	Beras Sejahtera (Rice for the Prosperous Population Programme)
RBC	red blood cell
RISKESDAS	Riset Kesehatan Dasar (Basic Health Research Survey)
RNI	reference nutrient intake
RPJMN	Rencana Pembangunan Jangka Menengah Nasional (National Medium-Term Development Plan)
RPJPN	Rencana Pembangunan Jangka Panjang Nasional (National Long-Term Development Plan)
SEMBAKO	Sembilan Bahan Pokok (Nine Staple Foods)
SBCC	social behavior change communication
SDT	Survei Diet Total (Total Diet Survey)
SKI	Survei Kesehatan Indonesia (Indonesian Health Survey)
SMEs	small and medium enterprises
SNI	Standar Nasional Indonesia (Indonesian National Standard)

SOP	standard operational procedure
SPPT SNI	Sertifikat Produk Penggunaan Tanda SNI (Certificate for using the SNI logo/stamp)
SSN	social safety net
SUSENAS	Survei Sosial Ekonomi Nasional (National Socio and Economic Survey)
UIC	urinary iodine concentration
UNICEF	United Nations Children's Fund
USI	universal salt iodization
WHO	World Health Organization
WTO	World Trade Organization

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Executive Summary

Background

Indonesia is implementing mandatory salt, wheat flour and palm cooking oil fortification. High-level political commitment to LSFF has been demonstrated in the form of mandatory legislation and a variety of supportive regulations have created an enabling environment for LSFF leading to the fortification of significant proportions of these staple foods and condiments. However, constraints have been experienced in the implementation of LSFF, potentially as a result of inadequate coordination and oversight. These constraints are potentially also the reason that fortification does not appear to have contributed to a reduction in the prevalence of anaemia and pregnant women in the poorest quintiles remain iodine deficient. In order to strengthen food fortification implementation, the National Development Planning Agency (BAPPENAS) is in the process of establishing a coordination Forum, has commissioned this Landscape Analysis and initiated the development of a national strategy.

Objectives

The objective of this Landscape Analysis is to identify gaps and challenges in the implementation of LSFF in Indonesia. It is based on a theory of change for LSFF which recognizes the important respective roles of government and the food industry and the principal that LSFF is most effectively and sustainably implemented if integrated into national food legislation, production and control systems and national public health monitoring systems. Findings are presented by key components of a successful LSFF interventions, including coordination, management and oversight. However, implementation to date and the opportunities for expanded implementation of rice fortification are presented separately because rice fortification is not mandatorily fortified at this time.

Key Findings

National Requirement and Consumption Pattern

National requirements for salt, wheat flour and palm cooking oil are increasing with Indonesia's growing population. The national requirement for rice has fallen however as the diet of the population has diversified and wheat flour consumption has increased. A majority of salt and wheat flour are now consumed as processed foods. Data on consumption of palm cooking oil varies significantly, potentially because a substantial amount is used as a cooking medium but is not actually consumed. While the cooking oil and wheat flour industries are characterized by large, sophisticated facilities with high potential for quality fortification, a substantial proportion of rice (rough estimate 60%) and salt (approximately 30%) is still processed in small facilities with low potential to fortify. In 2022, a national policy to develop the salt industry was issued and the People's Cooking Oil Programme was launched; both have the potential to impact mandatory food fortification.

Legislation and Standard

The fortification of cooking oil, salt and wheat flour are mandated in Indonesia. Fortification requirements are indicated in national standards (SNI) and Ministry of Industry (MoI) regulations make them mandatory and assign a certification body. As such, fortification legislation is completely integrated into the food legislation system. The legislative framework for salt fortification is complex, confusing and incomplete however. Although the SNI for iodized consumption salt was updated in 2016, it has not yet been made mandatory and a certification body has not been assigned. Regulations from different sectors on the requirement to use iodized salt in the manufacture of processed foods are contradictory. In contrast, the legislative framework for fortified wheat flour is relatively clear and complete. Fortification requirements are indicated in SNI 3751, which was updated in 2018 to specify iron compounds; supporting regulations were issued in 2021. However, the revised fortification requirements have not followed WHO recommendations for levels of iron, zinc and folic acid and the justification and reasoning for this decision is unclear.

The legislative framework for the fortification of cooking oil is the most simple and complete. Fortification requirements are indicated in SNI 7709: 2012 and 2019 and both have been made mandatory and certification bodies have been appointed. Additional Ministry of Trade regulations have sought to require the packaging of household oil, which facilitates fortification. There is no requirement to fortify rice because of the significant amounts thought to be milled by small scale millers without the capacity to fortify. However fortified rice is recognized in NFA Regulation 2/2023 on Rice Quality and Labelling Standards. SNIs for fortified rice and fortified rice kernels are under development.

The majority of all the mandatorily fortified foods are appropriately fortified and the majority of food producers have no difficulties in fortification. Fortification has become the norm and consumption of fortified salt, wheat flour and palm cooking oil is widespread. Quality fortified wheat flour is easily produced by Indonesia's large industrial-scale mills. Around 80% is sold to large and small food processors making wheat flour products such as noodles and bread. In 2021 when the SNI for wheat flour was updated to specify allowed iron compounds, some of the small processors complained that the new iron compound caused black spots; but the spots were eventually determined to be due to an interaction with another additive. SNI 7709 requires all cooking oil to be fortified and packaged. This has led to the misperception that only packaged oil needs to be fortified. Since the 2022 People's Cooking Oil programme however, almost all household oil is now packaged, facilitating fortification. Some vitamin A is lost during distribution, but local studies indicate 61% of vitamin A remains in the oil at the household. Salt is iodized by salt processors refining raw salt. A significant proportion of Indonesian salt is still processed by small and medium scale processors and may not be adequately iodized. And some raw salt, that is not purchased by processors because of low quality, may end up in markets as non-iodized salt. However large-scale processors are easily able to produce quality iodized salt. Fortified rice is currently made in Indonesia by a small number of large-scale millers, including BULOG, using locally produced or imported fortified rice kernels. Greater production of fortified rice is limited by lack of demand. NFA's Rice Food Aid programme will address this limitation and encourage rice millers to undertake necessary investments to produce fortified rice.

Regulatory Monitoring

Regulatory monitoring for enforcement of fortification is integrated into the food control system. External monitoring at production level is undertaken by BPOM and MoI through processes to issue various facility and product certificates and licenses. Commercial monitoring is undertaken principally by BPOM in markets. These results are published and indicate compliance for all foods around 80% or greater. Some weaknesses and gaps in the current regulatory monitoring system include apparently excessive and duplicative facility and product inspections by BPOM and MoI with lack of coordination between the two, insufficient accredited and authorized agencies to undertake all the required inspections in a timely manner, over reliance on product testing and market surveillance, no system for ensuring the use of fortified ingredients in processed foods and no solution for small scale salt processors that are unable to achieve SNI certification, be issued with an MD license or apply for PIRT.

Assessment of Coverage and Impact

Indonesia has very limited data on either coverage or impact of fortified food. This is despite the fact that there have been numerous occasions to collect such data through routine and regular household health and/or expenditure surveys. The lack of data appears to be due to insufficient prioritization of need to have such data for programme evaluation and improvement and potentially also lack of coordination to make best use of limited opportunities and resources. Since the last assessment of household coverage of iodized salt in 2013, there have been no assessments of coverage of any of the fortified foods. Vitamin A is the only micronutrient being assessed by Indonesian Health Survey (SKI) 2023.

Potential for Rice Fortification

There is a high level of interest in large scale fortification of rice in Indonesia recognizing that rice is the staple food of the country and Indonesia is almost self-sufficient in rice. However logistical, technical, and financial constraints have limited large scale rice fortification. Considering the fragmented structure of the rice milling industry, the most promising strategy for achieving large scale rice fortification appears to be through a social safety net programme that is purchasing and distributing rice to segments of the population that have low micronutrient status. In mid-2023, the newly formed National Food Agency started a rice distribution programme called Bantuan Pangan Beras (Rice Food Aid) that will distribute 639 million kilograms of rice to 21.353 million beneficiary families who were formerly beneficiaries of the SEMBAKO cash subsidy programme which replaced the RASTRA rice distribution programme. The NFA plans for this rice to be fortified. This NFA programme offers the best opportunity for large scale rice fortification in Indonesia, but it will be important to learn lessons from former rice distribution programmes; specifically, RASKIN and RASTRA.

Recommendations

Recommendations on improving the implementation of LSFF in Indonesia are organized by the same programme components headings that have been used to present the key findings of the Landscape Analysis and are presented in Section 5.2. The most important recommendations under each programme component heading are:

- Coordination, Management and Oversight: Commission a series of focus group discussions and review of relevant regulations to map roles and responsibilities of various ministries, directorates within ministries and other relevant government agencies. The objective of the review is to identify gaps and overlaps in roles and responsibilities and to ensure alignment in the principals of government support to and implementation of fortification. Use the results to increase the accountability of stakeholders to fulfil their agreed upon mandates and roles with regards to fortification

- Legislation, Regulations and Standards: Commission a review of food fortification legislation in the context of Indonesia's food legislative system. The objectives would be to look for opportunities for simplification and standardization in order to strengthen the legislative framework and facilitate implementation. For example, review the necessity to issue new regulations to make an SNI mandatory and to assign an enforcement body every time it is updated and standardize the content of such regulations across fortified foods. Revoke "additional regulations" on mandatory fortification to avoid duplication and contradictions in regulations outside of the 'SNI and supportive regulations' model. Consider the wheat flour legislative framework as an example of how other mandatory fortification foods can be legislated.

- Regulatory Monitoring for Enforcement of Compliance for Food Fortification: Commission a review of all components of regulatory monitoring for food fortification to document the various components since there are different implementors, and look for ways to streamline and simplify the process in line with recommendations from the 2017 WHO/FAO Review of the Food Control System. In particular, assess options to increase collaboration and integration between BPOM and MoI to reduce the number of monitoring activities and duplication, make more effective use of resources and reduce the burden on industry. The fact that LSPro has been authorized by both BPOM and MoI potentially creates opportunities for greater integration. Consider also reducing the emphasis on market supervision and product testing and instead increase emphasis on pre-market facility and product supervision, in particular facility inspection and document audit.

- Assessment of Coverage and Impact: Create a working group or taskforce within the Food Fortification Forum that is responsible for seeking/keeping an eye out for opportunities to assess indicators relevant to fortification through planned data collection exercises such as surveillance systems and national surveys.

01

Background to the Landscape Analysis on Large-Scale Food Fortification

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Despite significant improvements in public health in Indonesia in the last 20 years, micronutrient deficiencies appear to persist although data on micronutrient status is limited. Indonesia recorded high levels of iodine deficiency, including goiter, in the 1990s and high levels of anaemia, in particular in pregnant women, continue to be recorded.

The government of Indonesia has consistently identified food fortification as a priority intervention to address the persistent vitamin and mineral deficiencies amongst the population, in addition to other micronutrient interventions such as supplementation. As a key intervention in national efforts to achieve optimal public health and nutrition, LSFF is also recognized as an intervention that will contribute to national development. As a result, fortification, including mandatory fortification, features in several national policies, laws and development plans.

The Law on Food Safety, Quality and Nutrition (No 28, 2004) specifically refers to fortification as an intervention to employ "in the event that there is a shortage and/or decline in the nutritional status of the community." It then specifies the mandate and responsibility of the Ministers of Health and Industry, and food producers, with regards to food fortification.

The 2012 National Food Law has a chapter on the 'Nutrition Improvement' in which food fortification has been mentioned as one of strategies if there is a decrease of the nutritional status in the community. The next Long-Term Development Plan (RPJPN) 2025-2045 recognizes large-scale food fortification as a food systems contribution to socio-cultural and ecological resilience through energy, water and food self-sufficiency. The next Medium Term National Development (RPJMN) 2025-2029 has yet to be developed, but the current Medium-Term National Development Plan (RPJMN) 2020-2024 included, for example, a target that 100% of social safety net (SSN) beneficiaries receive fortified rice.[1]

Fortification is also included in the 2021 Presidential Decree on Stunting No 72. Item b under Pillar 4 calls for the quality of food fortification to be improved by increasing the percentage of food products that are compliant to 75%. The primary responsibility has been assigned to BPOM and regional and provincial governments and stakeholders.

Various forms of large-scale food fortification (LSFF) have been implemented in Indonesia since pre-independence. Three staple foods and condiments – salt, wheat flour and palm cooking oil- are currently fortified on a mandatory basis, meaning they are required by law and are universal, and numerous efforts have been made to scale up fortification of the national staple food, rice.

As a result of the the high-level political commitment to LSFF and the existence of mandatory legislation and a variety of supportive regulations, significant proportions of salt, wheat flour and palm cooking oil are fortified. However, constraints have been experienced in the implementation of LSFF, potentially as a result of inadequate coordination and oversight. These constraints are potentially also the reason that fortification does not appear to have contributed to a reduction in the prevalence of anaemia and pregnant women in the poorest quintiles remain iodine deficient.[2] In order to strengthen food fortification implementation, the National Development Planning Agency (BAPPENAS) has started to operationalize a coordination Forum, commissioned this Landscape Analysis and has initiated the development of a national strategy for LSFF.

1 Presidential Regulation Number 18, Year 2020 on the National Medium-Term Development Plan (RPJMN 2020-2024)- Target by 2024: 100% coverage of BPNT (Non-Cash Food Assistance) for access to fortified and enriched rice for the poor and malnourished.
2 RISKESDAS 2013

On 28 November 2023, a Forum on Food Fortification was formed in Indonesia. The Minister has yet to sign the final regulation on the Forum but the draft goal is to improve the quality of human resources through increasing the intake of micronutrients as a result of the development of mandatory fortification, home fortification and biofortification. The draft outcome is that products of mandatory fortification, home fortification and biofortification are available and meet standards set by the government at the production, market and consumer levels and are sustainably consumed by the community. The draft aim of the Forum is to ensure that policies on mandatory fortification, home fortification and biofortification are formulated, including monitoring, evaluation, advocacy and social behavior change communication (SBCC) instruments. Short term outputs are expected to contribute to the following:

- National Strategic Plan for Large Scale Food Fortification (2025-2045)
- Fortification-related recommendations for the RPJMN 2025-2029
- Recommendations on monitoring and evaluation of fortification in Indonesia
- Recommendations on an advocacy and communication strategy for fortification in Indonesia.

The Forum is expected to be composed of relevant ministries, non-ministries such as development partners, civil society organizations and academia and industry associations and representatives. It will include an "advisor", steering committee, technical team and working groups on salt, cooking oil, wheat flour, rice, home fortification and biofortification, and a technical secretariat.

As mentioned above, a National Strategic Plan for Large Scale Food Fortification (2025-2045) will also be developed. Inputs into this Strategic Plan will come from the Forum, this Landscape Analysis on LSFF and an analysis of the 2014 Total Diet Survey in order to estimate micronutrient intake as a proxy indicator for micronutrient status.

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02

Objectives and Methodology for the Landscape Analysis of Large-Scale Food Fortification

2.1 Objectives of a Landscape Analysis on Large-Scale Food Fortification

As part of the process of improving the implementation of LSFF as a key intervention in Indonesia's national development, BAPPENAS has commissioned this Landscape Analysis on Large-Scale Food Fortification (LSFF).

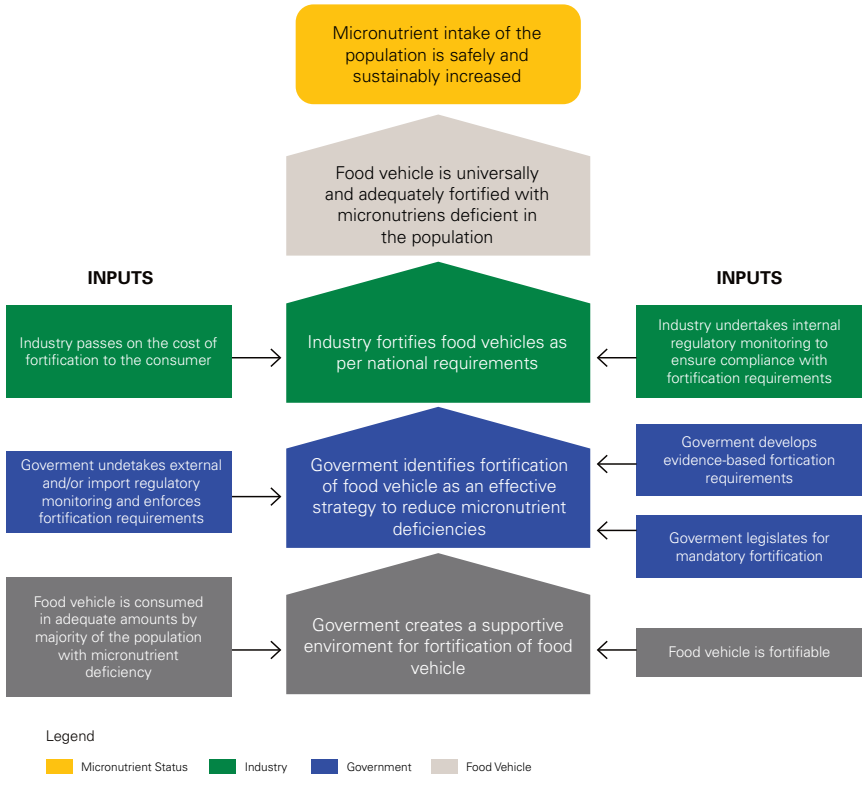
The objective of this Landscape Analysis is to identify gaps and challenges in the **implementation** of LSFF in Indonesia.

The output of the Landscape Analysis will be recommendations for opportunities to strengthen the implementation of large-scale food fortification in order to reduce micronutrient deficiencies and improve the nutrition outcomes of children and women in Indonesia. The findings will contribute to the plans for mandatory food fortification in the RPJMN 2025-2029 and the development of the National Strategic Plan for LSFF 2025-2045. It is also expected to inform the Food and Nutrition Action Plan 2025-2029 and other strategic documents.

2.2 Methodology of the Landscape Analysis on Large-Scale Food Fortification

The United Nations Children's Fund (UNICEF) was commissioned by BAPPENAS to undertake the Landscape Analysis. As the United Nations agency tasked with ensuring the rights of women and children, UNICEF has supported LSFF in Indonesia since the inception of all programmes and is mandated to work with all sectors of the government. The Landscape Analysis is based on the below theory of change for LSFF which recognizes that LSFF is most effective when mandatory, the important respective roles of government and the food industry, and the principal that LSFF is most effectively and sustainably implemented if integrated into national food legislation, production, and control systems and national public health monitoring systems. [See Figure 1 below]

Figure 1: Theory of Change of Large-Scale Food Fortification[3]



3 ASEAN Guidelines and Minimum Standards on Large Scale Food Fortification (in print)

The key findings of the Landscape Analysis are organized by key components of a successful LSFF interventions. Namely:

- Legislation, regulations and standards
- Production of quality fortified food
- Regulatory monitoring for enforcement and compliance
- Assessment of coverage and impact

With the above components supported and underpinned by:

- Coordination, management and oversight.

The Landscape Analysis reviewed implementation of mandatory salt, wheat flour and palm cooking oil for each of the above components of an LSFF intervention. The key findings are presented by 'programme component'. In addition, implementation to date and the opportunities for expanded implementation of rice fortification are presented as an additional LSFF intervention in Indonesia. Further information on rice fortification is available in a series of reviews and landscape analysis on rice fortification.[4] Rice fortification was not treated in the same way as the other LSFF interventions in this LA because it is not currently mandatorily fortified, and may not be in the near to medium term future. However, recommendations on rice fortification have been incorporated into the relevant sub-sections in the chapter on Recommendations.

The methodology to undertake the Landscape Analysis included:

- Interviews with all national stakeholders and development agencies [See Annex 3]
- Focus group discussions on fortified foods (oil, rice, salt and wheat flour) and programme components (legislative framework, regulatory monitoring, communications and monitoring & evaluation) [See Annex 3 for participants to the focus group discussions]
- Compilation and review of all relevant standards, regulations and laws [See Annex 1]
- Desk review of relevant analysis, evaluations, and reviews

4 Recent reviews and landscape analysis on rice fortification include: 2008: UNICEF. Assessment of Opportunities and Constraints for Rice Fortification in Indonesia: A report to UNICEF Indonesia and EAPRO; 2022: World Bank. Rice Fortification in Indonesia: Opportunities, Challenges, and Moving Forward; 2022: World Food Programme. Understanding the Rice Value Chain in Indonesia: Defining the Way Forward for Rice Fortification; 2023: World Bank. World Bank Support to GOI Ambitions to Scale Up Rice Fortification; 2023: Nutrition International. Landscape Analysis of Rice Fortification in Indonesia: Update to the 2021 version by the World Food Programme

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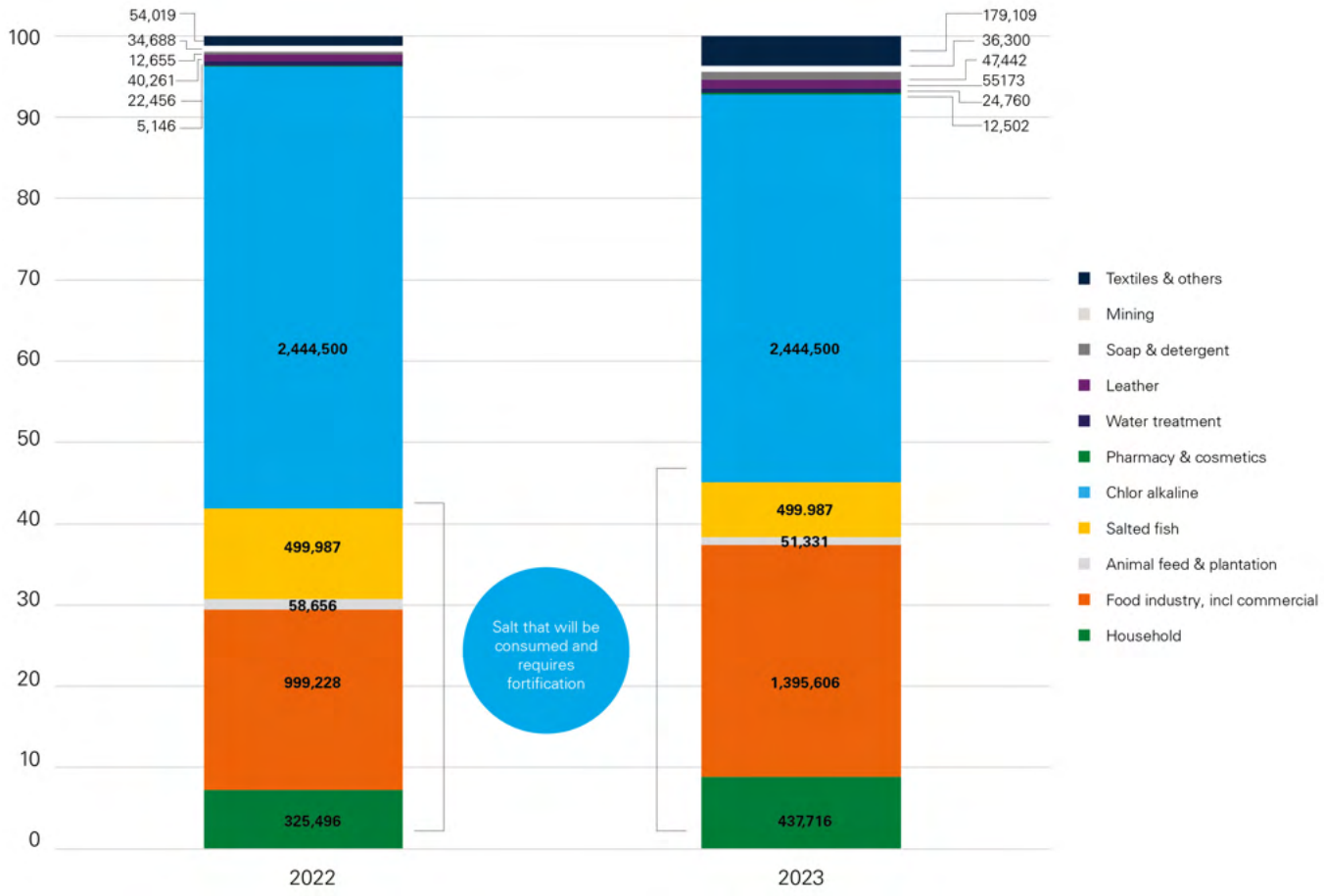
03

National Requirements and Consumption Patterns

3.1 Salt

Indonesia's requirement for salt has risen from about 3.5 million metric tons in 2016[5] to almost 5 million in 2023.[6] In 2022, it was about 4.5 million. The national requirement is traditionally categorised into industrial and non-industrial uses. Salt for industrial uses made up 83% of the national requirement in 2022, rising to 91% in 2023; this category includes in particular salt for the chlor-alkaline industry, but also food industry salt and salt for salted fish. Non-industrial salt includes salt for households, restaurants and agricultural uses. This categorisation of salt makes it hard to identify the salt that should be iodized. As per the Presidential Instruction in 1994,[7] all salt for human and animal consumption, including salt for fish salting, should be iodized. When categorised as food or non-food salt, food salt made up 42% of national requirements in 2022 and 45% in 2023. Food salt includes household salt, salt for the food industry including restaurants, salt used for animal feed and agriculture and salt used for fish salting. Thus, although the requirements for industrial salt have increased, the proportion of salt which should be iodized, because it will be consumed, has also increased. Figure 2 below presents salt requirements for different categories of salt for 2022 and 2023.

Figure 2: Salt requirements in 2022 and 2023[8]

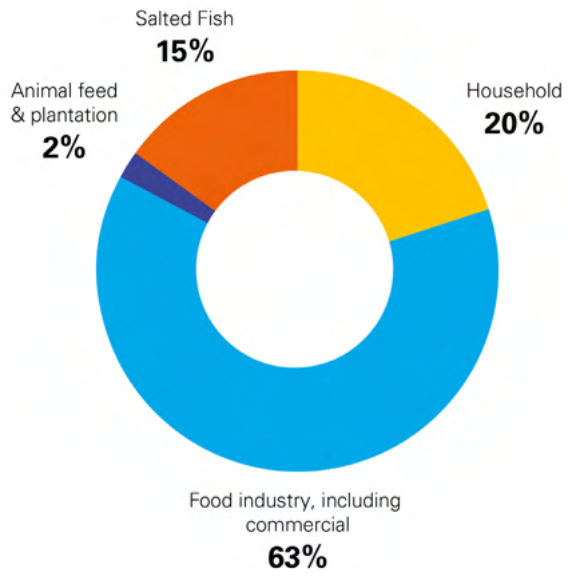


5 Directorate of Upstream Chemicals, Ministry of Industry, October 2023
6 Coordinating Ministry of Economic Affairs, July 2023 and Coordinating Ministry of Maritime Affairs and Investment, October 2023.
7 Decree of the President of the Republic of Indonesia Number 69 of 1994 concerning Procurement of Iodized Salt
8 2022 data: Directorate of Upstream Chemicals, Ministry of Industry, October 2023; 2023 data: BSKJI, MoI presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

National data on per capita salt consumption does not appear to be available for Indonesia. However, modelled data published in 2013 estimates average per capita salt consumption in Indonesia as 8.5g/c/d[9] which is considerably higher than the 5g/c/d recommended by WHO.

Figure 3 below presents the proportion of different categories of food salt. It demonstrates the significant proportion of salt is consumed through processed foods (including salted fish) rather than added directly to food in the home. The majority of food industry salt is salt used in the production of processed foods, such as instant noodles and condiments.

Figure 3: Categories of food salt in 2023[10]



3.2 Wheat Flour

Products made from wheat flour, in particular noodles and breads, are the second staple food of Indonesians after rice. Wheat flour consumption is growing in both urban and rural communities, although it plateaued during Covid. [See Figure 4] However, wheat flour consumption is low in Indonesia, and in Asia in general, in comparison to other regions such as South America, Europe and Africa. For example, while Indonesians are eating between 40-50g/capita/day, [See Figure 4] consumption in many European countries, some Middle Eastern countries and some African countries is frequently over 100g/capita/day.[11]

In Indonesia, wheat flour consumption is higher in urban communities and in higher income households [See Figures 4 & 5] meaning that it is not the optimal food vehicle for reaching those most likely to be vitamin and mineral deficient. Wheat flour fortification is easy, cost effective and highly efficacious amongst the people who consume it however.

9 Powles J et al. BMJ Open 2013;3:e003733. doi:10.1136/bmjopen-2013-003733.
10 Assistant Deputy for Downstream Maritime Resources, Coordinating Ministry of Economic Affairs, July 2023
11 Global Fortification Data Exchange: Daily food intake/availability. https://fortificationdata.org/map-availability/. Accessed 16/11/2023

Figure 4: Wheat flour consumption per day (grams per capita per day)[12]

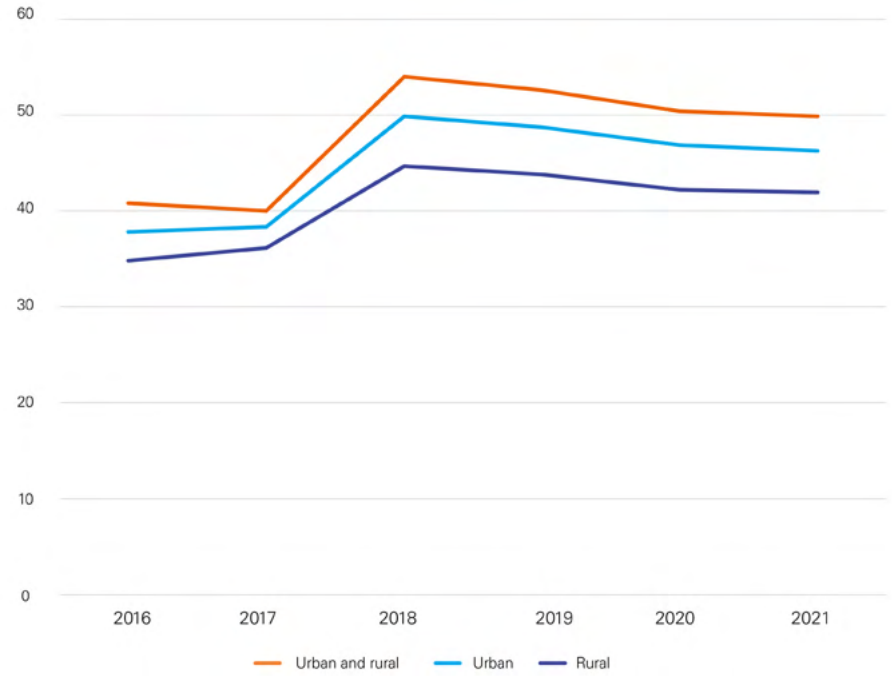
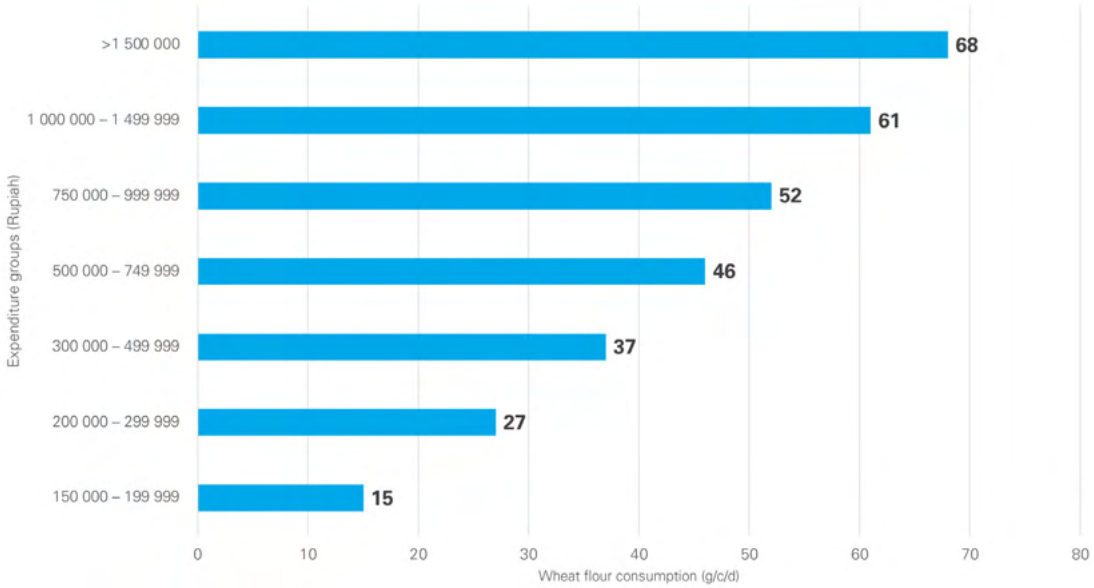


Figure 5: Wheat flour consumption by expenditure groups (grams per capita per day)[13]

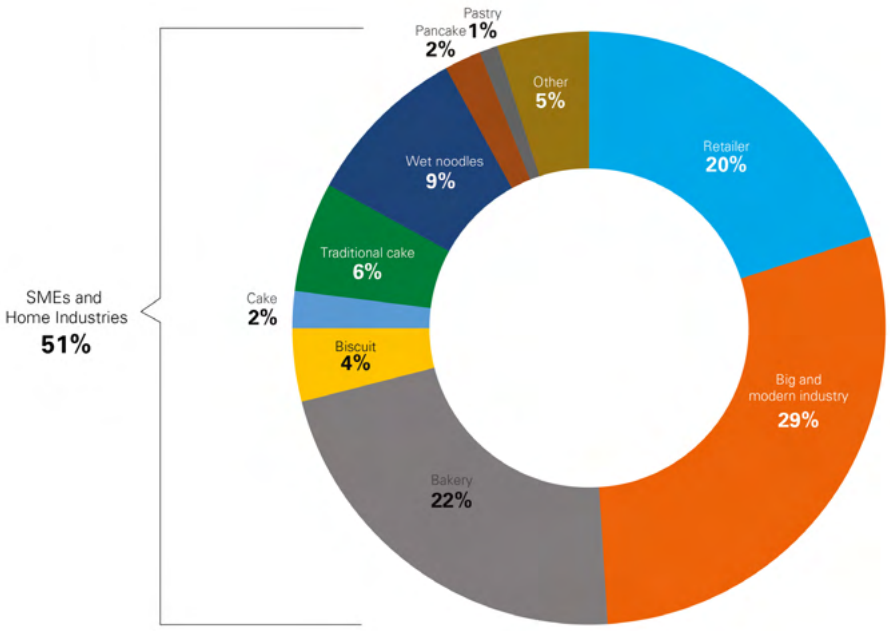


While Indonesia's national requirements for wheat flour are all met from domestic mills, all wheat grain is imported into Indonesia. The quantity of wheat grain imported has more than doubled from 4.5 million metric tons in 2004 to a high of 11.5 million metric tons in 2021; in 2022, 9.5 million metric tons were imported.[14] Wheat flour requirements (consumption) in 2021 and 2022 were 6.963 and 6.661 million metric tons respectively; of which the grain equivalent is 8.9 and 8.5 million tons.

12 Directory of Food Consumption Development 2021, National Food (Security) Agency, Ministry of Agriculture, 2021
13 Directory of Food Consumption Development 2021, National Food (Security) Agency, Ministry of Agriculture, 2021
14 APTINDO, September 2023. Data was also requested from the Ministry of Industry but it was not shared.

This translates to per capita consumption of wheat flour of 66 g/c/d assuming everyone eats wheat flour or 89 g/c/d assuming only adults over 14 years old consume wheat flour. Meanwhile, FAO data on wheat flour availability in Indonesia indicate 56g/c/d.[15] While Indonesia's consumption of wheat flour is low compared to other countries it is growing, making wheat flour an increasingly effective food vehicle for fortification. As shown in Figure 6 below, only 20% of wheat flour is sold as retail flour for food preparation in the home. The rest is made into wheat flour products by small scale enterprise (51%) or large industry (29%). Common wheat flour foods in Indonesia are dry noodles, in particular instant noodles, bread and bakery product, wet noodles, traditional cakes and biscuits. In general, these products are made by both large and small industries, but instant noodles are made almost exclusively by large industries, while, traditional cakes and wet noodles are made almost exclusively by small industries. It is important to note that wheat flour in the home makes up only about 20% of the total wheat flour consumption; this is flour sold to retailers in Figure 6.

Figure 6: Wheat flour consumers[16]



3.3 Cooking Oil

Statistics on food consumption published by Centre for Agricultural Data and Information System, Ministry of Agriculture in 2022 indicates that consumption of palm cooking oil has risen from 16.04 kg/capita/year in 2018 to 29.16 kg/capita/year in 2022. This translates to just under 80g of cooking oil consumed per day. This contrasts to FAO data on food availability which indicates 23g/capita/day for Indonesia.[17] GIMNI, the Indonesian Vegetable Oil Association reported average intakes of 18 liters/capita/year[18] or 46g/capita/day. Meanwhile, local studies have reported oil consumption to be 20.5 g/day for adult women.[19] Estimates of cooking oil consumption in Indonesia vary significantly; this is potentially because significant amounts of oil may be used in the household as a cooking medium, but a proportion of that oil is not actually consumed.

15 Global Fortification Data Exchange. Map: Food Intake and Availability. Accessed 16/11/2023. [http://www.fortificationdata.org.]
16 APTINDO, September 2023.
17 Global Fortification Data Exchange. Indonesia Country Dashboard. Accessed 16/11/2023 [https://fortificationdata.org/country-fortification-dashboard/?alpha3_code=IDN&lang=en]
18 1 liter of oil is equivalent to 916g of oil
19 Martianto D, Komari, Soekatri M, Heryatno Y, Mudjajanto ES, Soekirman. Possibility of vitamin A fortification of cooking oil in Indonesia: a feasibility analysis. Jakarta: Koalisi Fortifikasi Indonesia (KFI)/Micronutrient Initiative, 2005.

Estimates of oil consumption may therefore vary depending on how it is assessed e.g., based on expenditure, 24-hour recall, utilization, availability, etc.

Indonesia is the biggest global exporter of palm oil where 50% of global exports are from Indonesia.[20] Around 65.6% of national crude palm oil production is exported for use in food products, detergents, cosmetics and, to a small extent, biofuel. Globally, about a third of all vegetable oils consumed is palm oil.[21] Just under half of the domestically used palm oil in Indonesia is used for food; 32% of this is used by the food industry and the remainder is used by households, primarily for frying.

3.4 Rice

Rice is the staple food of Indonesians. The annual total requirement is just under 31 million tons[22] and the average consumption was 93.5 kg/capita/year in 2022[23]. This translates into a per capita intake of 256g per day. Statistics on food consumption published by Centre for Agricultural Data and Information System, Ministry of Agriculture in 2022 recorded per capita availability of rice to be 131.29 kg in 2018 falling to 115.09 kg in 2022 (preliminary data). Based on FAO rice availability data, Indonesia is the seventh largest rice eating country in the world after Bangladesh, Bhutan, Cambodia, Lao PDR, the Philippines, Sri Lanka and Viet Nam and the fourth largest producer of rice after China, India and Bangladesh.[24] More than 90% of the population are believed to consume rice[25] and rice consumption is relatively uniform across most provinces and economic quintiles making it an optimal food fortification vehicle.[26] However, rice consumption in Indonesia is declining as diets diversify and consumption of other cereals, in particular wheat flour, increases. Nevertheless, rice is still consumed in significantly greater quantity than all other foods.

20 https://www.worldstopexports.com/palm-oil-exports-by-country/
21 https://www.statista.com/statistics/263937/vegetable-oils-global-consumption/
22 From presentation by Rinna Syawal, Director of Food Consumption Diversity, National Food Agency. Rice Fortification Program Opportunities in Social Safety Nets. Presentation delivered to: Workshop on Micronutrient Gap Analysis for Preparing Nutritional Quality Standards for Fortified Rice, Bogor, November 2 2023 (slide 22) BULOG Managerial Report and ID FOOD updated 31 October 2023
23 Nutrition International. Landscape Analysis of Rice Fortification in Indonesia. 2023
24 Global Fortification Data Exchange- https://fortificationdata.org Accessed 13/11/2023.
25 From presentation by Rinna Syawal, Director of Food Consumption Diversity, National Food Agency. Rice Fortification Program Opportunities in Social Safety Nets. Presentation delivered to: Workshop on Micronutrient Gap Analysis for Preparing Nutritional Quality Standards for Fortified Rice, Bogor, November 2 2023 (slide 6)
26 Nutrition International. Landscape Analysis of Rice Fortification in Indonesia. 2023

04

Structure of the Industry of Large-Scale Food Fortification Vehicles

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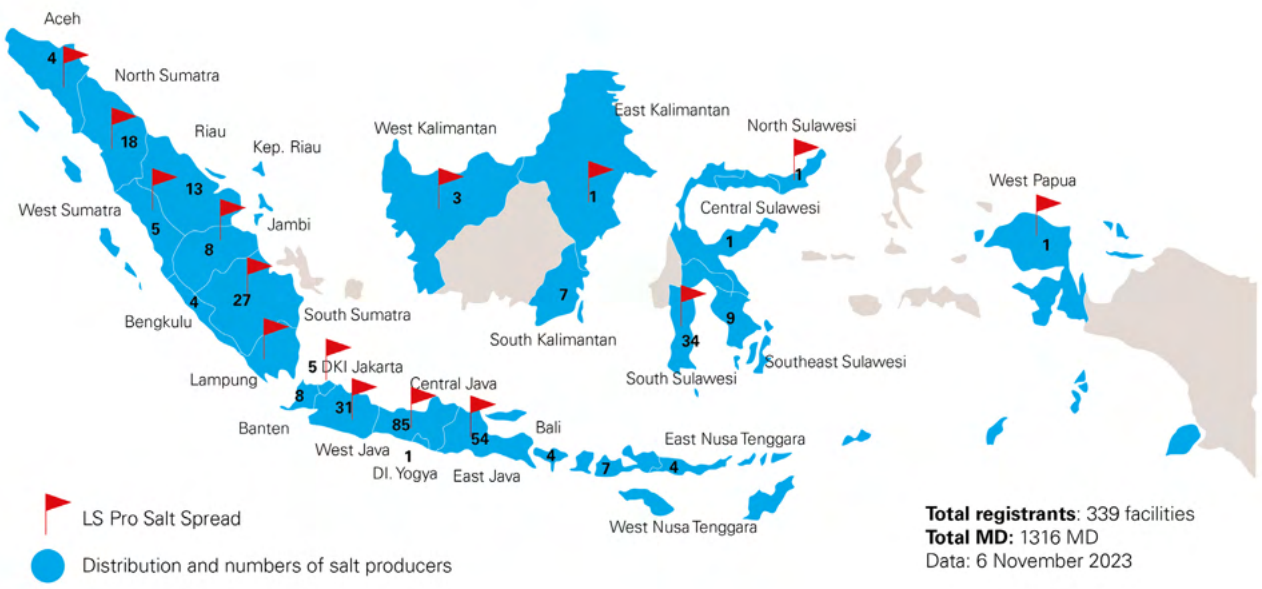
4.1 Salt

Indonesia is estimated to have about 400 salt processors or refineries [See Figure 7], of which 13 are large scale, 56 are medium scale and 312 are small. Many of the small processors (75) are in Central Java while several of the medium (16) and large-scale processors (3) are in East Java.[27] Large and medium scale processors are estimated to process 65-70 per cent of all salt. Some salt processors also produce raw salt and others purchase raw salt from traditional salt farmers or import raw salt for further processing.

Figure 7: Distribution of BPOM-Registered Salt Processors[28]

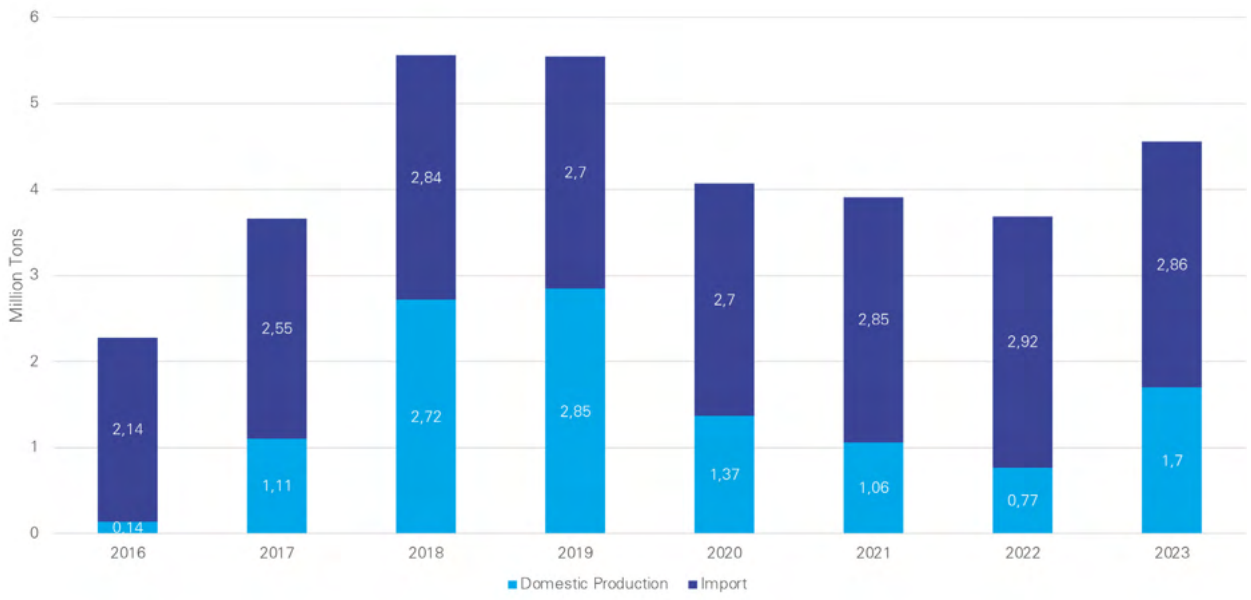


A long-standing problem is that the supply of salt from domestic salt farmers is highly variable, as it is impacted by the weather, and is often of low quality such that salt processors frequently prefer to purchase imported salt over domestic salt for further processing. Additionally salt consumers, in particular, industrial consumers, such as the chlor alkaline and processed food industry, prefer to purchase imported salt. Figure 8 below presents quantities of domestic salt production and imports from 2016 to 2023 illustrating the wide variation in domestic salt production. Despite this, the quantity of imports over this period has been relatively unchanged, driven by industry's need for higher quality salt. Because the quantity of imports remains unchanged, in years when domestic production is higher than average due to favourable weather conditions, total salt availability exceeds requirements. For example, in 2018 and 2019 when domestic production reached almost three million, total salt availability was about 5.5 million compared to a requirement of about 4 million. In such conditions, the price of salt falls, impacting in particular domestic salt farmers.

27 BSKJI, MoI presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

28 BPOM presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

Figure 8: Domestic production and imports of salt 2016 to 2023[29]



Past government efforts to support the domestic salt industry, e.g., PUGAR, have therefore included efforts to improve the quantity and quality of raw salt and to control imports of salt in order to increase purchase of raw domestic salt. Such efforts have had varying success. For example, fifteen salt processors signed a Memorandum of Understanding (MoU) with Coordinating Ministry for Maritime Affairs and Investment (CMoMAI) in 2019 agreeing to absorb 1.1 million MT salt produced by the traditional farmers. However, they were able to purchase less than half of the agreed amount (43% or 474,867 MT).[30] Raw salt that is not absorbed often ends up as non-iodized salt in households in the vicinity of salt production areas.[31] Ensuring the absorption of all raw salt by processors is therefore key to reducing the proportion of households consuming non-iodized salt.

The Directorate of Upstream Chemicals, MoI advised that there is a plan to revise the SNI for consumption salt to lower the required level of sodium chloride (NaCl). This is apparently in response to health concerns about sodium consumption. It would also facilitate increased domestic production of salt because a lower NaCl requirement would be easier for domestic producers to achieve. These are potentially false gains, however because lowering sodium chloride levels simply reduces the purity of the salt and will not necessarily reduce sodium intake and the Indonesian standard for sodium chloride content in salt is already lower than many neighbouring countries and the Codex standard for food grade salt. The Codex standard for sodium chloride level in food grade salt is 97%; it is 94% in SNI 3556:2016.[32]

The government has made a decision to develop the domestic salt industry with the goal of becoming self-sufficient in salt by 2024; with the exception of salt for the chlor alkaline industry, which will be imported.

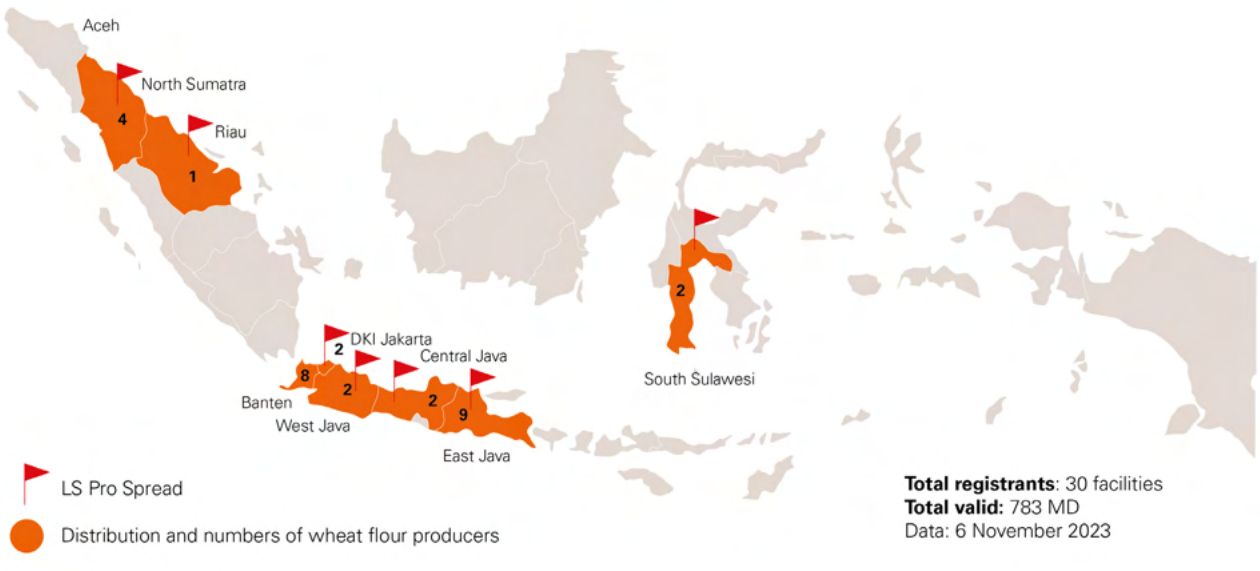
29 Coordinating Ministry for Maritime Affairs and Investment, October 2023
30 GAIN. Review of salt iodisation and rice fortification programs in Indonesia. May 2021
31 UNICEF and Micronutrient Initiative (2017). Review of Progress Towards the Sustained Elimination of Iodine Deficiency Disorders in Indonesia.
32 CODEX STAN 150-1985. Standard for food grade salt. Adopted in 1985; Revised in 1997; 2012; Amended in 1999; 2001; 2006. [https://shorturl.at/ijvQU]

Presidential Regulation 126 of 2022 on Acceleration of National Salt Development has been issued in this regard and includes details of how the national policy will be implemented. Targeted domestic production of the National Salt Development Plan is 2 million tons by the end of 2024.[33] Average domestic production over the last few years has been about 1.5 million tons. The Coordinating Ministry for Maritime Affairs and Investment (CMoMAI) is responsible for implementation of the government regulation on national salt development and on achieving this target. Domestic salt production is being increased by encouraging investment to the salt industry, expanding salt production areas, developing integrated salt fields, subsiding processing facilities and developing appropriate innovations. The Presidential Regulation also encourages the development of "geographical indication" salt i.e. artisanal salt made by traditional methods from various regions of Indonesia. The objective is to safeguard traditional practices and to develop local, traditional industries. This regulation is widely perceived as being negative for salt iodization but the corresponding workplan aims to improve quality as well as quantity and to ensure the 'absorption' of domestically produced salt by salt refineries, where iodization traditionally takes place. The workplan also includes increased enforcement by BPOM in order to ensure iodization. Meanwhile, geographical indication salt is still required to comply with the consumption salt SNI and to be iodized and the scale of production will be limited. This Landscape Analysis did not find that this regulation is contradictory to the national policy for mandatory, universal salt iodization.

4.2 Wheat Flour

Indonesia's entire wheat flour supply is milled from imported wheat grain. The imported wheat grain is milled in 30 mills belonging to 22 companies. [See Figure 9] Twenty-four of the 30 mills are members of APTINDO, the wheat miller's association; membership is by mill, rather than company. The 24 mills that are members of APTINDO represent 99.5% of wheat flour market share. The number of mills has risen exponentially from just 5 mills in 1998. Total capacity of all the mills is 14.4 million metric tons; far in excess of Indonesia's needs. Companies owning many of these mills are also food producers, producing wheat flour products that are exported out of Indonesia. Indofood is the owner of the biggest mill in Indonesia – Bogasari Mill – and is one of the biggest global suppliers of instant noodles.

Figure 9: Distribution of BPOM-Registered Wheat Flour Mills[34]

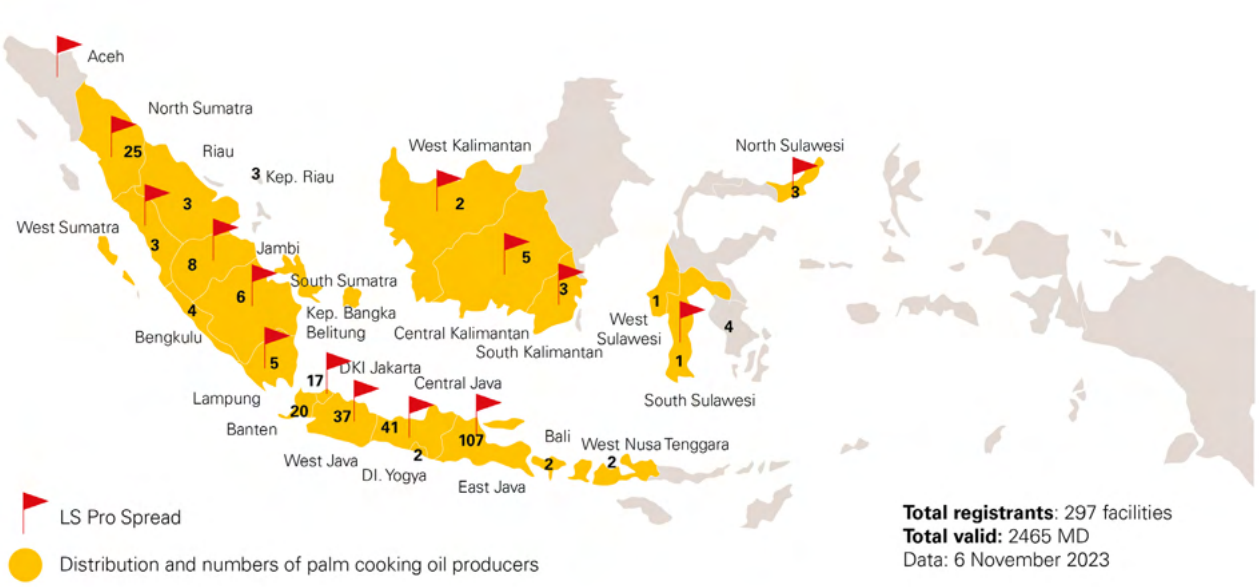


33 Regulation of the President of the Republic of Indonesia Number 126 of 2022 concerning acceleration of national salt development.
34 BPOM presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

4.3 Cooking Oil

The palm oil refining industry in Indonesia is consolidated with about 77 production companies, of which the top 5 supply 70% of domestic requirements.[35] The 77 production companies have about 300 refineries, located across the country, with the greatest number in Central and East Java. [See Figure 10]

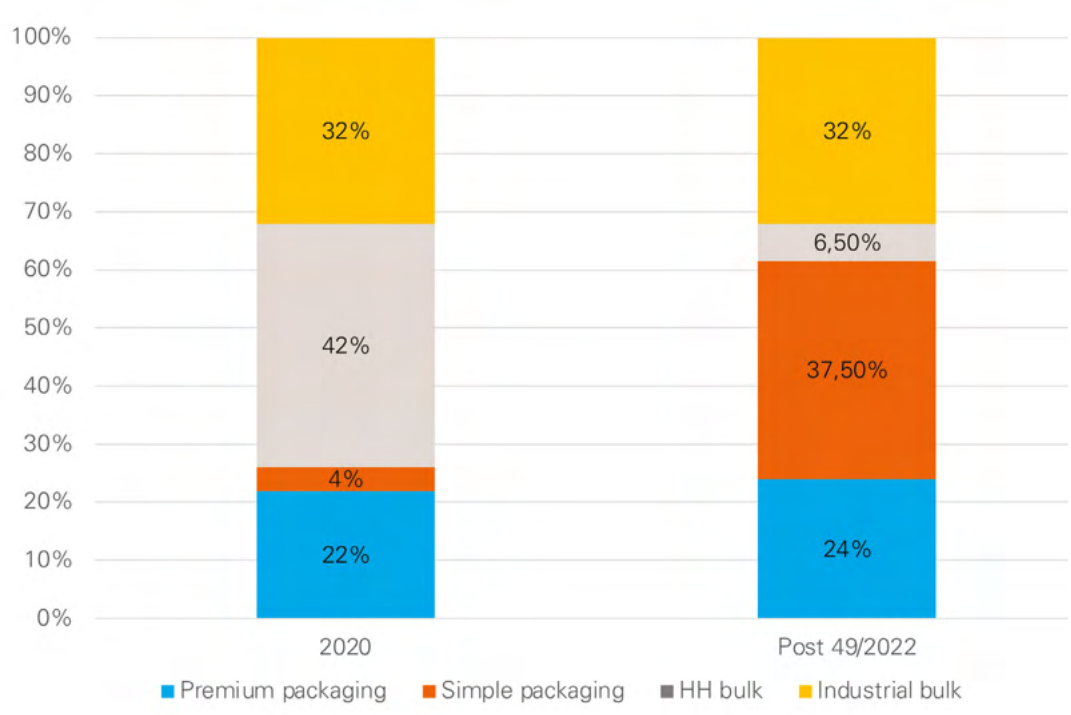
Figure 10: Distribution of BPOM-Registered Palm Cooking Oil Refineries[36]



Traditionally, the majority of domestic oil for food consumption has been sold in bulk, either to food producers or to retail markets, allowing households to purchase unbranded oil in small, affordable amounts. Since 2014 however the government has had a policy that all bulk oil intended for households should be packaged. Multiple regulations were issued to regulate packaging and other distribution and trade issues. There was limited success however in changing packaging, due in part to opposition from middlemen and retailers. In 2022 the government launched the "People's Cooking Oil Programme" which aims to provide fair and equal access to affordable cooking oil for the public. The programme includes requiring oil refineries to fulfil domestic market obligations before they can get export quotas, establishing a maximum retail price and requiring oil to be packaged in "simple packaging" under the *Minyakita* brand. The programme appears to have been successful in increasing the proportion of household cooking oil that is packaged. BPOM reports that there are 157 registered producers and packagers of *Minyakita* in 16 provinces and 485 registered *Minyakita* brands for the years 2022 and 2023. As shown in Figure 11 bulk household oil has fallen from 42% to 6.5%; the proportion of oil in "simple packaging" has increased correspondingly from 4% to 37.5%. This has implications for fortification as will be discussed in Section 5.2.

35 MoI presentation on Cooking Oil Policy, 5 October 2023.
36 BPOM presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

Figure 11: Change in cooking oil packaging following launch of the People's Cooking Oil Programme and Minyakita[37]



4.4 Rice

Indonesia is almost self-sufficient in rice production. Domestically grown rice is milled by just under 170,000 millers across the country. PERPADI, the Indonesian Rice Millers and Traders Association, estimates that 95.06% (161,401 millers) are small scale (up to 1.5 tons/ hour), 4.32% (7, 332 millers) are medium scale (more than 1.5 up to 3 tons/ hour) and 0.62% (1,056 millers) are large scale (more than 3 tons/ hour). However, considering absolute numbers of millers is misleading. Although only 0.62% of mills are considered big, the top five of these, which includes BULOG, produce just under 1 million tons of rice per year, which is 3.2% of the total rice requirement.[38] The big and medium size mills together mill about 40% of total domestically produced rice and if all big mills (1,056) operated at full capacity they could theoretically mill, and fortify, Indonesia's entire rice requirement. Nevertheless, rice is the least consolidated industry of all the staple foods considered for fortification and the fragmented structure of the rice industry is the main reason rice is not mandatorily fortified in Indonesia. The thousands of small mills lack the capacity and resources to access fortified rice kernels, to consistently and evenly blend them into the rice and to market fortified rice.

37 Directorate General of Domestic Trade, Ministry of Trade, 2023
38 5 largest rice millers are Pertani (300,000 T/yr), BULOG (200,000T/yr), Food Station Tjipinang (180,000T/yr), PT Buyung Putra Sembada (150,000T/yr) and PT Sumber Energi Pangan (125,000T/yr). Total annual production is 955,000T/yr out of annual national requirement of 31 million T/yr or 3%.

05

Key Findings

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5.1. Legislation, Regulations and Standards

Legislative Framework for Mandatory Food Fortification

The legal framework for food fortification in Indonesia is based on three acts: the Food Security Act (No. 68, 2002), the Food Labeling and Advertising Act (No. 69, 1999), and the Law on Food Safety Quality and Nutrition (No. 28, 2004), which are all anchored in the 2012 Food Act. The Law on Food Safety, Quality and Nutrition delineates responsibilities as follows:

a. The Minister of Health "determines the type and amount of nutrients to be added as well as the foods whose nutritional value can be increased through enrichment and/or fortification."
b. The Minister of Industry "determines the types of food that must be enriched and/or fortified" (as determined by the Minister of Health) and "procedures for enriching and/or fortifying certain food nutrients" that are recognized as deficient
c. All producers of food that must be enriched/or fortified "is obliged to comply with the provisions and procedures for nutritional enrichment and/or fortification" as specified by the Minister of Health

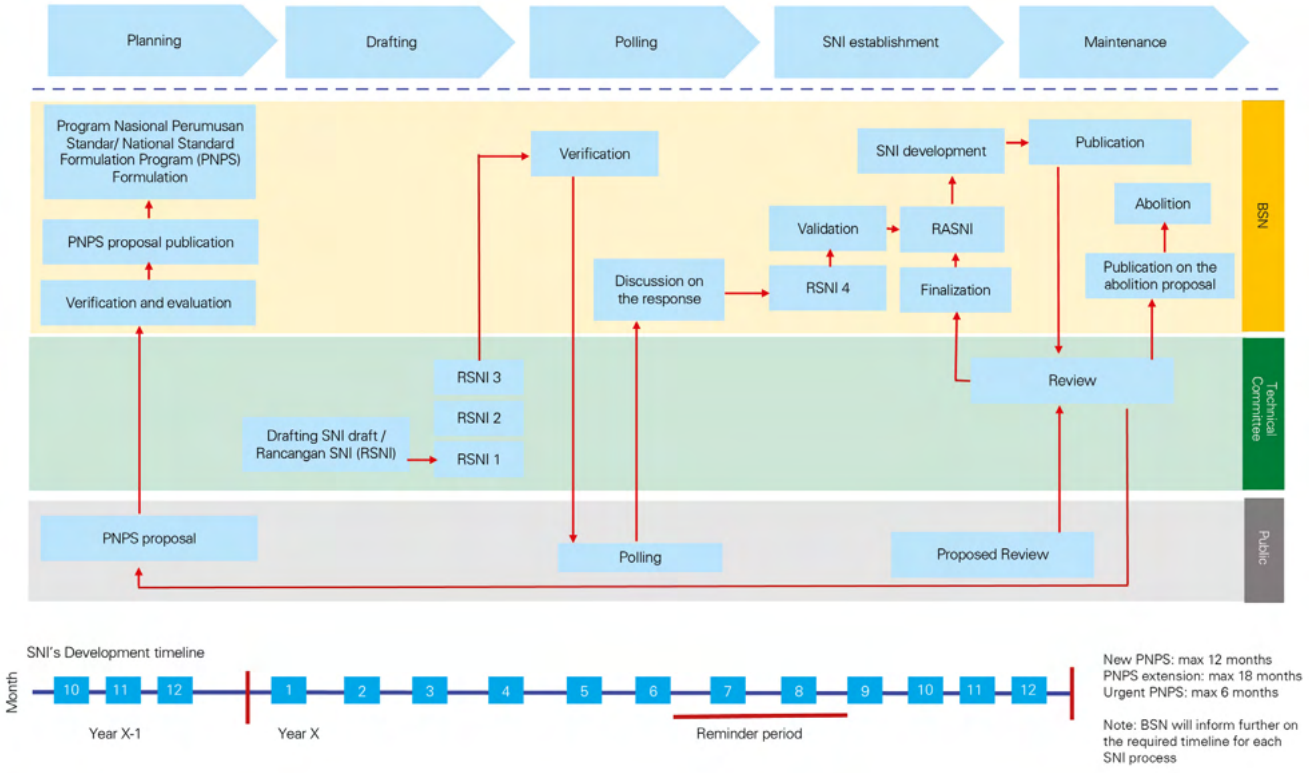
Although this seems straightforward, in practice the division of responsibilities and administration for food fortification is complicated and involves many actors, and the process of developing laws, acts, and regulations is complex, elaborate, and takes time.

National Standards for the Food Vehicles and Related Products

Within the larger legal framework of the food-related acts, the principal legal instrument for food fortification is the SNI (Indonesian National Standard). The SNI is applied to products and services nationally in Indonesia and is used to determine the conformity of the product to the standard.[39] Food SNIs specify food quality and safety parameters, including fortification requirements, providing the basis for regulatory enforcement of food fortification. Developing SNIs is a multistep process that involves many stakeholders and several consensus processes lasting more than a year as shown in Figure 12 below. SNIs apply at the level of production and may be voluntary or mandatory, with the criteria for designating a mandatory SNI being safety, security, health, or the preservation of environmental systems.[40] Currently there are seven mandatory SNIs for food or drink — bottled drinking water, cocoa powder, instant coffee, biscuits, salt, flour and edible oil — with only the last three including fortification requirements. In addition, the SNI for margarine includes fortification with vitamin A and D but it is voluntary.[41] No other SNIs include fortification requirements.

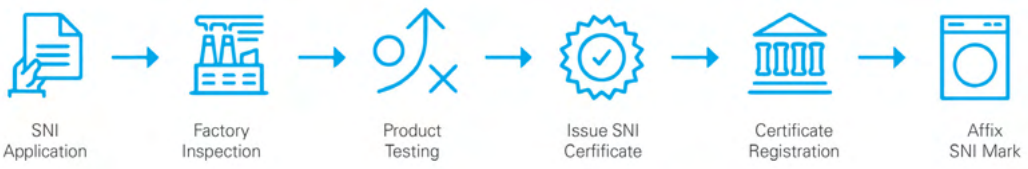
39 Clause 4 from Indonesian Law Number 20 of 2014 on Standardization and Conformity Assessment
40 Indonesian Law Number 20 of 2014 on Standardization and Conformity Assessment
41 SNI 3541:2014

Figure 12: Process for Development of Indonesian National Standards (SNI)[42]



If the SNI is mandatory or if a producer wants to use the SNI stamp on the product packaging, an SNI certificate is required. The SNI certificate is obtained via a product certification system. The certification system includes product sample testing, quality system assessment and surveillance during the entire production process. It is conducted locally in Indonesia through a third-party Conformity Assessment Body (LSPro), accredited by the National Accreditation Body of Indonesia (KAN). [See Figure 13]

Figure 13: Necessary steps for use of SNI[43]



Thus, fortification requirements for salt, wheat flour and palm cooking oil are reflected in the SNIs for these foods. Some SNIs have been updated and Tables 1-3 below show the different versions, including the main change(s) and other relevant information to fortification. Table 1 on salt also presents SNIs for other categories of salt or SNIs relevant for salt fortification.

42 Regulation of the National Standardization Agency of Indonesia Number 8 of 2022 on Indonesia National Standard Development
43 UL Solutions. Indonesia National Standard (SNI) Mark. [https://www.ul.com/resources/sni-certification-guide-indonesian-national-standards]

Table 1: Variations of SNI 3556 for iodized consumption salt and other salt-fortification related SNIs[44]

Product (English & Bahasa)	SNI number	Versions	Status	LA has seen SNI document	Main change	Min NaCl content (%)	Min Potassium iodate level (ppm)
Iodized consumption salt (Iodisasi garam konsumsi)	01-0221	1987	Valid*	No	*Not applicable*	?	?
Iodized salt (*Garam beryodium*)	01-0223	1987	Valid*	No	*Not applicable*	?	?
Consumption salt (*Garam konsumsi)*	01-3556	1994	Not valid	Yes	Type 1: Table salt Type 2: Kitchen salt	97.1 & 94.7	30-80
Kitchen salt (*Garam dapur*)	01-3556	1999	Not valid	No	Replaced by 01-3556:2000	?	?
Iodized consumption salt (*Garam konsumsi beryodium)*	01-3556	2000	Not valid	Yes	Merge SNI 01-3556-1999/ Rev 1994, *Garam Dapur* and SNI 01-3556.2-1999 *Garam Meja*	94.7	30
Seasoning salt (*Garam gurih*)	01-3556-1[45]	1999	Valid	No		?	?
Table salt (*Garam meja*)	01-3556-2	1999	Not valid	No	Replaced by 3556:2000	?	?
Iodized consumption salt (*Garam konsumsi beryodium)*	3556[46]	2010	Not valid*	Yes	To reduce NaCl content	94	30
		2016	Valid	Yes	To revise requirements for sampling & testing	94	30
Product (English & Bahasa)	**SNI number**	**Versions**	**Status**	**LA has seen SNI document**	**Main change**	**Min NaCl content (%)**	**Min Potassium iodate level (ppm)**
Raw material for iodized salt (*Garam bahan baku untuk industri garam beryodium*)	4435	1998	Not valid	No	*Not applicable*	?	*Not applicable*
		2000	Not valid	Yes	To revise the requirements for sampling, testing, and packaging	94.7	*Not applicable*
		2017	Valid	Yes	Recognize three grades of raw salt; primary difference is NaCl & insoluble content	85-94[47]	*Not applicable*
Salt for the food industry (*Garam industri aneka pangan*)	8207	2016	Valid	Yes	*Not applicable*	97	30

44 Assessment and Conformity Information System of SNI: http://sispk.bsn.go.id/SNI/DaftarList. Contrary to the information on this website, BSN, Directorate of Standard Implementation System has advised this LA that 01-0221/1987 and 01-0223/1987 are not valid and 3556/2010 is valid.

45 BSN, Directorate of the Development on Agro, Chemical, Health, and Halal Standard comment is that NaCl is min 87% and KIO3 is 30-80 but this LA has not been able to obtain a copy of this SNI

46 BSN regulation no 323/ KEP/BSN/12/206 of 2016 indicates that 3556/2010 has been replaced by SNI 3556/2016 and 3556/2010 is no longer valid. However, BSN Directorate of Standard Implementation System advised this LA that 3556/2010 is valid.

47 Three grades of raw salt are recognized K1, K2, K3. K3 is allowed to have only 85% NaCl whereas K1 is required to have at least 94% NaCl

Low sodium salt	8208	2016	Valid	Yes	*Not applicable*	60	30
Iodized liquid consumable salt	8209	2016	Valid	Yes	*Not applicable*	23-25	30
Salt for the caustic soda industry (*Garam untuk industri soda kaustik*)	0303	1989	Not valid	No		?	*Not applicable*
		2012	Valid	Yes	Appears to the only SNI for "industrial salt"	96	*Not applicable*

*BSN has advised alternative status; see footnote

As Table 1 shows, there are a confusingly large number of SNIs for different types of salt and salt-fortification related products. The main SNI relevant for salt fortification is SNI 3556 for "garam konsumsi beryodium/iodized consumption salt". Comments on this array of salt related SNIs are as follows:

- As the table shows there are multiple versions of SNI 3556 including versions with 01 before the main number and 1 or 2 after the main number. The significance of these additional digits is not clear. It seems for example that the following are all SNIs for different products: 01-3556/1999, 01-3556-1/1999 and 01-3556-2/1999.
- SNI 3556 (without any addition digits before or after) was first issued in 2010 and then updated in 2016. There does not appear to be agreement within BSN however on which of these is currently valid. Stakeholders are similarly confused. [See also Figure 14]
- SNI 3556 is for "iodized consumption salt" – i.e., the fortified form of the food; this implies there might be an SNI for the unfortified form of the food. It should be noted that the SNIs for both wheat flour or cooking oil include fortification requirements but do not mention "fortified" in the name and are not specifically for the fortified version of the food.
- SNIs 01-0221-1987 and 01-0223-1987 for 'iodized consumption salt' and 'iodized salt' respectively are both shown as valid in the BSN website[48] and potentially conflict with SNI 3556 for iodized consumption salt. However, BSN[49] has indicated that these two SNI are not valid, i.e., information provided by BSN to this LA conflicts with information on their website.
- SNI 01-3556-1-1999 appears to be a specialty household salt which could provide a loophole to fortification of consumption salt if it is not required to be fortified. BSN[50] has advised that it is required to be fortified with 30-80ppm of potassium iodate, but this LA has been unable to obtain a copy of the SNI to see the details.
- SNIs 4435 and 8207 are potentially very helpful for salt fortification. SNI 4435 allows lower grade salt to be used to make iodized salt and SNI 8207 requires salt used in processed foods to be iodized. At this time, however, neither of these are mandatory. See further discussion below on the implications of these two SNIs.
- SNI 8209 is iodized liquid consumable salt; it is not clear what this is
- SNI 0303 appears to be the only SNI for "industrial", as opposed to "non-food" salt. This is relevant because in principle all food salt (salt intended for human and animal consumption) should be fortified, and it is important to know how to differentiate food salt from non-food salt. Salt for the caustic soda industry (SNI 0303) has a higher NaCl content than all other types of salt in the table except SNI 8207 which is salt for the food industry. I.e., "industrial salt" appears to be differentiated by the NaCl content. There is the perception that "industrial salt" does not need to be fortified but salt for the food industry is required to be fortified as per the original Presidential Decree of 1994.

48 Assessment and Conformity Information System of SNI: http://sispk.bsn.go.id/SNI/DaftarList.
49 Directorate of Standard Implementation System, BSN
50 Directorate of the Development on Agro, Chemical, Health, and Halal Standard, BSN

Table 2: Variations of SNI 3751 for wheat flour

Product (English & *Bahasa*)	SNI number	Variations	Status	Main change
Wheat flour as a foodstuff (*Tepung terigu sebagai bahan makanan*)	3751	1995	Not valid	N/A
		2000	Not valid	To include fortification requirements
		2006	Not valid	To revise requirements for sampling & testing
		2009	Valid	To revise requirements for sampling & testing
		2018	Valid	To specify allowed iron compounds

Unlike for salt, there is only one SNI for wheat flour intended for consumption. This SNI has been updated several times for reasons shown in the table. Earlier versions are no longer valid but the fact that both the 2009 and 2018 versions are both valid, according to BSN website[51], is potentially confusing.

Table 3: Variations of SNI 7709 for palm cooking oil

Product (English & *Bahasa*)	SNI number	Variations	Status	Main change	Vit A content (IU/g)
Palm cooking oil (*Minyak goreng sawit*)	7709	2012	Valid	N/A	45
		2019	Valid	Vit A content can be from "pro vitamin A" (carotene) or vitamin A	45

As for cooking oil, there is only one SNI for palm cooking oil and it has only been updated one time. Both versions included the fortification requirement of 45 IU/g. Both versions remain valid however, according to the BSN website.[52]

Indonesian Fortification Requirements Compared to International Recommendations

Salt

International recommendations for salt fortification were issued by WHO in 2014.[53] They aim to achieve the mean recommended nutrient intake of 150ug iodine/day and take into consideration the amount of salt consumed through both direct consumption and processed foods. They also assume 30% loss of iodine from production to consumption, and a 92% iodine bioavailability. They are intended to apply at production level. The most recent data available on Indonesia's salt consumption is from 2013;[54] it indicates consumption amount of 8.5g/c/d. Given this consumption amount, WHO guidelines indicate that 23ppm of iodine should be added. Indonesia's SNI for iodized consumption salt (SNI 3556: 2000- 2016) indicates the addition of 30ppm of potassium iodate; this is the equivalent of 18ppm of iodine.[55]

The level of iodine added to Indonesian salt is therefore lower than that recommended by WHO and may be too low to achieve the full benefits of salt iodization. The opportunity lost is exacerbated by the fact that all salt used in food processing is not currently iodized [see section below on Scope] although 58% of salt is consumed through processed food or salted fish.[56]

51 Assessment and Conformity Information System of SNI: http://sispk.bsn.go.id/SNI/DaftarList.
52 Assessment and Conformity Information System of SNI: http://sispk.bsn.go.id/SNI/DaftarList.
53 WHO. Guideline: fortification of food-grade salt with iodine for the prevention and control of iodine deficiency disorders. Geneva: World Health Organization; 2014
54 Powles J et al. BMJ Open 2013;3:e003733. doi:10.1136/bmjopen-2013-003733
55 Potassium iodate contains 59% of iodine; hence 30ppm of potassium iodate contains 18ppm of iodine. Ref: John T. Dunn, in Encyclopedia of Endocrine Diseases, 2004
56 Based on Directorate of Upstream Chemicals, MoI 2022 data on salt requirements. Total food requirements were 1,883,376MT of which 601,425 was for the food industry and 499,987 was for the salted fish industry (1,101,412 in total = 58% of 1,883,376). 2023 data includes commercial (restaurant) and plantation/livestock salt in the "food industry" category and so has not been used for this calculation

Confusion has also been caused by the fact that the iodine content is reflected as the amount of fortificant compound (potassium iodate – 30ppm) rather than the amount of the mineral (iodine – 18ppm), as is the norm in most other countries and Indonesia's SNIs for wheat flour and cooking oil.

Wheat Flour

WHO recommendations for wheat flour were issued in 2009[57] and updated in 2022.[58] As for salt they take into consideration the estimated amount of wheat flour consumed. Wheat flour requirement figures from APTINDO suggest wheat consumption in Indonesia is 89g/capita/day. WHO recommendations are thus to add the following:

- 40ppm of iron as NaEDTA or ferrous sulphate or 60ppm of iron as ferrous fumarate. The use of electrolytic iron is not recommended at this level of wheat flour consumption
- 2.6ppm of folic acid
- 55ppm of zinc as zinc oxide.

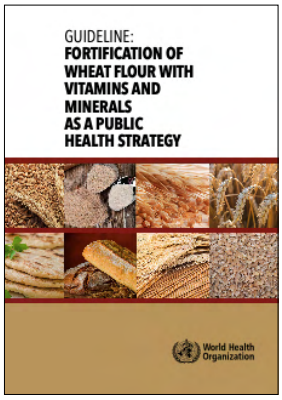


Table 4: Extract from 2022 WHO Guidelines concerning iron, folic acid and zinc. Guidance on B vitamins, vitamin A and D and calcium are not shown[59]

			Amount of nutrient to be added in (mg/kg wheat flour) based on estimated average per capita wheat flour consumption			
Nutrient	**Flour extraction rate**	**Chemical form of the compound**	**<75g/day**	**75-149g/day**	**150-300g/day**	**>300g/day**
Iron	Low	NaFeEDTA	40	40	20	15
		Ferrous sulfate	40	40	30	20
		Ferrous fumarate	60	60	30	20
		Electrolytic iron	NR	NR	60	40
	High	NaFeEDTA	40	40	20	15
Folate	Low or High	Folic acid	5.0	2.6	1.3	1.0
Zinc	Low	Zinc oxide	95	55	40	30
		Zinc sulfate				
		Zinc acetate				
	High	Zinc oxide	100	100	80	70
		Zinc sulfate				
		Zinc acetate				

Wheat flour fortification requirements were first set in Indonesia in 2000 before any international recommendations were released. The 2000 levels were set based on fortification levels in the 30 countries with mandatory fortification at the time and did not take into consideration the fact that wheat flour consumption in Indonesia was much lower than in those countries.[60] Moreover, the 2000, 2006 and 2009 versions of the SNI did not specify the allowed iron compounds and Indonesian millers chose to use electrolytic iron as it is the cheapest iron compound and the least reactive.

57 World Health Organization, FAO, UNICEF, GAIN, MI, & FFI. Recommendations on wheat and maize flour fortification. Meeting Report: Interim Consensus Statement. Geneva, World Health Organization. 2009 (https://apps.who.int/iris/bitstream/handle/10665/111837/WHO_NMH_NHD_MNM_09.1_eng.pdf)

58 WHO. Guideline: fortification of wheat flour with vitamins and minerals as a public health strategy. Geneva: World Health Organization; 2022. License: CC BY-NC-SA 3.0 IGO. Available at: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://iris.who.int/bitstream/handle/10665/354783/9789240043398-eng.pdf?sequence=1

59 WHO. Guideline: fortification of wheat flour with vitamins and minerals as a public health strategy. Geneva: World Health Organization; 2022

60 The 30 countries with mandatory wheat flour fortification in 2000 included the UK, US, Canada, several central and south American countries and Oman.

Following the release in 2009 of the WHO recommendations, international development agencies and NGOs working on food fortification including UNICEF, the Food Fortification Initiative and Nutrition International advocated for changes to the SNI to allow only the use of more bio-available iron compounds and to increase the requirements of iron, zinc and folic acid to follow WHO recommendations In 2017 the Ministry of Health wrote a letter to the Ministry of Industry asking for changes to the SNI and a revised SNI was issued in 2018. [See Figure 14]

Figure 14: Extract from SNI 3557:2018 with new specifications on fortification compounds and levels.

9	Fortificant			Other fortificants that should be added
9.1	Iron (Fe)	mg/kg	min.50	Iron (Fe) as Ferrous sulfate or Ferrous fumarate or Sodium Ferric EDTA compounds;
9.2	Zinc (Zn)	mg/kg	min.30	Zinc (Zn), as a Zinc oxide compound;
9.3	Vitamin B1 (tiamin)	mg/kg	min.2.5	VItamin B1 (thiamine) as the compound Thiamine Hydrochloride or Thiamine mononitrate
9.4	Vitamin B2 (riboflavin)	mg/kg	min.4	Vitamin B2 (riboflavin) as a Riboflavin compound or Sodium Riboflavin 5-phosphate;
9.5	Folic Acid	mg/kg	min.2	Folic Acid as a Pteroyl Monoglumic Acid compound
10	**metal contamination**			
10.1	Lead (Pb)	mg/kg	maks.1,0	
10.2	Cadmium (Cd)	mg/kg	maks.0,1	

The revised 2018 SNI specifies that only ferrous fumarate, ferrous sulphate and NaEDTA may be used as iron fortificant but the amounts of iron, zinc and folic acid were not changed and remain lower than WHO recommendations. This LA was not able to acquire minutes of meetings or documentation on reasons why previous levels of nutrient were maintained and why Indonesia chose not to follow WHO recommendations or even if they were taken into consideration. UNICEF and FFI had facilitated food studies on the application of WHO-recommended levels of fortification on commonly consumed wheat flour products in Indonesia but it is not clear if these were taken into consideration. Some industry organized food studies were reportedly considered but reports of these studies were not made available to this LA. Government, industry and development partner stakeholders provided the following reasons why the revised SNI was formulated as it was; these reasons however do not fully explain the final formulation of the 2018 SNI.

1. The SNI followed specifications indicated by the MOH in their letter to the MoI dated 29 November 2017. The letter requested the SNI be changed as follows and said that these specifications were based on the WHO recommendations and research that had been undertaken at the time. Although the MOH letter referred to WHO recommendations the below specifications only follow the WHO recommendations in relation to allowed iron compounds; they do not follow WHO recommendations in relation to the amounts of iron (which vary depending on the iron compounds used), zinc or folic acid. It is not known if the MoH recognized that WHO recommended higher levels of nutrients and what research the letter referred to.
    a. The iron should be 50 ppm ferrous fumarate/sulfate/EDTA
    b. Zinc- 30 ppm using zinc oxide
    c. Folic acid, vit B1, and vit B2 following the SNI wheat flour 3751: 2009

2. The change in iron compound from electrolytic iron to ferrous fumarate caused black spots. However, information provided by industry representatives confirmed that black spots were caused by a reaction with another additive in the flour, that is not actually permitted; that black spots only occur in steamed products such as dumpling wrappers, which constitute a very small proportion of products; and that black spots occur even when lower levels of fortificant are added. In fact, the appearance of black spots in specific products continued to be a problem after the new SNI came into force and millers had to work with their fortificant suppliers and customers to address the problem. Reports of black spots also appear to have been given more weight than the results of organoleptic trials specifically undertaken in preparation for changing the SNI.
3. It was agreed to 'compromise' on the amount of iron, folic acid and zinc added in order to get industry agreement to change the iron compound. It does not appear however that this 'compromise', which was referred to as a "win-win" situation, took into consideration that these levels of nutrients might reduce the effectiveness of wheat flour fortification in Indonesia.

Discussions on changing SNI 3751 started in 2009 when the initial WHO recommendations were first issued. Most discussions and meetings concluded that the SNI would be changed and that the WHO recommendations should be followed. The MoH and APTINDO in particular were supportive as both are committed to the objective of making wheat flour fortification as effective as possible in Indonesia. The revised SNI significantly improves the effectiveness of wheat flour fortification by specifying only recommended bio-available iron compounds, but the opportunity to make wheat flour fortification optimally effective has been missed. Recognizing that for years (2000-2018) they were fortifying with a potentially ineffective iron compound, APTINDO has asked for evidence of impact using the new SNI. This request will be difficult to satisfy however as baseline information on iron, folic acid and zinc status does not exist. Recognizing that the impact of wheat flour fortification may be relatively small because current levels of iron, zinc and folic acid are lower than WHO recommendations and wheat flour consumption in Indonesia is relatively low, the planned evaluation should be appropriately powered to pick up small improvements in micronutrient status i.e., changes in iron, folic acid and zinc status rather than prevalence of deficiency and/or proportion of people anemic.

The experience in revising SNI 3751 raises questions about the process of SNI development and revision in Indonesia. It was an extremely long process (taking into account that discussions about changing it started in 2009), it does not appear to be fully transparent in the sense that how and why decisions were taken do not appear to have been documented, and all relevant considerations may not have been taken into account.

Cooking Oil

There are no global recommendations for vitamin A levels in fortified vegetable oil. Of the 35 countries with mandatory vegetable oil fortification, required levels of vitamin A range from 6-41.25mg/kg as compared to Indonesia's requirement of 13.5mg/kg or 45 IU/g. These countries had oil consumption levels ranging from 5-37g/c/d compared to 23g/c/d in Indonesia. Cameroon and the Gambia have the same level of oil consumption as Indonesia; their fortification requirements are 13.2 and 35mg/kg respectively. It has been estimated that fortified cooking oil could contribute 30-41% of the RNI for women in Indonesia if fortified at 40IU/g (Indonesia's current SNI includes 45IU/g of vitamin A).[61]

The SNI for palm cooking oil was updated in 2019 to allow the required vitamin A content to be made up of both 'synthetic vitamin A – retinol palmitate' and 'pro vitamin A' or beta carotene, calculated as the vitamin A equivalent.[62] This was presumably due to arguments from the oil industry and health sector that palm oil contains 'natural' vitamin A.

61 Martianto D, Komari Soekirman et al. (2005) Possibility of Vitamin A Fortification of Cooking Oil in Indonesia: A Feasibility Study Report. Jakarta: Koalisi Fortifikasi Indonesia and Micronutrient Initiative and Martianto D, Sumedi E, Soekatri M et al. (2007) Marketing and Distribution Survey of Cooking Oil at Makassar City. Jakarta: Koalisi Fortifikasi Indonesia and Ministry of Health Indonesia.

62 12 µg of ß-carotene from food are required to provide the body with 1 µg of retinol https://lpi.oregonstate.edu/mic/vitamins/vitamin-A#:~:text=It%20has%20been%20determined%20that,RAE%20ratio%20of%2012%3A1. https://www.sciencedirect.com/topics/neuroscience/retinol-palmitate

Taking all the above into consideration, the amount of vitamin A in Indonesian cooking oil appears likely to be effective at improving vitamin A status. Effectiveness may be constrained however if oil consumption is lower than currently estimated, e.g., because amounts of oil actually consumed may be significantly lower than amounts of oil purchased or utilized in the household because significant proportions are used as a cooking medium rather than being consumed, and if many producers are using "pro vitamin A" rather than the more bio-available retinol palmitate.

Legislative Framework for the Mandatorily Fortified Foods

For mandatory SNIs, once the SNI has been issued, the Ministry with oversight of the product in question must issue regulations (i) making the SNI mandatory and (ii) to assign the certification body and laboratory responsible for enforcement of the SNI. For all the mandatorily fortified food products the responsible Ministry is the Ministry of Industry. In addition, technical implementation guidelines may be issued by the Ministry of Industry. As mandatory SNIs apply also to imported foods and could be considered a barrier to trade, it is also necessary to inform the World Trade Organization. The following figures illustrate the legislative framework for each of the mandatorily fortified foods, in particular regulations related to versions of the SNIs, but also other regulations related to mandatory fortification.

Figure 15: Legislative framework for mandatory salt iodization

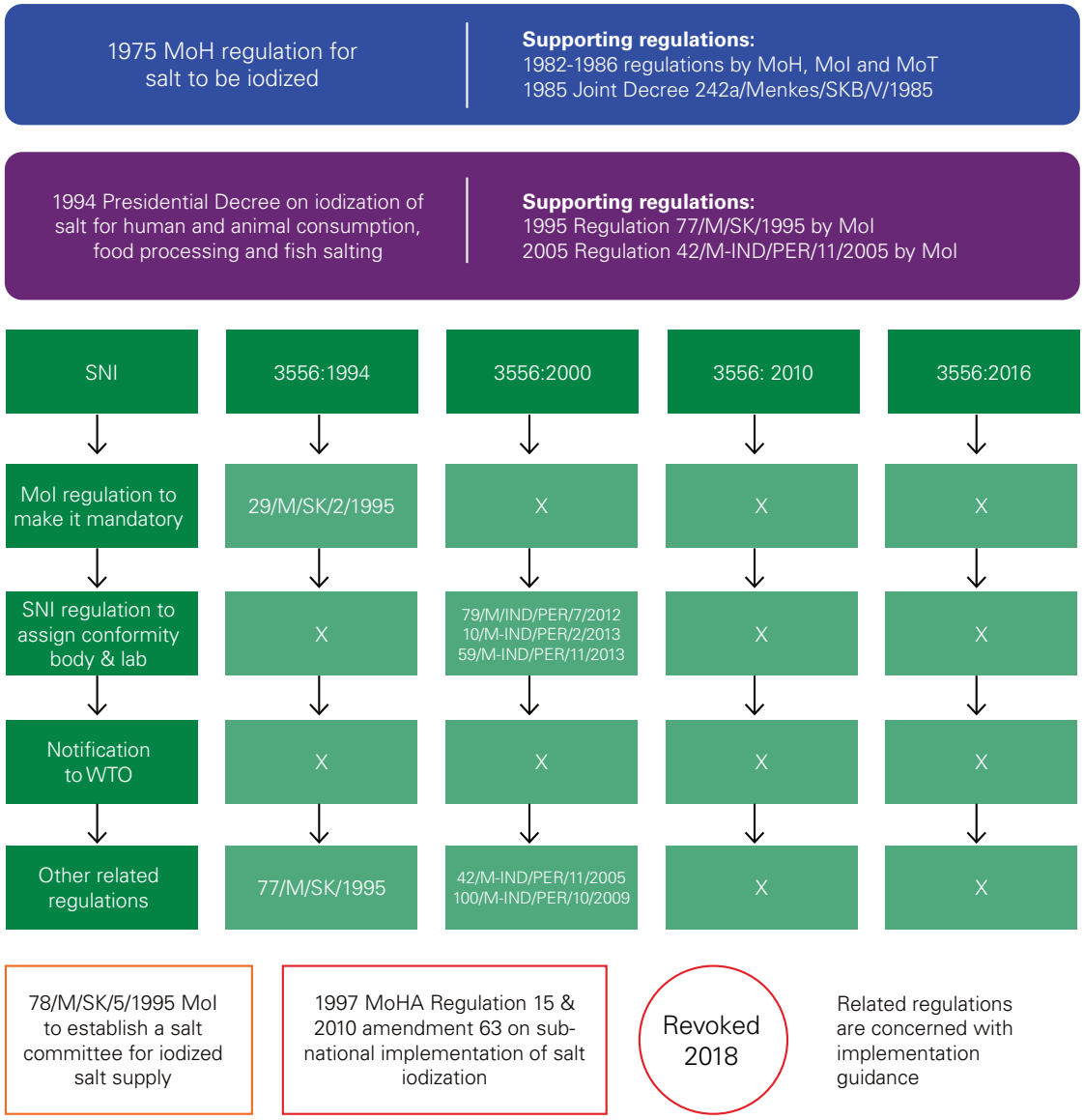
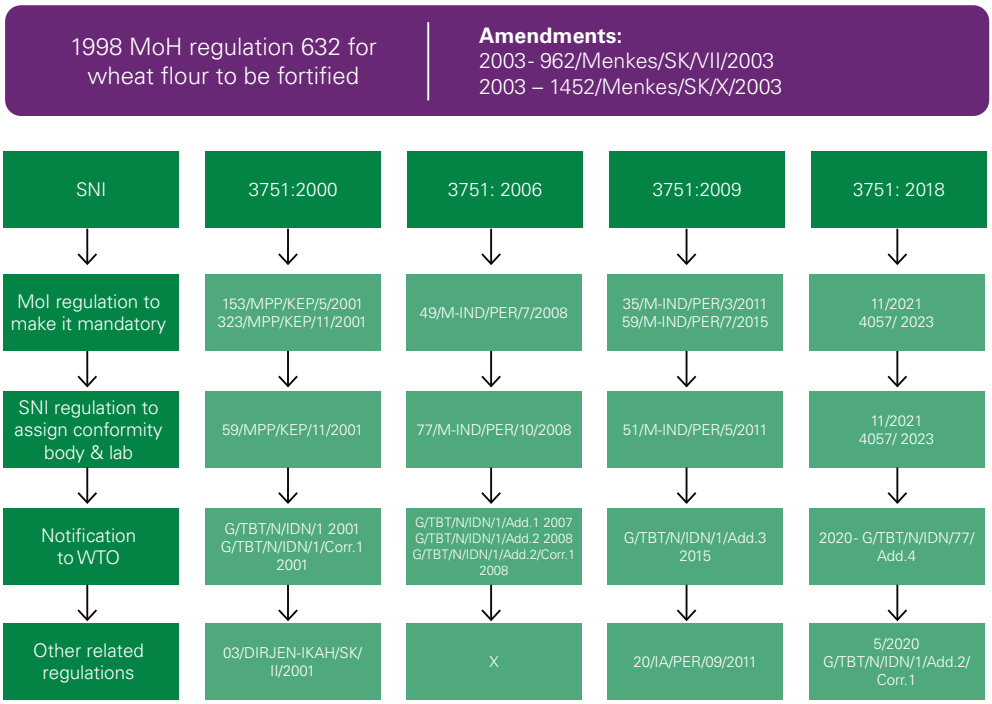
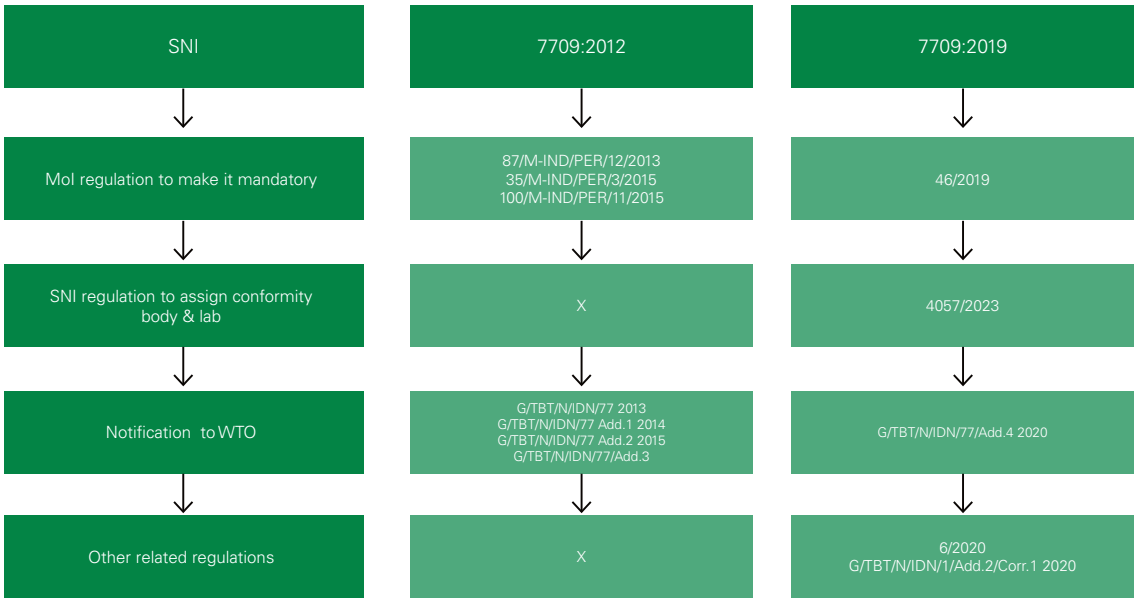


Figure 16: Legislative framework for mandatory wheat flour fortification



Related regulations are concerned with relaxation of fortification requirements during the Covid pandemic

Figure 17: Legislative framework for mandatory cooking oil fortification



These related regulations are regulations regarding packaging requirements and relaxation of fortification requirements during the Covid pandemic

As the above figures indicate, the legislative framework for the mandatory fortification of wheat flour and palm cooking oil are considerably less complex than that for salt. For both wheat flour and palm cooking oil, all the required supporting regulations and notifications have been issued, with the odd exception. For salt however, it seems that only the 1994 SNI has been made mandatory, the conformity body and laboratory for enforcement has only been issued for the 2000 SNI and the World Trade Organization (WTO) has not been informed of any of the SNIs. As already noted, there is also confusion over whether SNI 2010 or 2016 is valid.

However, SNI 3556/2016 is in BSN's Program Nasional Regulasi Teknis (PNRT; National Programme for Technical Regulations) plan; specifically, the PNRT plan indicates that BSN has proposed since 2020 that the MoI issue supportive regulations for SNI 3556/2016 to make it mandatory. Moreover, as already reported MoI has also indicated a plan to review this SNI. .[63]

Stakeholders interviewed as part of this Landscape Analysis refer to different versions off SNI 3556 as being mandatory, creating significant confusion and complications for monitoring and enforcement. In addition, the legislative framework for salt fortification is complicated by additional regulations from the Ministry of Health and a Presidential Decree, as well as regulations concerning sub-national implementation of salt iodization and management of iodized salt supply. Still more regulations concerning the salt industry and imports of salt, while not directly related to salt iodization, do have an impact on the implementation of salt iodization.

While the legislative framework for palm cooking oil is considerably less confusing and contradictory, there have been several regulations and multiple amendments on the management and packaging of bulk oil, which potentially impact oil fortification.

The legislative framework for the fortification of wheat flour provides a good example of how fortification can be required within the Indonesian legal system. The is only one SNI for wheat flour and from 2000 it included fortification requirements. The SNI has been updated as needed, including for reasons unrelated to fortification. There are MoI regulations for each version of the SNI to maintain it as mandatory and to assign a certification body. Each new version of the SNI has also been informed to the WTO. The only 'weakness' of the framework for wheat flour fortification is that it is complicated by a MoH regulation issued in 1998 with two amendments in 2003 which also make wheat flour mandatory. However, the 'complication' is mitigated by the second 2003 amendment which brought the fortification requirements indicated in the MoH regulation in line with the SNI that was issued in 2000.

Scope of Fortification Legislation

Salt

The Presidential Decree of 1994, which essentially initiated the modern salt iodization requirement, called for the fortification of all salt for human and animal consumption, including salt used in the food industry and for salting fish. However subsequent SNIs and regulations have not reinforced these requirements. No supportive regulations appear to exist to require or guide the fortification of salt for animal consumption and supporting regulations and implementation guidance are confusing and contradictory with regards to the use of iodized salt in the production of processed foods and salted fish.

With regards to the requirement to iodized salt for food processing, the MoI 2009 Roadmap for Development of the Salt Industry indicates that all salt for the "food industry" should be iodized, except for margarine and cooking oil.[64] The updated 2014 Roadmap[65] indicates both iodized and non-iodized salt can be used for food processing and it recategorizes salt for food processing as "industrial" rather than "consumption" salt. This allows it to be imported and potentially creates a loophole in the requirement for consumption salt to be fortified. Finally, SNI 8207 for salt for food processing, which was issued in 2016, includes iodization but is not mandatory. When asked, respondents to this Landscape Analysis had different opinions as to whether salt used in the production of processed foods should be iodized and BPOM does not monitor this aspect of universal salt iodization.

63 Program Nasional Regulasi Teknis (National Programme for Technical Regulations) 2024. [https://shorturl.at/fqyP5]
64 Regulation of the MoI No. No. 134/M-IND/PER/10/2009 on a Road Map for the Development of the Salt Industry
65 MoI Regulation on updated Roadmap for Development of the Salt Industry, No. 88: 2014

This ambiguity with regards to the use of iodized salt is concerning taking into consideration the low levels of iodine required by the SNI and the fact that 58% of salt that is consumed is used in food processing, including fish salting.[66]

In conclusion, the scope of the legislation for salt fortification is unclear, in particular in relation to the fortification of salt used in processed foods and this potential 'omission' could have significant impacts on the effectiveness of salt iodization.

Wheat Flour

As per SNI 3751:2018 and MoI regulation 1/2021, which makes it mandatory, "flour made from the endosperm of wheat seeds *Triticum aestivum* L. (*club wheat*) and/or *Triticum compactum"* is required to be fortified, with the "exception of flour/semolina made from Durum wheat (*Triticum durum Desf),* whole wheat flour/semolina, wheat flour intended for beer brewing or for starch and/or gluten production, wheat flour for non-food purposes and wheat flour that has undergone special treatment other than and/or bleaching." The fortification requirement applies to both packaged and bulk flour, domestically produced and imported. The scope of wheat flour fortification therefore appears optimal; it applies to all wheat flour with minor, reasonable exceptions.

Cooking Oil

As per SNI 7709:2019 and MoI regulation 46/2019, which makes it mandatory, all palm cooking oil produced domestically and imported from abroad and circulating in Indonesia is required to follow SNI 7709:2019 which includes fortification (Article 5 of 46/2019). In addition, all palm cooking oil indicated in Article 5 must be packaged (Article 6 of 46/2019). Palm cooking oil that is excluded from this (Article 5) requirement is oil for testing (for issuance of SNI certificate or research and development), for exhibition or for "raw materials for industry". The requirement to follow the SNI and fortify is further emphasized in Article 8 which says all "business actors are obliged to produce, import and/or distribute palm cooking oil in accordance with Article 5" and Article 9 requires all domestic producers and/or packers and all overseas producers and/or packers to have the SNI certificate. Article 28 advises that tank trucks or tankers of oil are not required to affix the SNI mark in the same way as packaged palm cooking oil but must have a photocopy of the SNI certificate and the certificate of analysis. Fortification is therefore required for all palm cooking oil, both bulk and packaged, but oil for use as a "raw ingredient", for example in production of processed foods, appears to be excluded from mandatory compliance with the SNI, including fortification. Thirty-two percent of cooking oil goes to the food industry[67]; thus, a significant proportion of oil is excluded from the fortification requirement. The Global Fortification Data Exchange (GFDx), which compiles global data on fortification has scope data for 26 of the 35 countries with mandatory oil fortification; all but two of them require oil for the processed food industry to be fortified.[68]

Stakeholders have differing opinions on the scope of cooking oil fortification; in particular several stakeholders understand or believe that it is not required to fortify "bulk oil" which goes primarily to processed food producers.[69] However, GIMNI recognizes that fortification applies to both packaged and unpackaged oil.[70] MoI regulation 46/2019 has been written in a confusing way and many stakeholders have interpreted it to say that fortification is only required for packaged oil; this has been a problem because as of 2020 as much as 42% of oil for the domestic market was not packaged.

66 Based on Directorate of Upstream Chemicals, MoI 2022 data on salt requirements. Total food requirements were 1,883,376MT of which 601,425 was for the food industry and 499,987 was for the salted fish industry (1,101,412 in total = 58% of 1,883,376). 2023 data includes commercial (restaurant) and plantation/livestock salt in the "food industry" category and so has not been used for this calculation

67 See Figure 11; 'industrial bulk' oil is for the food industry

68 Global Fortification Data Exchange. Fortification Legislation. Accessed 15/11/2023. [http://www.fortificationdata.org.]

69 Focus Group Discussion on Strengthening the Roles of Private Sector on the LSFF Implementation, 13-14 Nov 2023 and Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

70 Mr. Sahat Sinaga, President of GIMNI, Indonesian Vegetable Oil Association.

In 2022 however regulation 49/2022 was issued which associated compliance with the packaging requirement with meeting domestic market obligations and 'rewarded' producers with 'multipliers' for export of oil. A maximum retail price and generic brand "*Minyakita*" were also established. Since the implementation of this regulation, the proportion of oil with 'simple packaging' has increased from 4% to 37.5% and the proportion of bulk oil for households has fallen from 42% to 6.5%. [See Figure 11] Although the requirement to fortify was not linked to the requirement to package, this significant increase in the proportion of household oil that is packaged will facilitate the enforcement of fortification requirements.

Conclusions on the Legislative Framework of Mandatory Food Fortification

- In principal food fortification legislation is completely integrated into the food legislation framework through the SNI system which allows for an SNI to be made mandatory; Fortification requirements are indicated in the food standard and the Ministry responsible for the oversight of that food can make the SNI mandatory and authorize enforcement procedures.

- In practice however there have been some deviations from this straight forward 'SNI and supportive regulations' model, in the form of the Presidential decree on salt iodization and the MoH decrees on both salt and wheat flour fortification, in addition to subsequent regulations setting standards or guiding implementation.

- The process to making and maintaining some SNIs as mandatory (in order to require mandatory fortification) has been inconsistently applied over time and across foods. For some SNI versions there have never been MoI regulations that make the SNI mandatory and there have often been long delays between the issuance of revised SNIs and required follow up regulations to maintain the mandatory nature of the SNI. For salt in particular, it appears that only the 1994 SNI has ever been made mandatory

- Although the principals and steps to legislate for mandatory food fortification are logical and relatively simple, in practice the process is long, with multiple steps and multiple stakeholders. The fact that new MoI regulations and WTO notifications are needed for each new version of the SNI seems overly arduous. Moreover, the content of MoI regulations making SNIs mandatory is very varied; some include significant amounts of detail on implementation whereas others refer to already-existing systems. In principle, fortification should be integrated with all relevant aspects of food production, control and distribution such that very few new or fortification-specific regulations are needed, beyond the one making the SNI mandatory.

- The legislative framework for salt is particularly complicated and confusing with multiple SNIs for different types of salt and inconsistent application of follow up regulations to make the various SNIs mandatory and ensure their enforcement.

- Fortification requirements for salt and wheat flour do not follow WHO recommendations. Moreover, the reason or justification for this is not clear or widely understood raising questions on how decisions were reached and what was taken into account when setting fortification requirements in SNIs.

- The legislative framework for food fortification has been further complicated by a multitude of regulations governing the production or trade of some of the food vehicles such as regulations on the production of domestic salt, import of salt and the packaging of cooking oil. It is not clear that fortification has always been taken into consideration when making policy about the management of or trade in these fortification vehicles.

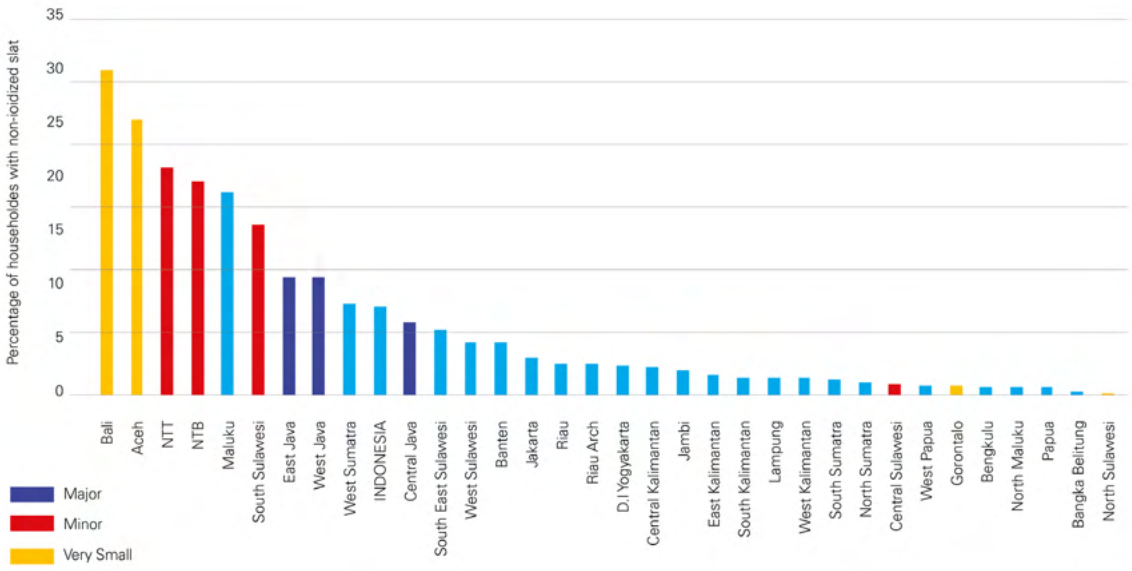
5.2. Sustainable & Profitable Production of Quality Fortified Food

Salt

Salt is iodized at the time of refining. As will be demonstrated by the following sections a significant proportion of salt is not iodized at all and some is not iodized to the national standard. There are different reasons for this.

In Indonesia and elsewhere, salt is generally not iodized if it does not pass through a processing facility and this most often occurs when supplies of raw salt exceed national requirements or when it is of poor quality and is not purchased by salt refineries. This 'unwanted' raw salt is then sold into nearby market, often unpackaged e.g. in sacks, for purchase by households. This salt is generally unmonitored and unregulated in any way but can be used in significant proportions of households in the vicinity of salt farms. Figure 18 below shows that the highest proportions of households with non-iodized salt are found in salt producing provinces. Previous national programmes to support and develop the salt industry have sometimes aimed to increase raw salt production without simultaneously improving the salt quality and/or establishing systems to ensure that raw salt is subsequently purchased by salt processors, with potential implications for the availability of non-iodized salt. In 2017, an SNI for "raw material for iodized consumption salt" was issued. SNI 4435:2017 recognizes three grades of "raw material" all of which have a lower sodium chloride content than iodized consumption salt. It therefore allows lower grade salt to be made into iodized consumption salt and so facilitates the domestic salt industry and reducing the availability of non-iodized salt.

Figure 18: Comparison of household use of non-iodized salt by province in 2013 and salt producing areas[71]



Of all the mandatorily fortified foods, salt is the most likely to be processed in small or medium scale facilities that lack the resources and commitment to comply with national standards. In contrast almost all cooking oil and wheat flour is processed in large scale facilities that can easily fortify. Small and medium scale salt facilities however may experience some or all of the following constraints: difficulty achieving required food quality and/or good manufacturing practices certifications (described in Section 5.3);

71 Source for proportion of households with non-iodized salt is from RISKESDAS 2013; salt tested by rapid test kit.

difficulty accessing or purchasing potassium iodate; lack of or poorly functioning iodization equipment; poor internal quality assurance practices, including calibration of equipment, and insufficient internal monitoring to identify poor iodization; and low-quality salt from which iodine is more likely to be lost. Such constraints don't occur in large scale facilities and are thus reduced as the industry consolidates and develops. The situation has therefore improved over time. Poor quality fortification can also be reduced by effective enforcement that encourages smaller facilities to make more effort to effectively fortify. The importance of effective enforcement is discussed further in the following section.

Wheat Flour

Indonesian wheat flour mills are large and sophisticated with adequate expertise and resources to make quality fortified flour. The second-largest mill in the world is in Indonesia. Indonesian mills also operate within a global wheat flour milling community in which fortification is the norm; 92 out of 196 (47%) countries currently have legislation for mandatory wheat flour fortification.[72] Poor quality fortification is thus unlikely to be related to poor capacity or inadequate resources.

Rather, recent fortification concerns from the milling industry have been in relation to impacts of fortification on organoleptic properties of final products. In particular the recent switch from using electrolytic iron as the iron compound to ferrous fumarate, revealed that in the presence of borax, some steamed or boiled products, such as wonton skin and chicken noodles, developed black spots. This was due to an interaction between the ferrous fumarate and the borax and was not caused by the ferrous fumarate itself. The appearance of the black spots differed depending on the particle size of the fortificant. The black spots were not found during organoleptic trials conducted in preparation for changing the iron compound and has only been reported in Mongolia, and no other countries in the region with mandatory wheat flour fortification. The solution is to use alternative additives rather than borax, which is in any case prohibited under Indonesian food safety regulations.

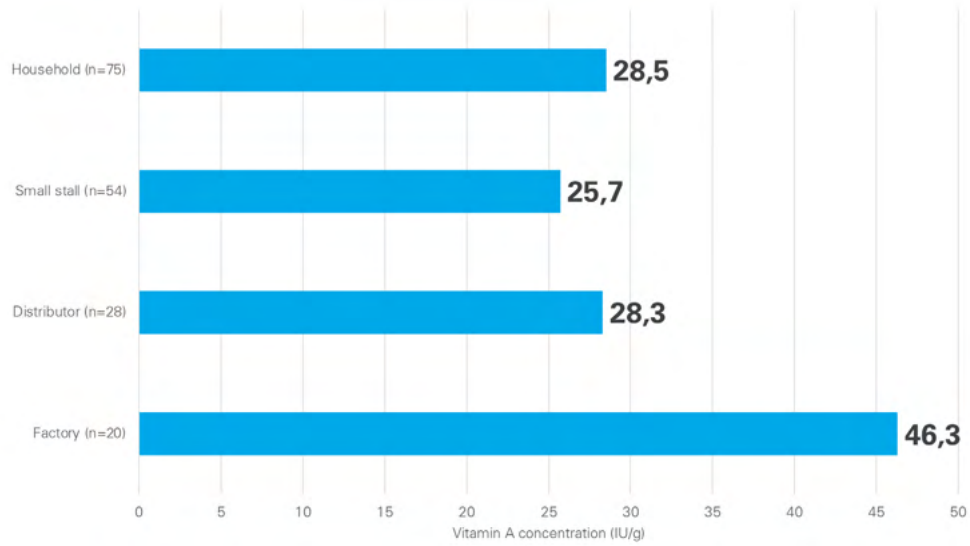
Cooking Oil

As with wheat flour, oil is refined in large refineries which already have all the necessary equipment for fortification. Most refineries also have all the necessary equipment for packaging oil for domestic use. GIMNI, the Indonesian Vegetable Oil Association confirmed industry commitment to fortification and the capacity to undertake it.[73]

There is a perception however that vitamin A is rapidly lost during distribution and cooking. Figure 19 below demonstrates that the vitamin a content falls by 39% between the factory and the distributor, but just over 61% of vitamin A is still retained at household level. At Indonesian levels of cooking oil consumption, the GFDx has calculated that fortified cooking oil should provide 0.31mg/day of vitamin A which is 62.56% of the EAR.[74] If only 61% of vitamin A remains in the oil at the time of consumption in the home, fortified cooking oil will still provide 37.5% of the EAR. Meanwhile a study in Bangladesh on losses of vitamin A during Asian style cooking that losses of vitamin A were less than 50% except in the case of deep frying when it was 55%. The study, which was carried out in Bangladesh, concluded that fortified vitamin A would still provide daily requirements if fortified to Bangladesh requirements of 33IU/g; lower than Indonesian requirements.[75]

72 Global Fortification Data Exchange. Fortification Legislation. Accessed 13/11/2023. [https://fortificationdata.org/interactive-map-fortification-legislation/]
73 Mr. Sahat Sinaga, President of GIMNI, Indonesian Vegetable Oil Association.
74 https://fortificationdata.org/nutrient-intake-for-all-food-by-country/
75 Akhtar et al. Loss of vitamin A in fortified edible oils and ghee during cooking in Asian traditional style. Bangladesh J. Sci. Ind. Res. 47(2), 243-248, 2012

Figure 19: Vitamin A concentration along the distribution chain[76]



5.3. Regulatory Monitoring for Enforcement of Compliance for Fortification

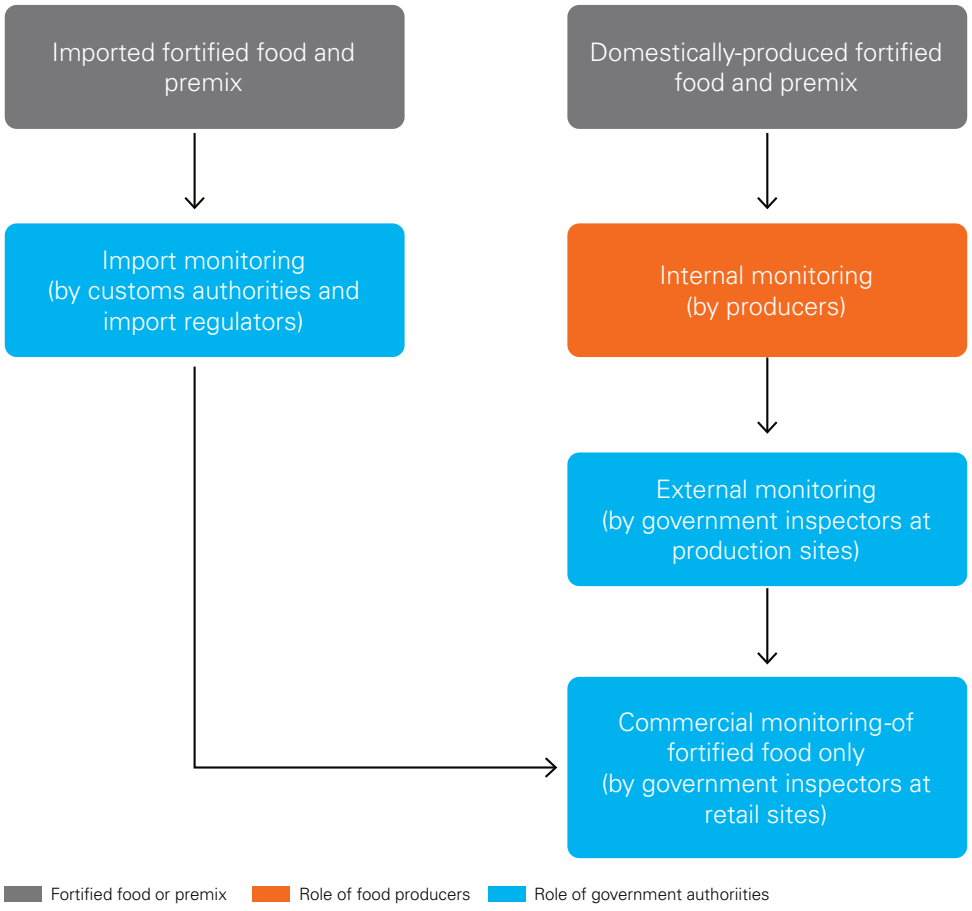
Principals of Regulatory Monitoring for Fortification

A primary principal of regulatory monitoring for compliance for fortification is that regulatory monitoring for food fortification is undertaken within the food control system, in recognition that food fortification is a food systems intervention. Therefore, global guidance on the regulatory monitoring of fortification[77] recognizes the roles and responsibilities by both food producers and by government authorities; food producers are responsible for internal monitoring within their production facility and government authorities are responsible for monitoring of imports, in production facilities and in the marketplace. [See Figure 20] Underlying this system are some key principles: (i) food producers and importers have the primary responsibility for ensuring quality fortification, through routine quality control and quality assurance practices in the production facility and procurement of imported fortified foods from suppliers with adequate procedures respectively. Thereafter the role of government is to verify adequate procedures by food producers and importers; (ii) As government's role is verification of adequate procedures, auditing of documentation of these procedures is as important, if not more important, than product testing, as product testing can only indicate the quality of the batch of food from which the sample is taken; and (iii) government inspections and product sampling should be prioritized at the points which can be most effectively and efficiently monitored which is usually the points of production or import (where relevant).

76 Sandjaja et al. Vitamin A-fortified cooking oil reduces vitamin A deficiency in infants, young children and women; results from a programme evaluation in Indonesia. Public Health Nutrition, 2015

77 Global Alliance for Improved Nutrition (GAIN) & Project Healthy Children (PHC). 2018. Regulatory monitoring of national food fortification programs: A policy guidance document. Global Fortification Technical Advisory Group (GF-TAG).

Figure 20: Components of Regulatory Monitoring for Food Fortification[78]



Regulatory Monitoring for Food Fortification in Indonesia

In Indonesia, regulatory monitoring of fortified foods is achieved through:

1. **Internal monitoring** by food producers [See Section 5.2 – production of quality fortified food]
2. Registration and licensing of food enterprises and products, referred to as ***pre-market surveillance***. This is equivalent to ***external monitoring*** in Figure 20
3. Monitoring of products in the market, referred to as ***post-market surveillance***. This is equivalent to ***commercial monitoring*** in Figure 20.

Role of BPOM

The overall responsibility for food quality and safety, including fortification compliance, lies predominantly with the National Agency for Drug and Food Control (BPOM), an autonomous agency. Inspection, and enforcement are done by BPOM through pre-market product registration and post market surveillance (product sampling and testing) and inspection of product facilities.[79] BPOM at national level undertakes facility and product surveillance through third party organizations (LSPro) authorized by BPOM and the MoI and accredited by KAN. Facilities need to pass a 'good manufacturing practices' assessment in order to receive a CPPOB certificate[80] and products with a mandatory SNI, such as salt, wheat flour and cooking oil, and all those for which the producers want to apply the SNI logo, require an SNI certificate in addition.

78 Global Alliance for Improved Nutrition (GAIN) & Project Healthy Children (PHC). 2018. Regulatory monitoring of national food fortification programs: A policy guidance document. Global Fortification Technical Advisory Group (GF-TAG).

79 Law no. 18 of 2012 concerning Food, Law no. 17 of 2015 concerning Food Security and Nutrition, Regulation of BPOM no 27 of 2017 concerning the Registration of Processed Foods and Law no. 86 of 2019 concerning Food Safety

80 BPOM and MOI regulations on CPPOB: BPOM Regulation No.22 Year 2021 about Procedure for Issuing and Implementation Permit on CPPOB [https://jdih.pom.go.id/download/product/1304/22/2021] and MoI Regulation (75/M-IND/PER/7/2010) on Guideline on CPPOB/ Good Manufacturing Practices [http://jdih.kemenperin.go.id/site/baca_peraturan/709]

BPOM then issues a distribution license (MD) enabling the product to be distributed in the country for facilities and products from those facilities that have both the CPPOB and the SNI certificate. The CPPOB assessments confirm compliance with good manufacturing practices by the facility while the SNI certificate verifies that the product complies with all criterial in the SNI, including fortification requirements. The CPPOB assessment involves a facility inspection, auditing of documentation and review of the Certificate of Analysis (CoA); it has to be renewed every two years. The SNI certificate involves a facility inspection, auditing of documentation and collection of a food a sample for testing. SNI certificates have to be renewed every two years. Data on SNI compliance at production level is not reported on.

BPOM also undertakes post-market surveillance in order to verify compliance with fortification. Priority products are identified each year and a sampling plan is developed based on a standard BPOM methodology. Fortified foods are considered priority foods and are sampled more intensively. In general, only packaged products, which can be traced back to the producer, are monitored although in principle unpackaged products could be monitored. This Landscape Analysis was not able to determine however what the post market surveillance samples are representative of; it seems, for example, that the sampling methodology involved collecting a sample of each brand available in the market but does not take into account the market share of each brand.

Samples are collected and sent to accredited laboratories for testing. BPOM tests for all parameters in the SNIs but fortified foods most commonly fail on fortification requirements rather than other parameters. Although levels specified in SNIs apply at production level, they are used to assess compliance at market level. The MoI regulation no 87 in 2013 which made SNI 7709:2012 for cooking oil mandatory specified vitamin A levels at distribution; it was supposed to be 40IU/g as compared to 45IU/g at production level. However, MoI regulation 46 in 2019, after SNI 7709:2012 was issued, did not indicate the required vitamin A level at distribution. Required nutrient amounts at distribution level have not been specified for other foods. A summary of results is published in the BPOM annual report and BPOM organizes an annual meeting with all relevant stakeholders to discuss results of the surveillance. BPOM also issues food importers with an SNI certificate and ML distribution license on the basis of auditing of documentation and collection of samples for laboratory testing. This forms their contribution to import monitoring together with Customs.

Role of Ministry of Industry

The Ministry of Industry also has a supervisory role, as it oversees quality control and food safety in food production,[81] but its perceived role is more of partnership with and capacity-building of the industry than enforcement, and there is generally no penalty for non-compliance from the MoI. MoI at local government level issues a "license to operate", which has to be renewed every two years. This involves a facility inspection, auditing of documentation and collection of samples for laboratory testing.

At the national level, the Industrial Services Standardization and Policy Agency (BSKJI) of the MoI undertakes production facility supervision and market surveillance to ensure compliance with the relevant SNIs. Factory supervision is undertaken on the basis of a "supervision plan" while market supervision is carried out based on reports from the public, industry or other agencies. Market supervision includes document inspection to ensure the product has an SNI certificate (SPPT SNI) and product inspection, including laboratory testing. MoI monitoring activities in relation to mandatorily fortified foods are further guided by the MoI regulations making fortification mandatory; regulation 46/2019 for cooking oil and 1/2021 for wheat flour. As mentioned previously there is no regulation making the latest SNI for salt mandatory (3556-2016). For example, regulation 46/2019 for cooking oil specifies that laboratory testing as part of market surveillance does not include assessing vitamin A levels or peroxide, the latter being a test for oil freshness.

81 Minister of Industry Regulation 46 of 2019 and Article 98 of Minister of Industry Regulation 45 of 2022 concerning Industrial Standardization

Role of Other Government Authorities

Under the Law on Local Government[82] while national level government (BPOM and MoI) is responsible for pre and post market surveillance of food products and production facility supervision, **area/district/city governments**, are responsible for the issuance of production permits for home industries and for post market surveillance of foods produced by home-based industries.

In recognition that some processed foods are made by small-scale industries that will not meet standard MD criteria, Indonesia has an alternative registration system for home-based industries known as PIRT (*Pangan Industri Rumah Tangga*). It is a certification for industries that produce food and beverages on a home scale and is issued by the Regent or Mayor at sub-national level through the local health office. In principle, therefore, small-scale salt processors should be able to apply for PIRT in place of MD license. However, it is only given to processed food products with a low level of risk and those with a mandatory SNI are not considered low risk. Thus, small-scale salt processors are excluded from PIRT licensing because salt is a mandatory SNI product.[83] In line with this policy, BPOM has directed local governments not to extend PIRT licenses to salt processors.

Imported foods need to comply with mandatory SNIs in the same way domestically produced foods are required to comply. BPOM and the **Customs Office** within the Ministry of Finance (*Bea Cukai*) are responsible for ensuring compliance of imported foods. As noted above, BPOM is responsible for ensuring all relevant imported foods have an SNI certificate and for issuing ML distribution licenses. Customs Office applies import tax based on a published tariff for globally recognized food categories (indicated by HS codes). Therefore, SNIs often state the applicable product HS code. Imported foods that do not meet mandatory national standards are not released from Customs.

Food producers also require brand certificate from the **Ministry of Law** and a halal certificate from **Indonesian Council of Ulama (MUI)**.

Results of Regulatory Monitoring for Food Fortification

BPOM Facility and Product Registration

As noted above BPOM undertakes both facility and product registration; this forms the basis for further food control activities. Table 5 below indicates the total number of registered facilities and products as of 6 November 2023. The number of registered wheat flour mills matches with the number provided by APTINDO (Chapter 4). The number of registered oil processors is considerably greater than the estimate of 77 provided by MOT (Section 4) but the number in Table 5 below includes both processors and packagers. Meanwhile the number of registered salt processors is somewhat similar to the number provided by MoI in Chapter 4. As below, salt has the largest number of production facilities of all the mandatorily fortified foods; all of these facilities should in principle undergo regulatory monitoring by government authorities for food fortification.

Table 5 also shows the number of registered products available in the market. Cooking oil has the largest number of registered products; BPOM information indicates that 20% of the registered products are forms of *Minyakita*. As the table shows, there are also a large number of registered salt products.

82 Presidential Decree Number 23 of 2014 Law on Local Government

83 As explained earlier in this report it appears that the SNI for iodized consumption salt has not been made mandatory, however, most stakeholders believe and operate as if the SNI is mandatory.

Table 5: BPOM Registered food processing facilities and salt, wheat flour and oil products as of 6 November 2023[84]

Mandatory Food Vehicle	Total number of registered Facilities	Total number of registered products	Proportion of registered facilities with published CPPOB certificate or submission process started
Salt	339	1,316	17%
Wheat flour	30	738	83%
Cooking oil	297	2,465	59%

Of particular interest in Table 5 is the number of registered production facilities with CPPOB certification or those which have at least started the CPPOB submission process. While almost all wheat flour mills have a CPPOB certificate or have applied for it, this is the case for only 39% of cooking oil facilities and 17% of salt facilities. Salt processing facilities in particular have difficulty in qualifying for the CPPOB certificate with implications for their ability to have an MD license and to be monitored by BPOM. Although, the smallest salt production facilities could in principle apply instead for PIRT registration, as noted above, because they produce a mandatory SNI food, PIRT is not applicable. They therefore are unable to obtain CPPOB, PIRT or MD certificates or licenses. They are also unlikely to qualify for the SNI certificate due to low quality salt that does not meet minimum requirements such as NaCl content or iodization requirements due to poor access to iodine fortificant, inferior iodization equipment or inadequate iodization procedures. Although BPOM provides coaching for small scale enterprises to achieve CPPOB certification, many remain without the certificate due to lack of interest and/or resources. This situation leaves the majority of small-scale salt processors, which produce an estimated 20 per cent of total consumption salt, without either MD or PIRT license. Although they have no license to market and distribute a food, they are not forced to close, nor are their facilities or their products monitored at production level.

BPOM Market Surveillance

Figures 21 and 22 below present the results of BPOM market surveillance. Figure 21 shows that compliance with fortification requirements has increased in recent years and is currently at 90% for all mandatorily fortified foods. Figure 22 show the results for individual foods; it suggests that compliance is actually highest for cooking oil and lowest for wheat flour. It must be remembered however that the products sampled by the market surveillance may not be representative of all the product in the market and products without an MD license are not monitored by BPOM. Additionally unpackaged product, such as unpackaged salt, is not currently monitored in BPOM's market surveillance.

84 Deputy for Processed Food Supervision, Directorate of Processed Food Production Supervision, BPOM presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

Figure 21: Trends in total salt, wheat flour and cooking oil samples meeting fortification requirements, 2017 to 2023[85]

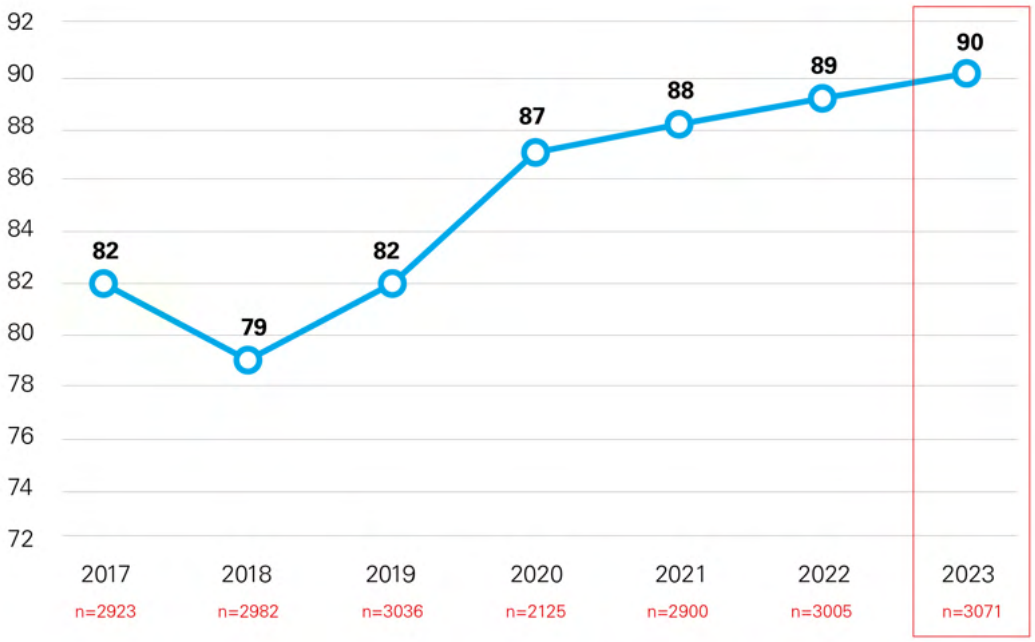
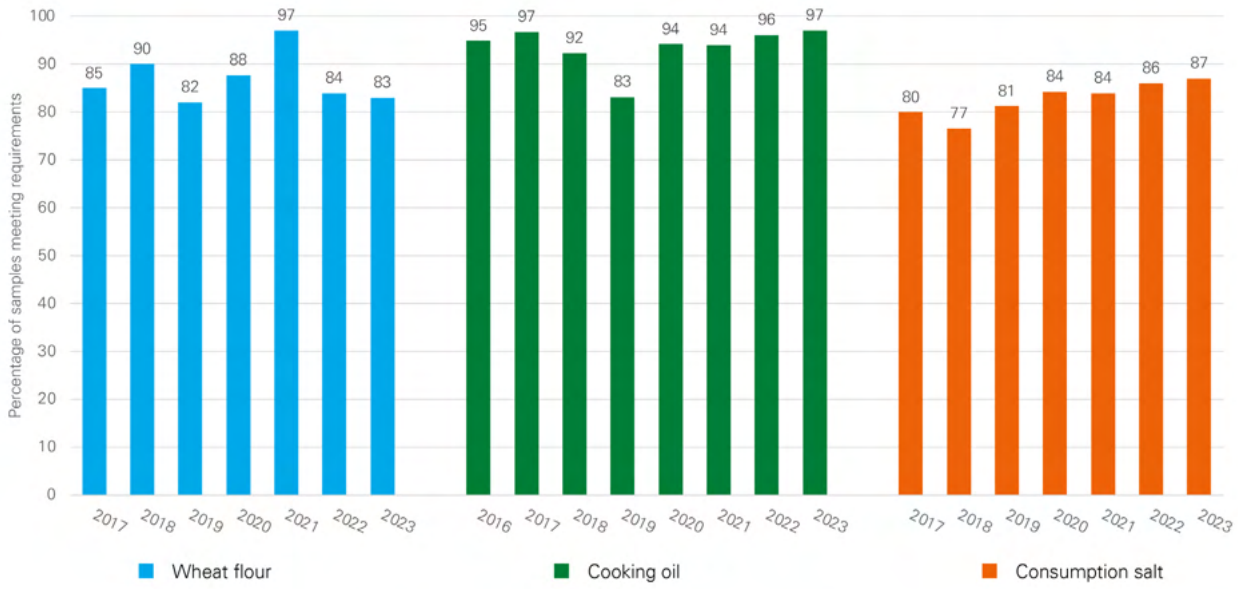


Figure 22: BPOM market surveillance results 2017-2023: Percentage of samples meeting fortification requirements[86]



85 Deputy for Processed Food Supervision, Directorate of Processed Food Production Supervision, BPOM presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

86 Deputy for Processed Food Supervision, Directorate of Processed Food Production Supervision, BPOM presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

Ministry of Industry Results

BSKJI, MoI reported that in 2023 100% of brands of cooking oil tested (6) complied with the SNI based on market surveillance and 100% of brands tested complied with the SNI based on factory supervision.[87] Results for other foods (wheat flour and salt) were not reported.

Conclusions on Regulatory Monitoring for Enforcement of Compliance for Fortification

An assessment of the Indonesian food control system in 2017 by FAO and WHO[88] recognized a multitude of stakeholders and a large number of legal instruments that provide adequate authority to the competent authorities. Resources and capacity were generally found to be adequate. But the assessment highlighted a lack of coherence as the various competent authorities function independently. The lack of coherence is exacerbated by lack of a country-wide risk categorization framework and inadequate capacity to supervise the small and micro businesses, street food vendors and primary production operators. The assessment therefore recommended the following strategic outcomes:

1. A national risk basis for the food control system is developed for competent authorities to use in implementing their risk-based activities.
2. Building on strategic outcome 1, national guidance documents (i.e., principles, activities, procedures) are developed for inspections, monitoring programs including sampling, support for exports and rapid response to food borne illnesses
3. Data gathering and Informatics systems are established to support the risk-based food control system and in particular the risk analysis and performance measures.
4. A small pilot project to test the challenges and opportunities of implementing the above-mentioned strategic outcomes 1, 2, and 3.
5. National system-based evaluation framework (i.e., principles activities, procedures) to support continuous improvement and review is implemented.

Enforcement of compliance with fortification requirements is integrated into the food control system; this is a significant strength of the Indonesian situation. While there are some instances of enforcement through other, usually external, systems, e.g., donor-funded inspection systems, all mandatorily fortified foods are prioritized by BPOM's post-market surveillance and data is available on compliance. Enforcement also occurs through production level monitoring. As noted above, food production enterprises are inspected and monitored on a number of different occasions and for different purposes by both BPOM and MoI, as part of various processes including application for a license to operate and SNI certification. These processes include inspection and auditing of facilities, including fortification procedures, and sample testing or review of CoAs. Thus, both production level and market monitoring are undertaken. Customs and BPOM review CoAs as part of routine import monitoring but in the case of salt it was confirmed by the MoT that only sodium chloride content is reviewed and not iodine content. For imported wheat flour and cooking oil it is unclear that nutrient levels are indicated in CoAs (laboratories report on the parameters requested) and that imported foods are monitored for fortification. However, it is important to note that very little processed wheat flour or cooking oil are imported into Indonesia.

Problems or weaknesses of regulatory monitoring identified by this Landscape Analysis include:

» Production level inspections are made by both BPOM and MoI for a variety of reasons and thus appear overly frequent, onerous and duplicative. They are also costly to the food production enterprise.

» Industry has indicated that there are insufficient accredited and authorized agencies to undertake all the required inspections in a timely manner.

87 BSKJI, MoI presentation at Focus Group Discussion on Monitoring and Evaluation of the Implementation of Monitoring the 2023 Fortified Food Policy, 19 December 2023

88 FAO & WHO. Assessment of the national food control system in Indonesia. 2018

- Laboratory testing of samples of fortified food test the content of all nutrients required by the SNI. For wheat flour this is five different nutrients, some of which are added in very small amounts that are hard to detect, which may result in the sample failing the SNI compliance. Moreover, testing of all five nutrients is not necessary because they are added as a premix and not separately.

- There appears to be a disproportionate emphasis on sample testing, rather than prioritizing facility inspection and document auditing during that inspection. While testing of a single sample can indicate the parameters of a food at a single point in time, facility inspection and document audits can provide information on routine systems and SOPs that make up the quality assurance system in the facility

- Although BPOM says that pre-market surveillance is more important, there appears to be a disproportionate focus on market surveillance over production level inspection. Of the two, market surveillance provides less opportunities for corrective action and it is less cost-effective. There are also a far greater number of markets than production facilities. Yet the key indicator of food fortification compliance comes from market surveillance as opposed to production level inspections and auditing.

- Although both fortified salt and wheat flour are supposed to be used in the production of processed foods, there are no systems to monitor or enforce this.

- The regulatory monitoring framework for home industries, such as small-scale salt processors, is unclear. Because salt has a mandatory SNI, they do not qualify for PIRT but many are unable to achieve CPPOB or SNI certification and to be issued with an MD license. An alternative solution for registration and supervision of small-scale salt processing facilities has yet to be developed.

5.4. Assessing Coverage and Impact

Mandatory fortification aims to fortify all the food vehicle such that it is consumed by the whole population that consumes that food. The primary indicator is compliance with fortification requirements at production level. This data is available from food control monitoring and enforcement systems discussed in Section 5.3. However further indicators that are valuable to assess are coverage of the food – what proportion of the population accesses the fortified food, and impact – to what extent has nutrient intake increased or nutrient deficiency declined – as a result of food fortification.

Coverage

Coverage of the food is often assessed in households through household surveys. However, the food vehicle may also be consumed through processed foods or food prepared by commercial establishments, such as restaurants or street food vendors. The extent to which this happens should guide where and how coverage is assessed. To date almost all fortified food coverage data is from household surveys, and it is likely that the extent to which household data can be extrapolated to other sources of the food vehicle will vary from country to country and food to food.

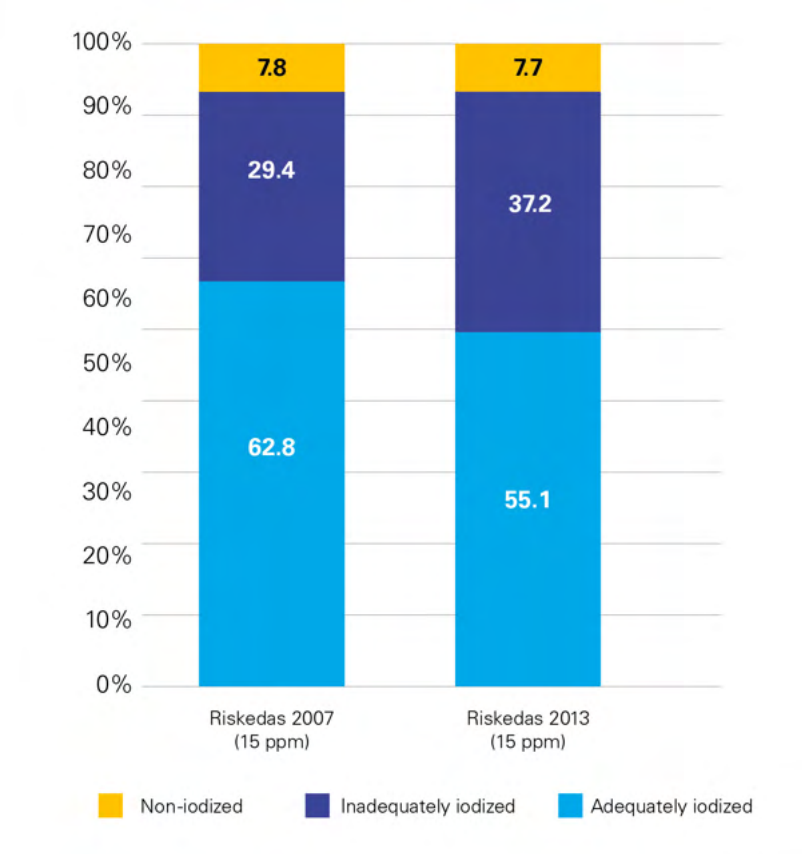
Household coverage - availability of the fortified food in the household

The availability of iodized salt in households was assessed by the annual SUSENAS household expenditure survey of the Central Bureau of Statistics from 1998 to 2003 and by the Ministry of Health RISKESDAS surveys of 2007 and 2013. Although there was a RISKESDAS in 2018 it did not assess iodized salt in the household and the SKI survey in 2023 also did not assess this indicator. The RISKESDAS surveys assessed the iodine content of salt collected from households by rapid test kit and titration. As rapid test kits can only reliably indicate if

salt contains iodine or not, only the titration results are shown in Figure 23 below. They indicate that while the proportion of households with non-iodized salt has remained static between 2007 and 2013 at just under 8%, the proportion of households with inadequately iodized salt has increased from 29% to 37% using the global cut-off of adequality iodized salt at household level of 15ppm[89]. [See Fig 23] Figure 24 shows coverage of iodized salt by provinces; it demonstrates that in more than half of Indonesian provinces more households consume non-iodized or inadequately iodized salt than adequately iodized salt. However, this data is now ten years old, and the situation today is unknown.

The availability of fortified wheat flour or oil has never been assessed in a national household survey.

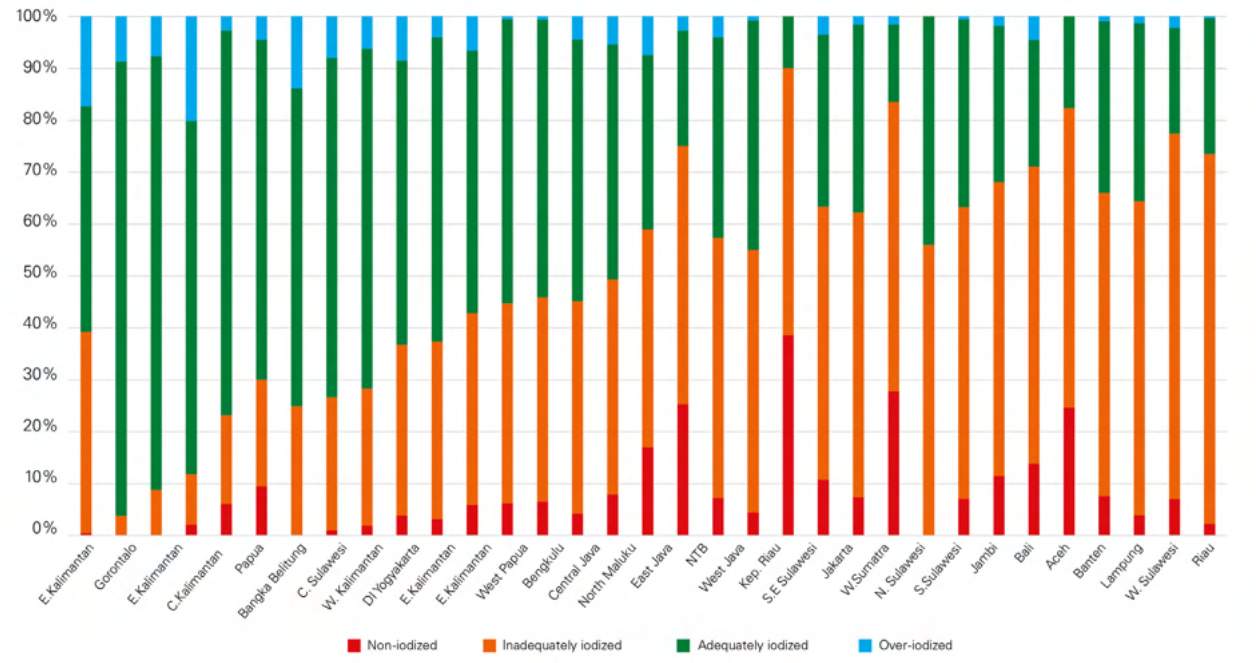
Figure 23: Comparison of trends in household consumption of iodized salt[90]



89 15ppm is used as this is the level of iodine required at the time of consumption to provide adult requirements (150mcg/d) assuming consumption of 10g/salt/day. This is the level that has been used in the majority of household surveys globally.

90 RISKESDAS 2007 and 2013 (Pak Djoko Kartono). Non-iodized: <5ppm iodine; Inadequately iodized: 5-14.9ppm iodine; Adequately iodized: ≥15 iodine

Figure 24: Household use of iodized salt in 2013 by province, as measured by titration[91]



Use of the fortified food by manufacturers of processed foods

As noted in Section 5.1, while fortified wheat flour is required to be used in the manufacture of processed foods, the requirements are unclear for salt and fortified cooking oil does not have to be used. In Section 5.3 it has been concluded that requirements on the use of fortified foods in the manufacture of processed foods are not monitored or enforced. The best data on these practices are thus from the producers of the fortified foods themselves. Wheat flour millers report that all their customers receive and request fortified flour as per the national SNI. There were some complaints and flour return after the SNI was updated in 2018 and flour was fortified with ferrous fumarate rather than electrolytic iron due to the appearance of black spots (discussed in Section 5.2) but the milling industry has advised that these issues have now been resolved. Thus, the information is that all wheat flour is fortified, and all wheat flour products are made with fortified flour.

For oil, manufacturers of processed foods may use fortified oil if they want but it appears that no cooking oil used in processed foods is fortified.[92]

For salt the situation is unclear. A review of the salt iodisation situation in 2018[93] concluded that iodised salt was used quite widely in the manufacture of processed foods but that it was not universal, was dependent on the decisions of individual food processors and there was widespread perception that there is no requirement to use iodised salt. There have been no improvements in the legislative framework since the 2018 review to clarify the situation with regards to use of iodised salt in processed foods. And it is not known what current practices are although Indofood did advise this Landscape Analysis that all salt in all of their products is fortified.

91 RISKESDAS 2013. Non-iodized <5mg/kg; inadequately iodized 5-18mg/kg; adequately iodized 18-39.9mg/kg; over-iodized >40mg/kg
92 As reported at KFI focus group discussions with oil fortification stakeholders on 13 November 2023
93 UNICEF and Micronutrient Initiative (2017). Review of Progress Towards the Sustained Elimination of Iodine Deficiency Disorders in Indonesia. Jakarta: United Nations Children's Fund.

Use of fortified food by commercial establishments

No data is available on the extent to which oil, salt or wheat flour that is used by commercial establishments, such as restaurants, is fortified.

It seems likely that oil used by commercial establishments is "industrial bulk oil" [See Figure 11] as other oil is packaged in either premium or simple packaging. Industrial bulk oil is the same oil used by food processors and it is not fortified. In the case of oil therefore, the proportion of oil in households that is fortified is unlikely to be reflective of the extent to which oil used by commercial establishments is fortified.

Ministry of Industry 2022 data indicates that 22% of the salt for human consumption is required by commercial establishments; more than the amount used by households.[94] It is likely that the salt used by commercial establishments comes larger salt processors that can supply salt in bigger packaging. Salt used by commercial establishments is therefore potentially better iodized than that used by households. It would nevertheless be useful to verify this.

No data is available on the proportion of wheat flour used by commercial establishments. Figure 6 on wheat flour consumers indicates that wheat flour goes to retailers (for households and potentially some commercial establishments), big and modern industry for production of processed foods such as instant noodles, and small and medium enterprises and household industries for the production of wheat flour foods such as bread, cake, wet noodles. As commercial establishments aren't recorded as a "wheat flour consumer" it seems likely that they buy their flour from retailers. Hence coverage of fortified wheat flour in households will provide a good indication of the proportion of flour used in commercial enterprises that is fortified.

Impact of fortification

Once it has been confirmed that the majority of the food vehicle is in compliant with national fortification requirements and/or there is high population coverage with the fortified food, many counties make it a priority to assess the impact of fortification by looking at micronutrient status or other functional outcomes that could be expected to change due to fortification. A particularly relevant indicator is the micronutrient status of reproductive age women[95] for the nutrients that have been added to the fortified foods, in particular those that have been proven to be efficacious. In Indonesia, these nutrients would be iron and folic acid from wheat flour, iodine from salt and vitamin A from cooking oil. In terms of functional outcomes, folic acid fortification has been found to reduce the incidence of neural tube defects in multiple countries.

In Indonesia, a considerable amount of data is available on iodine status, especially up until 2013. However, no national data is available on iron or folic acid status and only a limited amount of data is available on vitamin A status. This lack of data on micronutrient status exists despite the fact that health surveys (RISKESDAS or SKI) were undertaken in 2007, 2013, 2018, 2023. All of these collected urines and/or blood, but seldom used the opportunity to assess as many nutrients as possible. For example, the 2023 SKI collected blood samples but there are only plans to assess vitamin A status. The same blood sample could have been used to assess other nutrients such as serum ferritin, serum zinc or RBC folate.

As a proxy to micronutrient status data, the Fortification Coalition of Indonesia (KFI) is analysing food consumption data from the 2014 Total Diet Survey in order to estimate intake, using food composition data from Malaysia and other ASEAN countries. The analysis will include an estimate of intake as a result of fortification, taking into account BPOM compliance data.

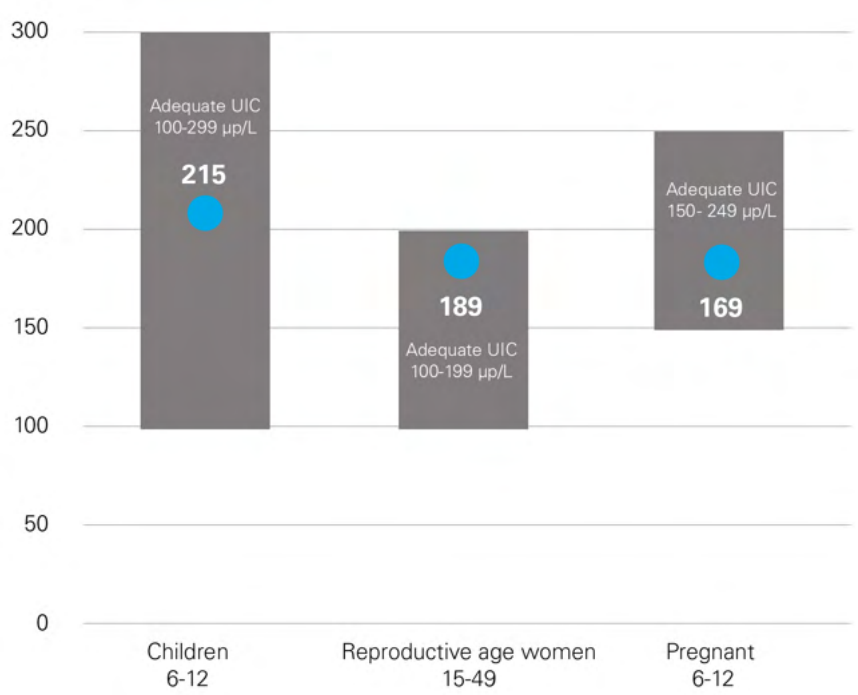
94 Directorate of Upstream Chemicals, Ministry of Industry. October 2023. Salt Requirements. NB. 2023 data does not differentiate salt for "commercial establishments" from "food industry" salt

95 Reproductive age women are the optimal target population to assess the impact of fortification because adults are more likely to benefit from staple food fortification than children, are a priority population group for fortification, and can be adequately sampled in national surveys.

Impact of salt iodisation

Salt iodization started in 1994 and 80% of households were found to have iodized salt in the 1989 SUSENAS survey. Coverage with iodised salt rose to just over 90% as measured by the 2013 RISKESDAS survey. However, as already reported only 55% of households had adequately iodised salt (15ppm) in 2013, down from 63% in 2007. Current status of household coverage is unknown. Corresponding to the high household coverage with iodised salt, the prevalence of goitre in school age children was found to decline from 30% in 1993 to 11% in 2003. And urinary iodine data from RISKESDAS 2013 suggests that iodine status was adequate in school age children, reproductive age women and pregnant women on a national level. [Figure 25].

Figure 25: Median urinary iodine levels of different population groups, RISKESDAS 2013[96]



Sub-nationally however these national data hide disparities. Disaggregated data from the RISKESDAS 2013[97] show that pregnant women are deficient in E Java, NTT & NTB and Maluku and Papua (they are borderline in Sulawesi) and in the two poorest economic quintiles. Throughout the country, those that consume non-iodised salt are also deficient. See UNICEF/MI review[98] for full discussion of these results.

Thus, while salt iodisation has been proven to be effective in Indonesia, some sectors of the population remained deficient, and the current status is unknown.

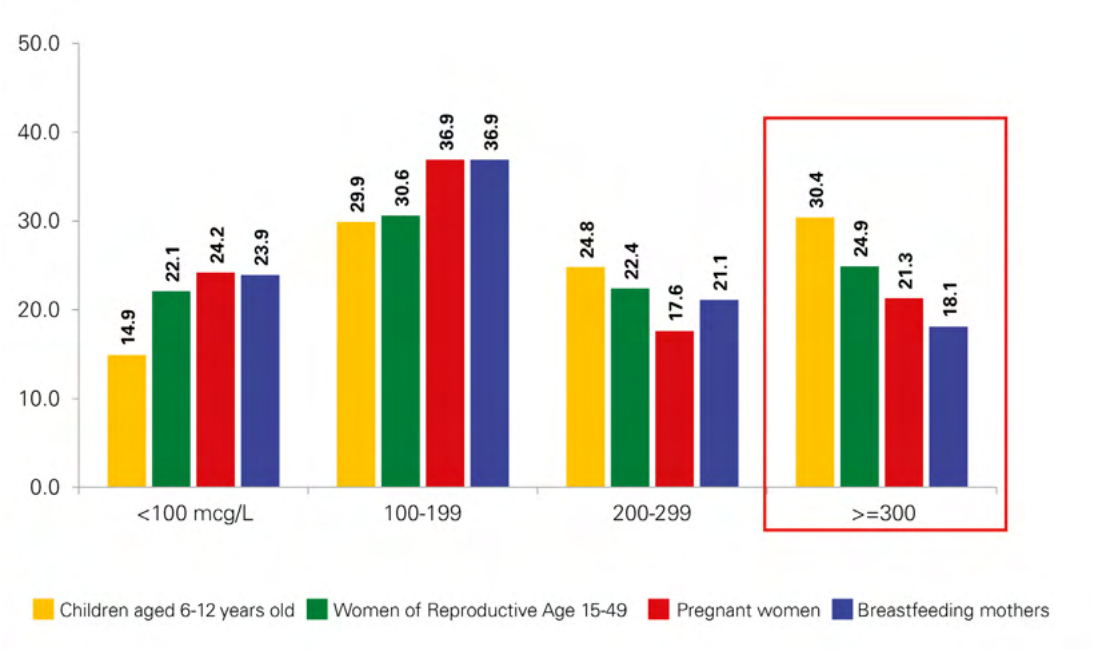
96 Djoko et al. The situation of urinary iodine concentration among school age children, women of reproductive ae and pregnant women in Indonesia; the analysis of RISKESDAS 2013. Gizi Indonesia 2016. Optimal urinary iodine concentrations (UIC) from Zimmerman et al. J Clin Endocrin Metab 2013 for children 6-12 years and from WHO, UNICEF, ICCIDD, 2007 for reproductive age, and pregnant women.

97 Djoko et al. The situation of urinary iodine concentration among school age children, women of reproductive ae and pregnant women in Indonesia; the analysis of RISKESDAS 2013. Gizi Indonesia 2016.

98 UNICEF and Micronutrient Initiative (2017). Review of Progress Towards the Sustained Elimination of Iodine Deficiency Disorders in Indonesia. Jakarta: United Nations Children's Fund.

It is important to mention that there is a perception, in particular amongst some health sector stakeholders, that iodine intake is in excess of requirements. This is due to misinterpretation of urinary iodine results and poor understanding of the indicator. Urinary iodine concentration is measured in individuals from a single urine sample. However urinary iodine concentration fluctuates significantly over the course of the day and between individuals based on iodine intake. Therefore, urinary iodine concentration from a single urine sample cannot be used to assess iodine status of the individual. In order to take this variation into account population surveys look at the distribution of individual urinary iodine concentrations and take the median to be reflective of the iodine status of the population. Comparison to WHO cut-offs then allows determination of whether the population iodine status is inadequate, adequate or in excess. Urinary iodine concentration cannot however indicate prevalence of iodine deficiency. The below presentation of iodine status from RISKESDAS 2013 is therefore incorrect and has led to the erroneous belief that proportions of all population groups have excess iodine intake (all the people represented by the bars in the red box). [See Figure 26]

Figure 26: Erroneous presentation of urinary iodine data in the RISKESDAS 2013[99]

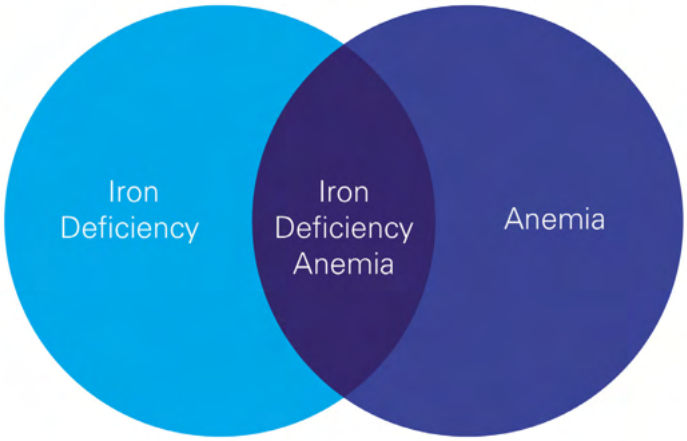


Impact of wheat flour fortification

To date, stakeholders have commonly looked at changes in anaemia prevalence to assess impact of wheat flour fortification but as there are multiple caused of anaemia, and taking into consideration the low levels of iron added to wheat flour and the relatively small amount of wheat flour consumed by Indonesians, it would be preferable to assess more 'direct' indicators, such as iron status (serum ferritin[100]) or folic acid status (RBC folate[101]). This problem of anaemia as an indicator of the effectiveness of wheat flour fortification is not commonly understood amongst Indonesian stakeholders and is further exacerbated by common usage of the term "iron deficiency anaemia" when in fact only anaemia has been assessed. [See Figure 27]

99 RISKESDAS 2013
100 WHO guideline on use of ferritin concentrations to assess iron status in individuals and populations [https://www.who.int/publications/i/item/9789240000124]
101 WHO Guideline: Optimal serum and red blood cell folate concentrations in women of reproductive age for prevention of neural tube defects. 2015 [chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://iris.who.int/bitstream/handle/10665/161988/9789241549042_eng.pdf?sequence=1]

Figure 27: Difference between anaemia, iron deficiency and iron deficiency anaemia



Until 2021, when the SNI was changed to require the use of more bio-available iron compounds for wheat flour fortification, electrolytic iron was being used. While this is an effective iron compound when consumed in greater amounts, it is not recommended in contexts when wheat flour consumption is less than 150g/c/day. As stated in Chapter 4, wheat flour consumption in Indonesia is currently believed to be between 66 and 89 g/c/d; lower in previous years.

Lack of evidence of the impact of wheat flour fortification in Indonesia is probably related to these two problems – use of a less bio-available iron compound, and anaemia as the indicator being assessed. Now that wheat flour millers are using ferrous fumarate; they have asked for an assessment of the impact of wheat flour fortification. This is a reasonable request by a key stakeholder in the implementation of mandatory wheat flour fortification. The evaluation will be particularly important because levels of iron being added are currently lower than WHO recommendations – as discussed in Section 5.1. An evaluation will be difficult however as there is no baseline or opportunity for a control population. And as noted above, it will be important for the evaluation to assess changes in iron and/or folate status directly, and not anaemia.

Impact of cooking oil fortification

Cooking oil fortification was made mandatory in 2013[102] and although the SNI was updated in 2019 and the regulation to assign enforcement authorities was only issued in 2023[103] BPOM market surveillance data suggests cooking oil fortification has been implemented at least since 2016. In order to evaluate the impact of oil fortification it would be preferable to have vitamin A status data before oil fortification started but this does not seem to be available. Vitamin A status data is available from RISKESDAS 2018 and can be compared to vitamin A status assessed by SKI 2023 to see if there has been any change. The vitamin A status data from SKI 2023 will need to take into account also compliance data from BPOM. Household coverage data would be even more useful but is unfortunately not available.

An evaluation of a pilot distribution of fortified cooking oil in West Java that measured vitamin A status prior to distribution and then a year after found that fortified oil improved vitamin A intakes, contributing on average 26 %, 40 %, 38 %, 29 % and 35 % of the daily Recommended Nutrient Intake for children aged 12–23 months, 24–59 months, 5–9 years, lactating and non-lactating women, respectively. The oil was fortified as per SNI 7709 – 45IU/g.[104]

102 Regulation of the Ministry of Industry No. 87/M-IND/PER/12/2013 concerning mandatory implementation of SNI for palm cooking oil
103 Decree of the Ministry of Industry No.4057, year 2023
104 Sandjaja et al. Vitamin A-fortified cooking oil reduces vitamin A deficiency in infants, young children and women; results from a programme evaluation in Indonesia. Public Health Nutrition, 2015

5.5. History and Potential of Rice Fortification

Introduction to rice fortification

Rice is fortified by mixing it with pre-formed (extruded) fortified rice kernels (FRK) made from a paste of rice powder, vitamins and minerals. It is possible to fortify rice with multiple vitamins and minerals with limited incremental cost for additional nutrients as they are all delivered via the FRKs. However, compared to fortification of other food vehicles, which are usually fortified by adding a powder to a powder (as in the case of wheat flour) or a liquid to a liquid (as in the case of cooking oil), fortification of rice is relatively more expensive because of the need to produce the FRK. The FRK is then blended with the unfortified rice, to produce fortified rice, usually in the ratio of 1:100 or 1:200. Globally, only 8 countries have mandatory legislation for fortified rice reflecting technical, logistical and financial constraints in mandatory large scale rice fortification.

History of and strategies for rice fortification in Indonesia

Rice fortification is in the government's national medium term strategic plan (RPJMN) and the target in the 2020-2024 RPJMN is that 100% of social safety net (SSN) beneficiaries receive fortified rice.[105] Unfortunately, the percentage reached is currently 0%. The target of the new RPJMN 2025-2029 has not yet been established.

A small amount of fortified rice is already being produced in Indonesia on a voluntary, commercial basis by BULOG, PT. Food Station Tjipinang Jaya, PT M-Tani, PT Siamo Berkah Sejahtera, PT Graha Diva Nutrisindo, and PT Thara Jaya Niaga.[106] And between 2010 and 2017, the Asian Development Bank funded an assessment of the feasibility, cost and impact of providing iron-fortified rice under the RASKIN (Rice for the Poor) programme in project areas. The assessment found that most targeted beneficiaries consumed the fortified rice and there was a significant impact on anaemia, in particular amongst school children.[107] There are also producers of FRK in Indonesia- Pusat Riset Agroindustri- Badan Riset dan Inovasi Nasional" / Agroindustry Research Center- the National Research and Innovation Agency (which is a government research institute and not a commercial producer), PT FITS Mandiri, Surya Abadi, and Jailolo Multi Agrika, as well as Thara Jaya Niaga; all of these have a production capacity of around 150- 250 kg/hour and together produce enough FRK to produce about 1.6 to 1.8 million tons of fortified rice (about 5.8% of national rice requirement).[108]

As already discussed in the first part of this Landscape Analysis, Indonesia's strategy for the achievement of food fortification has to date been to select appropriate food vehicles that are consumed by the majority of the population and to legislate that the food vehicle be fortified. Preferably the food is also produced by industrial scale facilities that have the capacity and resources to fortify and which the government is able to inspect and monitor in order to enforce the fortification requirement. The government enables mandatory fortification to happen by:

- selecting appropriate food vehicles that meet the criteria for mandatory, universal fortification,
- passing legislation to require the fortification of all the food so that all food producers have the same additional fortification costs and can pass these onto the consumer, if necessary (this applies also to imported food),
- by setting specifications for fortification, usually in food standards, so that industry knows exactly what nutrients and how much to add. Fortification specifications should take into consideration what nutrients the population is deficient in, the amount of the food vehicle consumed, price implications of the specifications and technological considerations such as impact upon the appearance of the food or the reactivity of the fortificant with the food vehicle or other ingredients

105 Presidential Regulation Number 18, Year 2020 on the National Medium-Term Development Plan (RPJMN 2020-2024)- Target by 2024: 100% coverage of BPNT (Non-Cash Food Assistance) for access to fortified and enriched rice for the poor and malnourished.
106 Nutrition International. Landscape Analysis of Rice Fortification in Indonesia. 2023
107 ADB. Implementation Completion Memorandum. Indonesia: Rice Fortification for the Poor (Financed by the Japan Fund for Poverty Reduction). May 2019
108 Nutrition International. Landscape Analysis of Rice Fortification in Indonesia. 2023

- by integrating inspection and monitoring for fortification into existing food control systems to create a 'safe' environment for producers to fortify; producers must be confident that all their competitors, including importers, are incurring the same additional fortification costs as they are; if not, they will resist fortifying.

One thing that government does not need to do in mandatory fortification is to create demand, because all the food is fortified.

In the case of rice fortification however, mandatory, universal rice fortification is not believed to be feasible due to the large number of small mills which do not have the capacity or resources to fortify and which the government would not be able to inspect and monitor. In this context, alternative ways to fortify a significant amount of rice, in the hope of achieving a public health benefit, are therefore:

- To fortify rice that is part of a social safety net (SSN) programme, i.e., programmes which distribute free or subsidized rice to targeted populations such as the poor or students in school. The social safety net programme creates a guaranteed demand for the fortified rice such that rice millers will be willing to make the necessary investments or changes to their production in order to supply the programme. As the fortified rice is distributed free or subsidized however, it is necessary for the SSN programme to fully pay for the fortification. There is no way to pass the cost on to the beneficiary
- To try to create demand for fortified rice such that the millers will produce it and consumers will choose to purchase the fortified version. All voluntary food fortification initiatives work in this way however in some cases it is market driven – i.e., the industry tries to generate demand for the fortified rice through marketing, and in other cases the government might try to create demand for fortified rice through public health communication. As voluntary fortification only fortifies some rice however, the price of voluntarily fortified rice will always be higher than non-fortified rice and global experience has shown that it is extremely hard to create sufficient demand for fortified products, in particular amongst the poor or those who are most likely to be deficient, and in particular for staple foods which are highly price sensitive and may not have a strong brand identity. Moreover, the industry often does not perceive the demand to be sufficiently strong or secure. For all these reasons, voluntary fortification often does not lead to high coverage or a significant public health benefit.

Because rice fortification could be a highly cost-effective micronutrient intervention in Indonesia, there is significant interest in finding a way to scale up rice fortification and multiple stakeholders and donors are actively engaged in exploring and supporting opportunities for rice fortification. Multiple landscape analyses have been undertaken – the most recent one by Nutrition International, updated a 2021 analysis by the World Food Programme, and has been widely referenced by this Landscape Analysis. There have also been several stakeholder initiatives to identify ways to scale up rice fortification.

Distribution of fortified rice through social safety net programmes in Indonesia

As noted above the most likely way to fortify a significant amount of rice and to achieve a public health benefit is by fortifying rice in social safety net programme that distributes or subsidizes rice.

Between 1998 and 2019 the Ministry of Social Affairs (MoSA) and BULOG implemented an SSN programme that distributed rice. The *Beras untuk Rakyat Sejahtera* or RASTRA (Rice for the Prosperous Population) programme[109] provided 15kg of rice/beneficiary family to a distribution point from which it could be purchased by beneficiary households at a subsidized price. The programme targeted about 15.5 million households; about 18% of Indonesian households.[110] The programme was the largest permanent social assistance transfer targeted to poor households in Indonesia.[111]

109 Previous names were Rice for the Poor programme (Program Subsidi Beras Bagi Masyarakat Berpendapatan Rendah—RASKIN programme); Operasi Pasar Khusus, OPK (Special Market Operations)

110 Assuming 88 million households. https://databoks.katadata.co.id/datapublish/2023/03/30/dukcapil-jumlah-penduduk-indonesia-tembus-277-juta-pada-2022

111 World Bank. RASKIN subsidized rice delivery. Social assistance programme and public expenditure review 3. February 2012

However, between 2017 and 2019 the RASTRA subsidized food distribution programme was transitioned to the SEMBAKO programme which provided instead a cash subsidy with which beneficiaries could purchase specific food items through e-shops.[112] Since 2019 therefore there has not been an SSN programme distributing rice which could be fortified. This has been a major constraint to expanding the availability of fortified rice in Indonesia, in particular among the poor.

However, in mid-2023 the newly formed National Food Agency (NFA), which has the mandate to ensure domestic food supplies, started distributing 639 million kilograms of rice to 21.353 million beneficiary families through a programme called *Bantuan Pangan Beras* (Rice Food Aid). The beneficiary families make up about 23.8% of total registered families in Indonesia.[113] These families were formerly beneficiaries of the SEMBAKO cash subsidy programme which replaced the RASTRA food distribution programme; their names were shared with NFA by MoSA. The NFA plans for this rice to be fortified. Initially NFA's distribution will be for 3 months of the year, with later plans to extend distribution to 6 months. This programme will therefore fortify 2% and, if it is expanded to 6 months/year, 4% of the national rice requirement per year. Estimated cost of the fortification is 468,131 million rupiah (US$29.915 million).[114] The rice to be fortified will come from rice reserves held by BULOG and BULOG will distribute the fortified rice to the beneficiaries. Further implementation details still need to be finalized such as where to source the FRKs from, whether the government will support production of the fortified rice and how to identify millers that can produce the fortified rice.[115]

NFA's new programme offers the best opportunity since the ending of the RASTRA programme, to implement rice fortification as a strategy to reduce micronutrient deficiencies. It will create guaranteed demand which will give selected rice millers the confidence to invest time and resources in building their capacity to produce FRK and/or fortified rice at scale. Production at scale will increase economies of scale and if fortification can be integrated into existing milling practices, there will also be cost savings. For example, rice millers are well-positioned to develop FRK production capacity because an important input is broken rice. Broken rice is a waste product of rice mills and can be cost-effectively used to make FRK. Similarly, if a rice miller produces his own FRK there are less transport costs from FRK producer to rice blender and larger rice millers will already have rice milling equipment that can be used for blending FRK with rice. Having developed capacity to produce FRK and fortified rice for the SSN programme, they will then be in a position to also introduce fortified rice to the 'normal consumer market'. As availability increases, the price differential between fortified and no-fortified rice will reduce, so increasing demand. National economic development will lead to consolidation of the rice industry increasing the proportion of rice milled by large mills; capacity to fortify will increase in line with development of the rice industry.

112 MicroSave Consulting. BPNT Operations Assessment. January 2019. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.microsave.net/wp-content/uploads/2019/02/190201_BPNT-REPORT_Final__pdf

113 Based on 88 million registered families. (https://databoks.katadata.co.id/datapublish/2023/03/30/dukcapil-jumlah-penduduk-indonesia-tembus-277-juta-pada-2022).

114 Based on per kg price of 660 rupiah plus 11% VAT quoted in Nutrition International. Landscape Analysis of Rice Fortification in Indonesia. 2023. The price is for FRK without vitamin A.

115 Rinna Syawal, Director of Food Consumption Diversity, National Food Agency. Rice Fortification Program Opportunities In Social Safety Nets. Presentation delivered to: Workshop on Micronutrient Gap Analysis for Preparing Nutritional Quality Standards for Fortified Rice, Bogor, November 2 2023

Implementation details of the Bantuan Pangan Beras are still lacking however and it is important to recognize that unsuccessful elements of the RASKIN and RASTRA programmes limited the impact of both the rice subsidization and the fortification. It will therefore be important for NFA to try to avoid the problems encountered by the RASKIN and RASTRA programmes. An evaluation of the RASKIN programme found the following problems:

1. A significant amount of rice produced for RASKIN was lost and did not reach the beneficiaries; it is not clear how it was lost and where it went.
2. Purchasers of subsidized RASKIN rice were often not the targeted beneficiaries – RASKIN rice was purchased, at the subsidized price, by both poor and non-poor due to implementation and management weaknesses
3. Economic and nutritional impact was therefore undermined as targeted beneficiaries received less than the intended amount of rice
4. RASKIN quotas were not based on food insecurity so did not target those who are most likely to benefit
5. Rice management costs are high and poor design and oversight further inflated management costs and increased inefficiencies including poor targeting and implementation.

Important actions that will further facilitate scale up of rice fortification and implementation of the NFA's programme include:

1. Greater coordination of national government, donor community and development partner efforts to facilitate and support scale up of rice fortification. To date the multitude of efforts, appear to have been fragmented, sometimes at cross-purposes and sometimes duplicative or counter-productive. This appears to be due to the fact that there was not a consensus on the best approach in the Indonesian context and different stakeholders were therefore pursuing different strategies. Now that the opportunity exists to distribute rice through an SSN, stakeholder efforts can be more efficiently coordinated around this strategy
2. Complete development of a national standard (SNI) for fortified rice that specifies fortification requirements that are likely to be effective in the Indonesian context but will also be feasible. Global guidelines are available-WHO. Guideline: fortification of rice with vitamins and minerals as a public health strategy. 2018. World Health Organization.[116]
3. Complete development of an SNI for fortified rice kernels to facilitate the import and local production of FRK. An appropriate standard and enforcement of that standard will also improve the effectiveness of rice fortification.

116 https://www.who.int/publications/i/item/9789241550291

5.6. Coordination, Management and Oversight

Fortification, in particular mandatory fortification of staple foods, involves a large number of stakeholders including multiple sectors of government, large and complex industries, some with multiple small enterprises scattered throughout the country, and a variety of social sector stakeholders focused on different aspects of the fortification process from advocacy and communications to technical support or evaluation. Moreover, fortification is most sustainable and effective if it is integrated into existing systems including the regulatory and food control system, food production and distribution systems and public health monitoring and assessment systems. As such, especially in initial stages of design and establishment of mandatory fortification, coordination, management and oversight are essential.

However, coordination, management and oversight have been lacking in Indonesia. Although *Tim GAKY* (Coordination Team for IDD) was established in order to guide mandatory salt fortification in the early years, it has not been functional for several years. Meanwhile comparative structures for wheat flour and oil fortification have never existed. The initiation of the establishment of the Food Fortification Forum under the auspices of BAPPENAS is a very positive development which will hopefully significantly improve coordination and oversight and address many constraints identified by this Landscape Analysis.

While political commitment for mandatory fortification is high, and has led to national legislation for mandatory fortification, political commitment and coordination to ensure implementation and enforcement seems lacking. This may be related to the complexity of the legislative framework for fortification in Indonesia and the large number of stakeholders that need to be coordinated. There also seem to have been some 'pauses' in the commitment to fortify. In 2008, as a result of lobbying from flour importers, MoI lifted the requirement to fortify flour as fortification was blamed for restricting imports and causing price increases in flour. There was no truth to this argument however and following heavy lobbying from the domestic milling industry and various NGOs and development agencies, such as KFI, mandatory wheat flour was re-instated. During Covid, reportedly because of difficulties in procuring premix, fortification of both wheat flour and cooking oil was temporarily suspended by the MoI. However, this Landscape Analysis was not able to find any evidence that either the wheat flour or the cooking oil industry asked for this suspension or that there were significant constraints to procuring premix. It also appears that no other country lifted fortification requirements during Covid, a time when it could be argued fortification was particularly important for public health. These relaxations of fortification requirements suggest some sectors of the government may not fully understand the implementation details and benefits of fortification and these incidents also raise questions about how policy decisions are made.

Awareness of the value of fortification and the fact that salt, wheat flour and oil are supposed to be fortified are high. For example, the representatives of the Coordinating Ministry of Marine Affairs and the Ministry of Trade that we spoke to for this Landscape Analysis were well aware of the requirement to fortify even if they didn't necessarily perceive responsibility to make it happen.

However, lack of communication on fortification between sectors and even within ministries was evident. Stakeholders referred to different SNIs or regulations, had different interpretations of existing regulations and had not attempted to resolve identified contradictions or loopholes. There are also multiple instances when fortification appears not to have been taken into account in other policy decisions such as in relation to support to and development of the salt industry, import of salt, domestic trade of cooking oil and design of social safety nets.

The Law on Food Safety, Quality and Nutrition emphasizes, in particular, the roles of the Ministry of Health and Ministry of Industry in fortification. However, particularly in recent years, the Ministry of Health has not demonstrated strong leadership in advocating for mandatory fortification when appropriate, for guiding the

development of effective and evidence-based fortification requirements in SNIs or monitoring the status of micronutrient deficiencies and evaluating the impact of fortification efforts. The key role of the Ministry of Industry is to design the implementation details of fortification within existing food trade and production systems. As noted in Section 5.1, the legislative framework for fortification relies heavily on regulations issued by the MoI and MoI plays a key role in enforcing national standards, including the fortification requirements specified. As described in Section 5.1 however the legislative framework is potentially overly complicated and for salt in particular, and to a lesser extent cooking oil, there are gaps and contradictions in the current legislative framework.

In both the stunting workplan and the workplan for development of the salt industry, responsibility for 'strengthening food fortification' was assigned to BPOM. While BPOM has a primary responsibility for food control, hence enforcement of the SNI, other government ministries and departments also have responsibilities for enforcement or for other aspects of fortification. As such many of the government responsibilities for successful implementation of mandatory fortification appear to be relatively poorly recognized.

The role of provincial and district government in mandatory food fortification is also not clear. MoHA Decrees were issued in 1997 and 2010[117] that envisaged significant roles of sub-national government in encouraging and enforcing mandatory salt iodization including the development of district *Tim GAKY* and workplans, enforcement roles and responsibilities and coverage and impact monitoring. However, these roles were not aligned with national roles, in particular those of BPOM and in 2018, these regulations were revoked, causing concern amongst several stakeholders. Similar responsibilities were not assigned for the implementation of mandatory wheat flour and cooking oil contributing to different management plans between the various food fortification programmes. At this time, the role of sub-national government remains unclear.

Potentially because of a lack of structure to facilitate coordination, there is limited communication with consumers about fortification. As fortification in Indonesia is mandatory rather than voluntary there is no need for expensive information campaigns to try to create demand for fortified food by encouraging consumers to choose fortified versions over non-fortified. However, it is important for consumers to be aware that selected staple foods are fortified and the reason for this. All fortified foods are labelled as fortified, but it is not required for example, for processed foods to indicate if they are made with fortified ingredients. Communication with consumers is arguably within the mandate of the Ministry of Health.

Overall data on the implementation, coverage and impact of fortification is lacking. Some data on compliance of products in the market is published annually by BPOM and relevant ministries generally have data on the industry but little other data to assess implementation or outcome is available. This lack of data is a constraint for improved coordination, management and oversight.

117 MoHA regulation 15/1997 and Regulation of the Minister of Home Affairs No. 63 of 2010 providing Guidelines for the Control of IDD in the Region

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06

Recommendations on Improving the Implementation of Large-Scale Food Fortification in Indonesia

6.1 Coordination, Management and Oversight

The Forum for Food Fortification currently being established is a significant new development and creates the opportunity to address several constraints and weaknesses in food fortification implementation identified by this Landscape Analysis. Several of the below recommendations could be implemented by the Forum.

- Commission a series of focus group discussions and review of relevant regulations to map roles and responsibilities of various ministries, directorates within ministries and other relevant government agencies. The objective of the review is to identify gaps and overlaps in roles and responsibilities and to ensure alignment in the principals of government support to and implementation of fortification. Use the results to increase the accountability of stakeholders to fulfil their agreed upon mandates and roles with regards to fortification

- Through the Forum ensure that fortification is considered in the development of any food related policies that might influence the implementation or effectiveness of fortification, such as the National Salt Development Plan, the People's Cooking Oil Programme and the NFA Rice Food Aid Programme.

- Develop consensus on the role of sub-national government in mandatory food fortification, in particular in relation to support to industry, regulatory monitoring and communication to consumers.

- [Rice specific] Improve the coordination of efforts to scale up rice fortification in Indonesia. Encourage all government sectors, development partners and NGOs to support the distribution of fortified rice through the NFA's Rice Food Aid programme as the best opportunity to achieve high coverage with fortified rice

- [Salt specific] Organize a discussion between relevant stakeholders to agree on the use of iodized salt in processed foods. Thereafter amend relevant regulations to ensure consistency. Specific amendments that appear to be needed are to make SNI 8207:2016 mandatory. This is the SNI for salt for processed food; if it was mandatory all salt used in manufacture of processed food would need to be iodized. This would cover both imported salt and domestically produced salt going to the processed food industry. Further amendments might include SNIs for processed foods to reflect that the salt used should comply with SNI 8207 and the Salt Roadmap to specify use of domestically produced iodized salt in food processing, including fish salting.

6.2 Legislation, Regulations and Standards

- Commission a review of food fortification legislation in the context of Indonesia's food legislative system. The objectives would be to look for opportunities for simplification and standardization in order to strengthen the legislative framework and facilitate implementation. For example, review the necessity to issue new regulations to make an SNI mandatory and to assign an enforcement body every time it is updated and standardize the content of such regulations across fortified foods. Revoke "additional regulations" on mandatory fortification to avoid duplication and contradictions in regulations outside of the 'SNI and supportive regulations' model. Consider the wheat flour legislative framework as an example of how other mandatory fortification foods can be legislated.

- [Salt specific] Address gaps in the current legislative framework for mandatory salt iodization, i.e. make SNI 3556:2016 mandatory, assign an enforcement body and inform to WTO. Make SNI 4435 mandatory to facilitate the production of iodized salt from domestically produced salt.

- [Salt specific] Review all SNIs for salt to simplify and streamline and remove inconsistencies, duplications and ambiguities. Cancel SNIs that are no longer needed.

- [Salt & wheat flour specific] Review fortification requirements for salt and wheat flour. Consider updating SNI 3556:2016 and 3751:2018 to increase fortification levels in order to increase the effectiveness of fortification; specifically increase iodine levels in SNI 3556 and specify iodine amount rather than potassium iodate amount, and increase iron, folic acid and zinc levels in SNI 3751. Potential advantages in making these updates need to weigh against the long process to amend SNIs. However, SNI 3556:2016 has not yet been made mandatory and could be considered ineffective at this time.

- [Rice specific] Complete development of a national standard (SNI) for fortified rice that specifies fortification requirements that are likely to be effective in the Indonesian context but will also be feasible. Global guidelines are available-WHO. Guideline: fortification of rice with vitamins and minerals as a public health strategy. 2018. World Health Organization.[118]

- [Rice specific] Complete development of an SNI for fortified rice kernels to facilitate the import and local production of FRK. An appropriate standard and enforcement of that standard will also improve the effectiveness of rice fortification.

6.3 Regulatory Monitoring

- Commission a review of all components of regulatory monitoring for food fortification to document the various components since there are different implementors, and look for ways to streamline and simplify the process in line with recommendations from the 2017 WHO/FAO Review of the Food Control System.119 In particular, assess options for developing a more integrated food control system to reduce the number of monitoring activities and duplication between BPOM and MoI and reduce the burden on industry. The fact that LSPro has been authorized by both BPOM and MoI potentially creates opportunities for greater integration.

- Develop a system to monitor use of fortified food in the manufacture of processed foods in order to enforce national requirements for the use of fortified ingredients in such products. This could be achieved by simply verifying through document auditing that fortified versions of salt and wheat flour have been ordered and delivered, e.g., by review of CoA of the salt/wheat flour.

- [Wheat flour specific] Undertake a cost benefit analysis on testing wheat flour samples for the level of one or two 'marker nutrients' rather than all nutrients in the wheat flour premix, in addition to verifying premix quality and composition through document audits.

- [Salt specific] Organize a discussion between relevant stakeholders, including provincial and district government, to discuss how best to support SME salt processors while at the same time enforcing the SNI. In particular the group needs to resolve the problem that SME salt processors are often unable to achieve CPPOB and/or SNI certification and hence obtain an MD license yet are not allowed to apply for PIRT license, in order to enable them to be fully licensed and monitored.

118 https://www.who.int/publications/i/item/9789241550291
119 FAO & WHO. Assessment of the national food control system in Indonesia. 2018

6.4 Assessment of Coverage and Impact

» Explore the possibility of using the blood collected by the SKI 2023 survey for vitamin A assessment to assess also other micronutrients such as iron and folic acid

» Create a working group or taskforce within the Food Fortification Forum that is responsible for seeking/keeping an eye out for opportunities to assess indicators relevant to fortification through planned data collection exercises such as surveillance systems and national surveys.

» Use the Forum to improve understanding amongst food fortification stakeholders on ways to assess the coverage and evaluate the impact of LSFF, including identifying optimal indicators and understanding how to interpret results. In particular it would be useful to improve the understanding of the limitations of anaemia as an indicator of wheat flour fortification and how to interpret urinary iodine concentration data

» [Wheat flour specific] Develop a methodology to evaluate the impact of wheat flour fortification using the new SNI. This may need to be a controlled trial comparing a population consuming wheat flour fortified as per the previous SNI compared the current SNI, a literature review on the evidence for impact of electrolytic iron vs ferrous fumarate or an assessment of iron status in a population now that all wheat flour is made with ferrous fumarate. The final option has the disadvantage of not having a comparison group but it could potentially demonstrate that the population has adequate iron status that might be attributable to fortification with ferrous fumarate. This evaluation is being requested by the wheat flour millers as they want 'proof' that flour fortification is now effective. However, as levels of iron, zinc and folic acid are all lower than recommended for Indonesia's current level of wheat flour consumption, it is possible that an evaluation will not find the programme to be effective, despite the fact that ferrous fumarate is now being used.

» [Oil specific] In order to get a better estimate of cooking oil consumption, undertake a review or assessment on how cooking oil is used (what proportion is consumed vs used as a cooking medium) and assess how much oil is consumed vs thrown away when oil is used as a cooking medium. This will provide more accurate data on oil consumption in order to estimate vitamin A intake through fortified oil.

Annexes

Annex 1 Large Scale Food Fortification Legislation, Regulations and Standards Inventory

Annex 1. Large Scale Food Fortification Legislation, Regulations and Standards Inventory

No.	Name Bahasa	Name English	NUMBER	Food	Year	No.	Issued by:	Subject
1	Standar Nasional Indonesia (SNI) untuk Minyak Goreng Sawit	SNI for Palm Cooking Oil	SNI 7709: 2012	Edible oil	2012	7709	BSN	Voluntary edible oil standard- included fortification; made mandatory in 2013 and revised in 2019
2	Peraturan Menteri Perindustrian Nomor 87/M-IND/PER/12/2013 Tahun 2013 Tentang Tentang Pemberlakuan Standar Nasional Indonesia (SNI) Minyak Goreng Sawit Secara Wajib	Regulation Of The Minister Of Industry Normor 87/M-IND/ PER/12/2013 Concerning Mandatory Implementation Of Indonesian National Standards For Palm Cooking Oil	No.87/M-IND/PER/12/2013	Edible oil	2013	87	MOI	Makes SNI for palm cooking oil mandatory. References 7709:2012- 45IU. Amended by No. 35/M-IND/PER/3/2015 and in 2018 by No 47/2018 and in 2019 by 2019/46. WTO notification says "all palm oil produced within the country or imported, distributed and marketed in the country shall fulfil the SNI requirements. The producers which produced these products therefore shall be packed and comply with the requirements of SNI proven by having Product Certificate for Using SNI Mark and put SNI mark on every product." Specifies vit A content at distribution level of 40IU.
3	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/77	Edible oil	2013	77	WTO	References Draft Decree of Minister of Industry on Mandatory Implementation of Indonesia National Standard for Palm Oil- presumably 87/2013 which makes SNI mandatory- SNI 7709:2012
4	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/77 Add.1	Edible oil	2014	77,1	WTO	Adendum that previous WTO notification refers to 87/M-IND/PER/12/2013
5	Peraturan Menteri Perdagangan Republik Indonesia Nomor 80/M-Dag/Per/ 10/2014 Tentang Minyak goreng wajib kemasan	Regulation of Minister Trade Of The Republic Of Indonesia Number 80/M-DAG/PER/ 10/2014 Concerning Packaging Required For Fried Oil	80/M-DAG/PER/ 10/2014	Edible oil	2014	80	MOT	Bulk oil is required to be packaged. Regulation updated in 2015, 2016, 2020, 2021, 2022
6	Peraturan Menteri Perdagangan Nomor 21/M-DAG/PER/3/2015 Tahun 2015 tentang Perubahan atas Peraturan Menteri Perdagangan Nomor 80/M-DAG/ PER/10/2014 Tentang Minyak Goreng Wajib Kemasan	Regulation of the Minister of Trade Number 21/M-DAG/ PER/3/2015 of 2015 concerning Amendments to Regulation of the Minister of Trade Number 80/M-DAG/ PER/10/2014 concerning Compulsory Packaging of Cooking Oil	21/ M-DAG/ PER/ 3/2015	Edible oil	2015	21	MOT	cooking oil must be packaged in Indonesia. Aims to maintain the hygiene and quality (minimum Iodine Value of 561) of cooking oil made from palm oil consumed by the public, while cooking oil made from other vegetable raw materials must comply with these provisions starting January 1 2017.

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7	Peraturan Menteri Perindustrian Republik Indonesia Nomor 35/M-Ind/Per/3/2015 Tentang Perubahan Atas Peraturan Menteri Perindustrian Nomor 87/M-Ind/Per/12/2013 Tentang Pemberlakuan Standar Nasional Indonesia (SNI) Minyak Goreng Sawit Secara Wajib	Regulation Of The Minister Of Industry Of The Republic Of Indonesia Number 35/M-IND/PER/3/2015 Concerning Amendments To Regulation Of The Minister Of Industry Number 87/M-IND/PER/12/2013 Concerning Mandatory Application Of Indonesian National Standards (SNI) For Palm Cooking Oil	35/M-IND/PER/3/2015	Edible oil	2015	35	MOI	Specifies IU level at market level- 20 IU. Amended by 100/2015 due to changes in implementation date (31 December 2018).
8	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/77 Add.2	Edible oil	2015	77,2	WTO	Regulation of Minister of Industry No.87/M-IND/PER/12/2013 amended by Regulation of Minister of Industry No. 35/M-IND/PER/3/2015. Refers to a change in vit A content
9	Peraturan Menteri Perindustrian Nomor 100/m-ind/per/11/2015 Tahun 2015 Tentang Perubahan Kedua Atas Peraturan Menteri Perindustrian Nomor 87mindper122013 Tentang Pemberlakuan Standar Nasional Indonesia Sni Minyak Goreng Sawit Secara Wajib	Regulation of the Minister of Industry Number 100/m-ind/per/11/2015 of 2015 concerning the Second Amendment to the Regulation of the Minister of Industry Number 87mindper122013 concerning the Mandatory Implementation of the Indonesian National Standard SNI for Palm Cooking Oil	100/M-IND/PER/11/2015	Edible oil	2015	100	MOI	Amendment of No. 35/M-IND/PER/3/2015- changes in implementation date (31 December 2018).
10	Peraturan Menteri Perdagangan Nomor 09/M-DAG/PER/2/2016 Tahun 2016 tentang Perubahan Kedua atas Peraturan Menteri Perdagangan Nomor 80/M-DAG/PER/10/2014 tentang Minyak Goreng Wajib Kemasan	Regulation of the Minister of Trade Number 09/M-DAG/PER/2/2016 of 2016 concerning Second Amendment to Regulation of the Minister of Trade Number 80/M-DAG/PER/10/2014 concerning Compulsory Packaging of Cooking Oil	09/M-DAG/PER/2/2016	Edible oil	2016	9	MOT	Packaging
11	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/77/Add.3	Edible oil	2018	77,3	WTO	Regulation of Minister of Industry No.87/M-IND/PER/12/2013 as amended by Regulation of Minister of Industry No. 35/M-IND/PER/3/2015 amended by Regulation of Minister of Industry No. 100/M-IND/PER/11/2015. Due to changes in implementation date (31 December 2018).

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12	Peraturan Menteri Perindustrian Republik Indonesia Nomor 47 Tahun 2018 Tentang Perubahan Ketiga Atas Peraturan Menteri Perindustrian Normor 87/M/ Ind/Per/12/2013 Tentang Pemberlakuan Standar Nasional Indonesia Minyak Goreng Sawit Secara Wajib	Regulation Of The Minister Of Industry Of The Republic Of Indonesia Number 47 Of 2018 Concerning Third Amendment To Regulation Of The Minister Of Industry Normor 87/M-IND/ PER/12/2013 Concerning Mandatory Implementation Of Indonesian National Standards For Palm Cooking Oil	47/2018; BN 2018/No.1783; LL KEMENPERIN: 5 HLM	Edible oil	2018	47	MOI	Third amendment of Regulation 87/2013 on mandatory implementation of SNI for Palm Cooking Oil- to syncronise enforcement date with packaing regulation. References 2012 SNI. Amended again in 2019/46
13	SNI 7709:2019 untuk Minyak Goreng Sawit	SNI 7709:2019 Palm cooking oil	SNI 7709:2019	Edible Oil	2019	7709	BSN	Palm cooking oil SNI, revision of 2012 version
14	Peraturan Menteri Perindustrian Republik Indonesia Nomor 46 Tahun 2019 Tentang Pemberlakuan Standar Nasional Indonesia Minyak Goreng Sawit Secara Wajib	Regulation Of The Minister Of Industry Of The Republic Of Indonesia Number 46 Of 2019 Concerning Mandatory Implementation Of Indonesian National Standards For Palm Cooking Oil	46/2019	Edible oil	2019	46	MOI	Made oil fortification mandatory. Ammendment of 47/2018. Refers to SNI 7709 2012 and 2019. Revokes all previous regulations. No specification of vit A level at distribution level.
15	Peraturan Menteri Perdagangan Republik Indonesia Nomor 36 Tahun 2020 Tentang Minyak Goreng Sawit Wajib Kemasan	Regulation Of The Minister Of Trade Of The Republic Of Indonesia Number 36 Of 2020 About Palm Cooking Oil Must Be Packaged	36/2020	Edible Oil	2020	36	MOT	Palm cooking oil must be packaged
16	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/77/Add.4	Edible oil	2020	77,4	WTO	MoI notice to WTO that No. 87/M-IND/ PER/12/2013 has been replaced by Minister of Industry No. 46 Year 2019 and 2012 SNI has been replaced by 2019 SNI
17	Surat Edaran Nomor 6 Tahun 2020 tentang Pengecualian Sementara Kandungan Vitamin A dan/atau Pro Vitamin A pada Minyak Goreng Sawit	Circular Letter No. 6 of 2020 regarding Temporary Exclusion of Vitamin A and/or Pro Vitamin A Content in Palm Cooking Oil	6/2020	Edible oil	2020	6	MOI	Temp suspension of fortification requirement- same as for wheat flour
18	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1/Add.2/Corr.1	Edible oil	2020	1	WTO	Temp suspension of fortification requirement- same as for wheat flour

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19	Peraturan Menteri Perdagangan Republik Indonesia Nomor 72 Tahun 2021 Tentang Perubahan Atas Peraturan Menteri Perdagangan Nomor 36 Tahun 2020 Tentang Minyak Goreng Sawit Wajib Kemasan	Regulation Of The Minister Of Trade Of The Republic Of Indonesia Number 72 Of 2021 Concerning Amendment To The Regulation Of The Minister Of Trade Number 36 Of 2020 Concerning Cooking Oil Palm Mandatory Packaging	72/2021	Edible Oil	2021	72	MoT	Amendment of 2020/36
20	Peraturan Menteri Perdagangan Republik Indonesia Nomor 001 Tahun 2022 Tentang Penyediaan Minyak Goreng Kemasan Sederhana Untuk Kebutuhan Masyarakat Dalam Kerangka Pembiayaan Oleh Badan Pengelola Dana Perkebunan Kelapa Sawit	Regulation Of The Minister Of Trade Of The Republic Of Indonesia Number 001 Of 2022 About Supply Of Simple Packaged Cooking Oil For Public Needs Society In The Framework Financing By The Palm Plantation Fund Management Agency	1/2022	Edible Oil	2022	1	MOT	Packaging- She also explained that subsidy for unpackaged cooking oil was regulated by the Regulation of the Minister of Trade No. 1 of 2022 on Provision of Unpackaged Cooking Oil for Public Needs for Funding by the Palm Oil Plantation Fund Management Agency on January 11, 2022, which has been revoked and replaced by the Regulation of the Minister of Trade No. 3 of 2022.
21	Peraturan Menteri Perdagangan (Permendag) Nomor 33 Tahun 2022 tentang Tata Kelola Program Minyak Goreng Curah Rakyat (MGCR)	Regulation of the Minister of Trade (Permendag) Number 33 of 2022 concerning the Bulk Cooking Oil Public Program	33/2022	Edible oil	2022	33	MOT	Replaces 1/2022. To optimize the distribution of bulk cooking oil, she added, the Government created the bulk cooking oil public program (MGCR) through the Regulation of the Minister of Trade No. 33 of 2022 on the Regulatio of the Bulk Cooking Oil Public Program, hereinafter referred to as Permendag No. 33 of 2022. The MGCR has spread to 1200 locations until June 10, 2022. Retailers participating in this program was planned to number 10 thousand across 212 regencies/cities in Indonesia. Every MGCR transaction in public markets is carried out through a digital application. people's bulk cooking oil program (MGCR) aims to provide bulk cooking oil to the public in accordance with the highest retail price (HET) which is set at Rp. 14,000 per liter or Rp. 15. 500 per kg.
22	Peraturan Menteri Perdagangan Republik Indonesia Nomor 41 Tahun 2022 Tentang Tata Kelola Minyak Goreng Kemasan Rakyat	Regulation Of The Minister Of Trade Of The Republic Of Indonesia Number 41 Of 2022 Concerning Governance Of People'S Packaged Cooking Oil	41/2022	Edible Oil	2022	41	MoT	Packaging

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23	Peraturan Menteri Perdagangan Nomor 49 Tahun 2022 tentang Tata Kelola Program Minyak Goreng Rakyat	Minister'S Of Trade Of The Republic Of Indonesia Number 49 Of 2022 Concerning Governance Of The People'S Cooking Oil Program	49/2022	Edible oil	2022	49	MoT	People Cooking Oil Programme- The Indonesian Ministry of Trade officially launched Minyakita in 2022, an initiative that aims to provide fair and equal access to affordable cooking oil for the public.
24	Keputusan Direktur Jenderal Perdagangan Dalam Negeri Nomor 57 Tahun 2022 tentang Pembatasan Minyak Goreng Curah di MGCR	Decree of the Director-General of Domestic Trade No. 57 of 2022 on Restrictions over Bulk Cooking Oil in the MGCR	57/2022	Edible oil	2022	57	MoT	Through the Decree of the Director-General of Domestic Trade No. 57 of 2022 on Restrictions over Bulk Cooking Oil in the MGCR, it was determined that the MGCR restrict retailers to sell at most 10 kg of bulk cooking oil per day to each consumer who provides their NIK (resident identity number).
25	Keputusan Menteri Perindustrian Republik Indonesia Nomor 4057 Tahun 2023 Tentang Penunjukan Lembaga Penilaian Kesesuaian Dalam Rangka Pemberlakuan Standar Nasional Indonesia Secara Wajib	Decree Of The Minister Of Industry Of The Republic Of Indonesia Number 4057 Of 2023 Concerning The Appointment Of A Conformity Assessment Institution For The Mandatory Implementation Of Indonesian National Standards	4057/2023	Edible oil	2023	4057	MoI	
26	Instruksi Presiden (Inpres) No. 14 tahun 1974 tentang Perbaikan Menu Makanan Rakyat (UPMMR)	Presidential Instruction (Inpres) no. 14 of 1974 Regarding Improvement of People's Food Menu	14/1974	Food	1974	14	President	Presidential Instruction 14/1974: The President instructed 10 Ministers, namely the Minister of People's Welfare, Minister of State for EKUIN/Chairman Bappenas, Minister of Health, Minister of Industry, Minister of Home Affairs, Minister of Information, Minister Education and Culture, Minister of Religion, Minister of Trade, and Minister of Finance: 1. Carrying out efforts to improve the people's food menu nationally and comprehensively, both internally their respective duties as well as in collaboration between government departments/agencies 2. Specifically to the Minister of People's Welfare, to coordinate the implementation of menu improvement efforts people's food in accordance with the policies outlined by the government 3. Specifically for the Minister of Home Affairs, to assign regional governors and regents or mayors The Regional Head has general responsibility and coordinator for organizing quality improvement efforts food for the people in their respective regions, and provide technical instructions for implementing these efforts accordingly with those outlined by the government

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27	Undang-undang Nomor 7 Tahun 1996 Tentang Pangan	Law of the Republic of Indonesia Number 7 of 1996 concerning Food	7/1996	Food	1996	7	President & House of Representatives of Indonesia Republic	Included fortification. Replaced by 18 of 2012
28	Peraturan Pemerintah Nomor 28 Tahun 2004 Tentang Keamanan, Mutu dan Gizi Pangan	Govt Regulations No. 28 of 2004 about Food Safety, Quality and Nutrition.	28/2004	Food	2004	28	President	Food Safety, Quality and Nutrition
29	Peraturan Menteri Perindustrian Nomor 75/M-IND/PER/7/2010 Tentang Pedoman Cara Produksi Pangan Olahan yang Baik (Good Manufacturing Practices)	Regulation of the Minister of Industry Number 75/M-IND/ PER/7/2010 concerning Guidelines for Good Manufacturing Practices	75/M-IND/PER/7/2010	Food	2010	75	MOI	
30	Undang-undang Nomor 18 Tahun 2012 Tentang Pangan	Laws of the Republic of Indonesia No 18 of 2012 about Food	18/2012	Food	2012	18	President & House of Representatives of Indonesia Republic	Food Law
31	Peraturan Pemerintah Nomor 17 Tahun 2015 tentang Ketahanan Pangan dan Gizi	Food Security Government Regulation no.17/2015 on food security and nutrition	17/2015	Nutrition	2015	17	President	the regulation/requirements/standards for food fortification aims to tackle nutrition problems in the population
32	Peraturan BPOM No. 27 Tahun 2017 tentang Pendaftaran Pangan Olahan	BPOM Regulation No. 27 of 2017 concerning Registration for Processed Foods	27/2017	Food	2017	27	BPOM	fortified foods are included in the list of processed foods that should be registered in BPOM
33	Peraturan Badan Pengawas Obat dan Makanan Nomor 22 Tahun 2018 Tentang Pedoman Pemberian Sertifikat Produksi Pangan Industri Rumah Tangga	BPOM Regulation Number 22 of 2018 concerning Guidelines for Providing Home Industry Food Production Certificates	22/2018	Food	2018	22	BPOM	
34	Peraturan Pemerintah No. 86 Tahun 2019 tentang Keamanan Pangan	Government regulation no.86/2019 on Food Safety	86/2019	Food	2019	86	President	food control should be conducted by the relevant ministries/agency mandated for the food control/ safety/processed food control so that all the foods produced are based on the safety regulation and for the nutrition of the population
35	Peraturan BPOM No. 22 Tahun 2021 tentang Tatacara Penerbitan Ijin Penerapan Cara Produksi Pangan Olahan yang Baik (CPPOB)	BPOM Regulation No. 22 of 2021 concerning Procedures for Issuing Permits to Implement Good Processed Food Production Methods (CPPOB)	22/2021	Food	2021	22	BPOM	

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36	Peraturan Menteri Perindustrian Republik Indonesia Nomor 45 Tahun 2022 Tentang Standardisasi Industri	Regulation Of The Minister Of Industry Of The Republic Of Indonesia Number 45 Of 2022 About Industrial Standardization	45/2022	Food	2022	45	MoI	Determining the monitoring location, implementation time, and type of SNI to be monitored is carried out in the supervision plan which is prepared annually and determined by the Head of BSKJI (Article 98 of Minister of Industry Regulation 45 of 2022 concerning Industrial Standardization)
37	Keputusan Menteri Perindustrian Republik Indonesia Nomor 4057 Tahun 2023 Tentang Penunjukan Lembaga Penilaian Kesesuaian Dalam Rangka Pemberlakuan Standar Nasional Indonesia Secara Wajib	Decree of The Minister of Industry of The Republic Of Indonesia Number 4057 Of 2023 Concerning The Appointment of a Conformity Assessment Institution For The Mandatory Implementation of Indonesian National Standards	4057/2023	Food	2023	4057	MoI	list of the accredited agencies for SNI certification
38	Peraturan Menteri Perindustrian dan Perdagangan nomor 153/ mpp/k3p/MPP/Kep/5/2001	Minister of Industry and Trade Regulation number 153/mpp/ k3p/MPP/Kep/5/2001	153/mpp/k3p/MPP/ Kep/5/2001	Rice	2001	153	MOIT	Promotion by Bulog of fortified rice
39	SNI 6128:2020 untuk Beras	SNI 6128:2020 for Rice	SNI 6128:2020	Rice	2020	6128	BSN	Rice SNI
40	Peraturan Badan Pangan Nasional No. 4 Tahun 2022 Tentang Penyaluran Cadangan Beras Pemerintah dalam Rangka Ketersediaan Pasokan dan Stabilisasi Harga Bagi Keluarga Penerima Manfaat	Regulation of the National Food Agency of the Republic of Indonesia No. 4 of 2022 concerning Distribution of Government Rice Reserves in the Context of Supply Availability and Price Stabilization for Beneficiary Families	4/2022	Rice	2022	4	NFA	Rice for the Poor prog
41	Peraturan Badan Pangan Nasional Nomor 2 Tahun 2023 Tentang Persyaratan Mutu dan Label Beras	Regulation of the National Food Agency of the Republic of Indonesia No. 2 of 2023 on Quality Requirements and Rice Labelling	2/2023	Rice	2023	2	NFA	National Food Agency released Regulation No. 2/2023 on Rice Quality and Labelling Standards.
42	Undang-undang (UU) Nomor 13 Tahun 1959 tentang Penetapan "Undang-Undang Darurat No. 25 Tahun 1957 Tentang Penghapusan Monopoli Garam dan Pembikinan Garam Rakyat" (Lembaran-Negara Tahun 1957 No. 82), Sebagai Undang-Undang	Law (UU) Number 13 of 1959 concerning the Establishment of "Emergency Law No. 25 of 1957 concerning the Elimination of Salt Monopolies and People's Salt Manufacturing" (State Gazette of 1957 No. 82), as Law	13/1959	Salt	1959	13		Law 13/1959, the quality of consumption salt circulating on the market is not controlled including the iodine content, following the abolishment of salt monopoly in 1957

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43	Kesepakatan kerjasama antara UNICEF dan Pemerintah Indonesia yang diwakili oleh Kementerian Perindustrian terkait Program Gizi (Iodisasi Garam)	Cooperation agreement between UNICEF and the Indonesian Government represented by the Ministry of Industry regarding the Nutrition Program (Salt Iodization)		Salt	1975		MoI	24 July 1975 the Indonesian government, represented by the Minister of Industry, signed the Nutrition Activities agreement with Unicef regarding the Master Plan of Operations for Children in the context of Human Resources Development in Indonesia 1975 – 1979. One of the activities was the crash salt iodization program with a target of 250,000 tons per year.
44	Peraturan Menteri Kesehatan tentang Iodisasi Garam	Minister of Health Regulation concerning Salt Iodization	110/menkes/per/xi/1975	Salt	1975	110	MOH	Regulation on iodization of salt for consumption Minister of Health Regulation 110/Menkes/XI/1975 dated 29 November 1975: a. Iodized salt for public consumption is salt that contains 40 ppm of potassium iodate b. Iodized consumption salt must be registered with the Ministry of Health cq Directorate General of Supervision Medicine and Food 3. Iodized consumption salt at production level contains 40 ppm KIO3 with a tolerance of 25% 4. Consumable salt distributed for trade must be wrapped in an airtight container or package water and quality that meets the requirements based on research results appointed by the Head of the Office The local Department of Industry area if there is no Industrial Research Institute
45	Peraturan Kementerian Perdagangan tentang Tata Niaga Garam Beryodium	Ministry of Trade Regulations on Iodized Salt Trade System	37/dagri/lp/kp/iv/1982	Salt	1982	37	MOT	Governance on iodized salt Iodized salt trade system
46	Implementasi Keputusan Bersama dengan Menteri Perindustrian dan Menteri Kesehatan, serta Menteri Perdagangan tentang Tata Niaga Garam Beryodium	Implementation of the joint decree with the minister of industry and minister of health, as well as the minister of trade regarding trade systems iodized salt	080/djai/sk/iv/1982	Salt	1982	80	MOI	Implementation of the joint decree with the minister of industry and minister of health, as well as the minister of trade regarding trade systems iodized salt
47	Surat Keputusan Menteri Kesehatan	Minister of Health Decree	1888/b/sk/ix/1982	Salt	1982	1888	MOH	Implementation of iodized salt by MOH Implementation of the joint decision letter regarding the salt trade system iodized

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48	Keputusan Bersama Menteri Perindustrian, Menteri Kesehatan, Menter iPerdagangan, danMenteriDalamNegeriNomor 185/M/SK/5/ 1985, Nomor 242/ Men.Kes/SKB/IV/1985, Nomor 56A/Kpb/V/1985, danNomor 22 Tahun 1985 tentang Garam Beryodium	Joint Decree of the Minister of Industry, Minister of Health, Minister of Trade, and Minister of Home Affairs Number 185/M/SK/5/1985, Number 242/Men.Kes/SKB/IV/1985, Number 56A/Kpb/V/1985, and Number 22 of 1985 concerning Iodized Salt	185/M/SK/1985	Salt	1985	185	industry, trade, health, home affairs	Joint Decree to strengthen govt coordination on production of IS
49	Keputusan Menteri Kesehatan Republik Indonesia Nomor 165/ Men.kes/SK/II/1986 tentang Persyaratan Garam Berodium	Decree of the Minister of Health of the Republic of Indonesia Number 165/Men. kes/SK/II/1986 concerning Requirements for Iodized Salt	165/Men.kes/SK/II/1986	Salt	1986	165	MoH	Standard for IS- 40-50 mg / kg KIO3 at production and 30-50 mg / kg KIO3 at distribution. References Joint Decee of 1985
50	SNI 01- 0221-1987 tentang Iodisasi Garam Konsumsi	SNI 01- 0221-1987 for Iodization of Salt for Consumption	SNI 01- 0221-1987	Salt	1987	221	BSN	Iodization of Consumption Salt- under MOI 110/1975 for production of iodized salt. Sets level of iodine in consuption salt- 40ppm KIO3 at production level
51	SNI 01- 0223-1987 tentang Garam Beryodium	SNI 01- 0223-1987 for Iodine Salt	SNI 01- 0223-1987	Salt	1987	223	BSN	Iodized salt- for adding to food (under product category 67.220.20)
52	Keputusan Presiden Republic Indonesia Nomor 69 Tahun 1994 tentang Pengadaan Garam Beriodium	Decree of the President of the Republic of Indonesia Number 69 of 1994 concerning Procurement of Iodized Salt	69/1994	Salt	1994	69	President	Requires the iodizaton of salt for human and animal consumption, salted fish and food processing.
53	SNI 3556: 1994 tentang Garam Konsumsi Beryodium	SNI 3556: 1994 for Iodine Salt Consumption	SNI 3556: 1994	Salt	1994	3556	BSN	First BSN SNI for iodized consumption salt
54	Surat Keputusan Menteri Perindustrian Nomor : 78/M/ Sk/5/1995 Peraturan Menteri Perindustrian Nomor : 78/M/ Sk/5/1995 Tentang Pembentukan Komite Garam Nasional	Letter Of Order Of The Minister Of Industry No.: 78/M/Sk/5/1995 regarding The Establishment Of National Salt Committee	78/M/SK/5/1995	Salt	1995	78	MOI	Establishment of the National Salt Committee
55	Keputusan Menteri Perindusrian dan Perdagangan Nomor 77/M/ SK/5/1995.	MoI Decree No. 77/M/SK/1995 on Technical Requirements for Production, Packaging and Labelling of Iodized Salt	77/M/SK/1995	Salt	1995	77	MOI	Sets conditions for production of IS- Technical requirement to proces, pack and label iodized salt Replaced by 42 in 2005

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56	Surat Keputusan Menteri Perindustrian Nomor : 29/M/Sk/2/1995 Tentang Izin Dan Pelaksanaan Standar Nasional Indonesia (Sni) Dan Wajib Pelabelan Sni Pada 10 (Sepuluh) Produk Industri	Letter Of Order Of The Minister Of Industry No.: 29/M/Sk/2/1995 Regarding Authorization And Implementation of Indonesian National Standard (SNI) And Obligatory Labelling of SNI On 10 (Ten) Industrial Products	29/M/SK/2/1995	Salt	1995	29	MOI	Implementation of SNI for 10 industry products including consumption salt. Refers to 1994 SNI.
57	Instruksi Kementerian Dalam Negeri kepada pemerintah daerah untuk GAKY	Ministry of Home Affairs instruction to sub-national government for GAKY	-	Salt	1997	15	MOHA	Min of HA instruction to sub-national govt for GAKY
58	Keputusan Menteri Perindustrian dan Perdagangan Nomor 230/MPP/Kep/7/1997 tentang Barang yang Diatur Tata Niaga Impornya	Decree of the Minister of Industry and Trade Number 230/MPP/Kep/7/1997 concerning Goods whose Import Trading Procedures are Regulated	230/MPP/Kep/7/1997	Salt	1997	230	MOT	Import regulation changed several times- latest is 406/MPP/Kep/2001 Regulation for imports- describes who is authorised and the process to follow Art 2- enterprises authorised to import food & beverage mentioned in Annex 1 are PT Dharma Niaga and Cipta Niaga (IT authorisation for importers). Quantity and type and quantity of F&B that can be imported by these PT are regulated by the MOIT. Wheat & wheat flour- Bulog (import focal point) Rice- Bulog Bulk Salt- min 96% NaCl wet basis- authorised importers (IP- IP authorization for producers of that product)
59	SNI 4435: 1998 tentang Garam bahan baku untuk industri garam beryodium	SNI 4435: 1998 concerning Raw material salt for the iodized salt industry	SNI 4435: 1998	Salt	1998	4435	BSN	Raw material for iodized salt
60	SNI 01-3556.1-1999 tentang Garam Dapur	SNI 01-3556.1-1999 for Table Salt	SNI 01-3556.1-1999	Salt	1999	3556,1	BSN	Savory salt. Iodine is not required
61	Usulan Perubahan Kepres No 69/94	Proposed Amendments to Presidential Decree No.69/94		Salt	2000	1101	MOI	Letter from MoI to propose a change to the Presidential Decree 69/1994
62	SNI 4435:2000 tentang Garam bahan baku untuk industri garam beryodium	SNI 4435:2000 for raw material for the iodized salt industry	SNI 4435:2000	Salt	2000	4435	BSN	SNI for raw salt to be used in iodized salt production. Updated in 2015
63	SNI 3556:2000 tentang Garam Konsumsi Beryodium	SNI 3556:2000 concerning Iodized Salt for Consumption	SNI 3556:2000	Salt	2000	3556	BSN	Iodized consumption salt. Updated in 2010 and 2016
64	Notifikasi WTO	WTO Notification		Salt	2000		WTO	
65	Pemutakhiran peraturan impor garam	Update of regulation on import of salt		Salt	2001	406	MOT	Update of regulation on import of salt

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66	Keputusan Menteri 360/ MPP/Kep/5/2004. Amanat Pelaksanaan Keputusan Menteri Perdagangan Republik Indonesia tentang Impor Garam	Ministerial Decree 360/ MPP/Kep/5/2004. Mandate Implementation of a Decree of the Minister of Trade of the Republic of Indonesia on Salt Import	360/MPP/Kep/5/2004	Salt	2004	360	MoT	Mandate implementation of a Decree on Salt Import- description of services of SGS staff
67	Peraturan Menteri Perdagangan Republik Indonesia Nomor: 20/M-Dag/Per/9/2005 Peraturan Impor Garam	The Minister Of Trade Of The Republic Of Indonesia Regulation No.: 20/M-Dag/ Per/9/2005 Arrangement On Salt Importation	20/M-DAG/PER/9/2005	Salt	2005	20	MoT	Regulation on salt importation
68	Peraturan Menteri Perindustrian Republik Indonesia Nomor 42/M-Ind/Per/11/2005 Tentang Pengolahan, Pengemasan Dan Pelabelan Garam Beriodium	Regulation No 42/M-Ind/Per/11 Of The Moi- Regulation Of The Minister Of Industry Of The Republic Of Indonesia Number 42/M-Ind/Per/11/2005 Regarding Preparation, Packaging And Labeling Of Iodized Salt	42/M-IND/PER/11/2005	Salt	2005	42	MOI	Appears to be guidance for production of iodized salt rather than regulation to make the SNI mandatory. Revokes 77 of 1995 and refers to Presidential Decree 69 of 1994. References SNI 3556:2000 for IS and SNI 4435:2000 for raw material for producing iodized sal and the mandatory requirements for iodization inclicated by 29/M/SK/2/1995.
69	Peraturan Menteri Perdagangan Nomor 44/M-DAG/PER/10/2007 tentang Perubahan Atas Peraturan Menteri Perdagangan Nomor 20/m-dag/per/9/2005 Tentang Ketentuan Impor Garam	Regulation of the Minister of Trade Number 44/M-DAG/ PER/10/2007 concerning Amendments to Regulation of the Minister of Trade Number 20/m-dag/per/9/2005 concerning Salt Import Provisions	No. 44/M-DAG/PER/10/2007	Salt	2007	44	MoT	update of 20/2005. Nullified by 20/2012
70	Peraturan Menteri Perindustrian Nomor 100/m-ind/per/10/2009 Tahun 2009 Tentang Pencabutan Pemberlakuan Standar Industri Indonesia (SII) dan Standar Nasional Indonesia (SNI) Secara Wajib	Regulation of the Minister of Industry Number 100/m-ind/per/10/2009 of 2009 concerning the Mandatory Revocation of the Implementation of Indonesian Industrial Standards (SII) and Indonesian National Standards (SNI)	100/M-IND/per/10/2009	Salt	2009	100	MOI	Revocation of 29/M/SK/2/1995 although not for salt.
71	Peraturan Menteri Kesehatan Republik Indonesia Nomor 30 Tahun 2013 Tentang Pencantuman Informasi Kandungan Gula, Garam, Dan Lemak Serta Pesan Kesehatan Untuk Pangan Olahan Dan Pangan Siap Saji	Regulation Of The Minister Of Health Of The Republic Of Indonesia Number 30 Of 2013 About Including Information On Sugar, Salt And Fat Content As Well As Health Messages For Processed Foods And Ready Food	30/2013	Salt	2009	30	MOH	Label salt, sugar, fat content of processed foods. Updated by 2015/63 to delay implementation to 2019

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72	Peraturan Kementerian Perindustrian Republik Indonesia Nomor 134/M-Ind/ Per/10/2009 Tentang Peta Jalan Pengembangan Klaster Industri Garam	Regulation Of Ministry Of Industry Of The Republic Of Indonesia No. 134/M-Ind/ Per/10/2009 On A Road Map For The Development Of Cluster Of Salt Industry	134/M-IND/PER/10/2009	Salt	2009	134	MOI	Roadmap
73	SNI 3556:2010 tentang Garam Konsumsi Beryodium	SNI 3556:2010 concerning Iodized Salt for Consumption	SNI 3556:2010	Salt	2010	3556	BSN	Revised from 2000 version to reduce NaCL content from 94.7 to 94%. Updated in 2016
74	Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia Nomor Per.21/Men/2010 Tentang Pedoman Pelaksanaan Program Nasional Pemberdayaan Masyarakat Mandiri Kelautan Dan Perikanan Tahun 2011	Regulation Minister Of Marine And Fisheries Of The Republic Of Indonesia Number Per.21/ Men/2010 About Guidelines For Implementing The National Marine And Fisheries Independent Community Empowerment Program 2011	21/MEN/2010	Salt	2010	21	MoMF	Established the PUGAR programme- support to domestic salt farmers
75	Peraturan Menteri Dalam Negeri No. 63 Tahun 2010 Tentang Pedoman Penanggulangan Gangguan Akibat Kekurangan Yodium di Daerah	Regulation of the Minister of Home Affairs No. 63 of 2010 providing Guidelines for the Control of IDD in the Region	63/2010	Salt	2010	63	MoHA	Guides provincial and district actions to control IDD. Supported by MoHA regulation of 2014. Revoked by 6/2018.
76	Peraturan Menteri Perindustrian Nomor 109/m-ind/per/10/2010 Tahun 2010 Tentang Penunjukan Lembaga Penilaian Kesesuaian dalam Rangka Pemberlakuan dan Pengawasan Standar Nasional Indonesia (SNI) Atas 58 (lima Puluh Delapan) Produk Industri Secara Wajib	Regulation of the Minister of Industry Number 109/m-ind/ per/10/2010 of 2010 concerning the Appointment of a Conformity Assessment Institution for the Compulsory Implementation and Supervision of Indonesian National Standards (SNI) on 58 (fifty-eight) Industrial Products	109/M-IND/PER/10/2010	Salt	2010	109	MoI	Establishes certification body for 58 mandatory SNIs. Don't see that it covers salt but it does cover wheat flour SNI from 2006
77	Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia Nomor Per.06/Men/2011 Tentang Pedoman Pelaksanaan Program Nasional Pemberdayaan Masyarakat Mandiri Kelautan Dan Perikanan Tahun 2011	Regulation Minister Of Marine And Fisheries Republic Of Indonesia Number Per.06 /MEN/ 2011 About Implementation Guidelines For National Community Development Program Self Marine And Fisheries In 2011	06 / MEN / 2011	Salt	2011	6	MoMF	National development of marine and fisheries
78	Peraturan Perdagangan Luar Negeri tahun 2011 tentang harga garam di tingkat tambak garam	2011 Foreign Trade Regulation on price of salt at level of salt farms	01/DAGLU/PER/5/2011	Salt	2011	2	MOT	2011 Foreign Trade Regulation on price of salt at level of salt farms
79	Peraturan Menteri Kesehatan Nomor 33 Tahun 2012 Tentang Bahan Tambahan Pangan	Minister of Health Regulation Number 33 of 2012 concerning Food Additives	33/PERMENKES/2012	Salt	2012	33	MOH	on food additives

No.	Name Bahasa	Name English	NUMBER	Food	Year	No.	Issued by:	Subject
80	Peraturan Menteri Perindustrian Nomor 101/M-IND/PER/10/2012 Tahun 2012 Tentang Penunjukan Lembaga Penilaian Kesesuaian dalam Rangka Pemberlakuan dan Pengawasan Standar Nasional Indonesia (SNI) Garam Konsumsi Beryodium Secara Wajib	Regulation of the Minister of Industry Number 101/M-IND/PER/10/2012 of 2012 concerning the Appointment of a Conformity Assessment Institution for the Implementation and Supervision of the Indonesian National Standard (SNI) for Compulsory Iodized Salt Consumption	101/M-IND/PER/10/2012	Salt	2012	101	MOI	Revokes previous regulation designating Product Certification Bodies
81	Peraturan Menteri Perdagangan Nomor 58/M-Dag/Per/9/2012 Tentang Ketentuan Impor Garam	Regulation Of The Minister Of Trade No. 58/M-Dag/ Per/9/2012 Concerning Provisions On The Import Of Salt	58/M-DAG/PER/9/2012	Salt	2012	58	MoT	Provisions on the import of salt; rules in particular on consumption salt. Only salt processors and PT Garam can import
82	Keputusan Menteri PerindustrianNomor (79/M/IND/ PER/7/2012) tentang Penunjukan Lembaga Penilaian Kesesuaian dalam rangka Pemberlakukan dan pengawasan Standar Nasional Indonesia (SNI) Garam Konsumsi Beryodium secara Wajib	Decree of the Minister of Industry Number (79/M/IND/ PER/7/2012) concerning the Appointment of a Conformity Assessment Institution for the Mandatory Implementation and Supervision of the Indonesian National Standard (SNI) for Iodized Salt for Consumption	79/M/IND/PER/7/2012	Salt	2012	79	MoI	Appointing a certification body for SNI 3556:2000 Appointment of a Conformity Assessment Body in order implementation and supervision of SNI for Iodized Consumable Salt compulsorily
83	SNI 0303:2012 tentang Garam Industri untuk Soda Kaustik	SNI 0303:2012 concerning Industrial Salt for Caustic Soda	SNI 0303:2012	Salt	2012	303	BSN	Salt for the caustic soda industry
84	Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia Nomor 2/Permen-Kp/2013 Tentang Pedoman Program Pemberdayaan Nasional Kelautan Dan Perikanan Mandiri	Regulation Marine And Fisheries Minister Of The Republic Of Indonesia Number 2/Permen-Kp/2013 About National Empowerment Program Guidelines The Independent Marine And Fisheries	2/PERMEN-KP/2013	Salt	2013	2	MOMF	Guidelines for marine and fisheries
85	Regulation Permenperind no 10 tahun 2013 (10/M-IND/ PER/2/2013) penunjukan lembaga penilaian Kesesuaian dalam rangka pemberlakuan dan pengawasan SNI garam konsumsi beryodium secara wajib	Appointment of a Conformity assessment institution for the mandatory implementation and supervision of SNI for iodized consumption salt	10/M-IND/PER/2/2013	Salt	2013	10	MOI	Appoint and designate Product Certification Bodies and Testing Labs for conformity assessment for mandatory SNI for iodized consumption salt. Refers to SNI 3556:2000 Appointment of a Conformity Assessment Institution in the framework of implementation and mandatory supervision of SNI for Iodized Consumable Salt Revokes 109/2010

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86	Permenperin No. 59/M-IND/PER/11/2013 Tahun 2013 Tentang Perubahan Atas Peraturan Menteri Perindustrian Nomor 10/M-IND/PER/2/2013 Tentang Penunjukan Lembaga Penilaian Kesesuaian dalam Rangka Pemberlakuan dan Pengawasan Standar Nasional Indonesia (SNI) Garam Konsumsi Beryodium Secara Wajib	Minister of Industry Regulation No. 59/M-IND/PER/11/2013 of 2013 concerning Amendments to the Regulation of the Minister of Industry Number 10/M-IND/PER/2/2013 concerning the Appointment of a Conformity Assessment Institution in the Context of Implementing and Supervising the Indonesian National Standard (SNI) for Iodized Consumable Salt Mandatory	59/2013	Salt	2013	59	MOI	Amendment to Permenperin 10/M-IND/per/2/2013 concerning appointment Conformity Assessment Institution in the context of enforcement and supervision SNI for mandatory consumption of iodized salt. Does not refer to any particular SNI
87	Peraturan Kementerian Kesehatan 30 Tahun 2013 Tentang Pencantuman Informasi Kandungan Gula, Garam, Dan Lemak, Serta Pesan Kesehatan Pada Label Pangan Olahraga	Ministry Of Health Regulation 30/2013 On The Inclusion Of Sugar, Salt And Fat Content Information, As Well As Health Messages On The Labels Of Processed Foods	30/2013	Salt	2013	30	MOH	Label salt, sugar, fat content of processed foods. Updated by 2015/63 to delay implementation to 2019
88	Peraturan Menteri Perindustrian tentang Peta Jalan yang diperbarui, No. 88: 2014	MoI Regulation on updated Roadmap, No. 88: 2014	88/2014	Salt	2014	88	MoI	Regulation re-categorising salt for food processing from consumption salt to industrial salt
89	Peraturan Menteri Kesehatan Nomor 63 Tahun 2015 Perubahan atas Peraturan Menteri Kesehatan Nomor 30 Tahun 2013 tentang Pencantuman Informasi Kandungan Gula, Garam, dan Lemak Serta Pesan Kesehatan untuk Pangan Olahan dan Pangan Siap Saji	Minister of Health Regulation Number 63 of 2015 Amendment to Minister of Health Regulation Number 30 of 2013 concerning Inclusion of Information on Sugar, Salt and Fat Content and Health Messages for Processed Food and Ready-to-Eat Food	63/2015	Salt	2015	63	MOH	Update of 2013:30. Delays implementation to 2019. Statement to WTO says delay will enable conformity assessment, analysis of TDS etc.
90	Peraturan Menteri Perdagangan Republik Indonesia Nomor 125/M-Dag/Per/12/2015 Tentang Ketentuan Impor Garam	MOT Regulation on Provisions for the Importation of Salt	125/M-DAG/PER/12/2015	Salt	2015	125	MoT	Update of no 20:2012 to only allow PT Garam to import and only when there is insufficient domestic production, as determined by MoMAF. Replaced by 52: 2017 and 23: 2016
91	SNI 3556:2016 tentang Garam Konsumsi Beriodium	SNI 3556:2016 concerning Iodized Salt for Consumption	SNI 3556:2016	Salt	2016	3556	BSN	Revised from 2010 version with revised requirements for sampling, and testing water, iodine and mercury content
92	Keputusan Kepala BSN No. 323/KEP/BSN/12/2016 tentang Penetapan Revisi 1 (Satu) Standar Nasional Indonesia	Chairman of BSN Decree No. 323/KEP/BSN/12/2016 concerning Determination of Revision 1 (One) of the Indonesian National Standard	323/KEP/BSN/12/2016	Salt	2016	323	BSN	Advises that SNI 3556/2010 is replaced by 3556/2016 and 3556/2010 is no longer valid
93	SNI 8207:2016 tentang Garam industri aneka pangan	SNI 8207:2016 concerning Salt for food industries	SNI 8207:2016	Salt	2016	8207	BSN	SNI for salt used in food processing. Not mandatory-the SNI said it can be iodized or non-iodized salt (page 1 of the SNI doc)

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94	SNI 8209:2016 tentang Garam Konsumsi Cair Beriodium	SNI 8209:2016 for Iodized liquid consumable salt	SNI 8209:2016	Salt	2016	8209	BSN	Iodized liquid consumable salt
95	SNI 8208:2016 tentang Garam Diet	SNI 8208:2016 for Diet Salt	SNI 8208:2016	Salt	2016	8208	BSN	Diet salt
96	Peraturan Menteri Perdagangan Nomor 23/M-DAG/PER/3/2016 Tahun 2016 Tentang Perubahan Atas Peraturan Menteri Perdagangan Nomor 125/M-DAG/PER/12/2015 Tentang Ketentuan Impor Garam	Regulation of the Minister of Trade Number 23/M-DAG/PER/3/2016 of 2016 concerning Amendments to Regulation of the Minister of Trade Number 125/M-DAG/PER/12/2015 concerning Salt Import Provisions	23/M-DAG/PER/3/2016	Salt	2016	23	MOT	Replaced by 52/M-DAG/PER/8/2017
97	Menteri Kelautan Dan Perikanan Republik Indonesia Nomor 66/Permen-Kp/2017 Tentang Pengendalian Impor Komoditas Pergaraman	Minister Of Marine And Fisheries Of The Republic Of Indonesia Number 66/Permen-Kp/2017 About Import Control Of Salt Commodities	66/PERMEN-KP/2017	Salt	2017	66	MoMF	Control of salt commodities- similar principals to MOT regulations
98	SNI 4435:2017 tentang Bahan Baku Garam Konsumsi Beryodium	SNI 4435: 2017 for raw material for iodized consumption salt	SNI 4435: 2017	Salt	2017	4435	BSN	For raw material for iodized consumption salt.
99	Peraturan Menteri Perdagangan Nomor 52/M-DAG/PER/8/2017 Tahun 2017 tentang Perubahan Kedua Atas Peraturan Menteri Perdagangan Nomor 125/M-DAG/PER/12/2015 Tentang Ketentuan Impor Garam	Regulation of the Minister of Trade Number 52/M-DAG/PER/8/2017 of 2017 concerning Second Amendment to Regulation of the Minister of Trade Number 125/M-DAG/PER/12/2015 concerning Salt Import Provisions	52/M-DAG/PER/8/2017	Salt	2017	52	MOT	Replaces 125/M-DAG/PER/12/2015 and its ammendemnt 23/M-DAG/PER/3/2016;
100	Pencabutan Peraturan Menteri Dalam Negeri Bidang Pertanahan, Bidang Pemerintahan, Bidang Kepegawaian, Bidang Kesehatan*, Bidang Penanggulangan Bencana, Bidang Perpajakan, Bidang Komunikasi Dan Telekomunikasi, Bidang Pelatihan Dan Pendidikan, Bidang Usaha Mikro, Kecil Dan Menengah, Bidang Wawasan Kebangsaan, Bidang Kepamongprajaan, Bidang Perencanaan, Pembangunan Dan Tata Ruang Serta Bidang Perekonomian Tahap	Revocation Of The Regulation Of The Minister Of Home Affairs For Land, Government Field, Personnel Field, Health Field*, Disaster Management Field, Taxation Field, Field Communications And Telecommunications, Training And Education Field, Micro, Small And Medium Enterprise Field, Insight Field Nationality, Public Service Field, Planning Field, Development And Spatial Plan And Economic Stage	6/2018	Salt	2018	6	MoHA	Revoke several MoHA regulations including GAKY. Revoke 6/2010 *Article I paragraph 4 Health Sector: b. Minister of Home Affairs Regulation Number 63 of 2010 concerning Guidelines for Handling Disorders due to Iodine Deficiency in Regions (State Gazette of the Republic of Indonesia 2010 Number 675)

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101	Peraturan Pemerintah Republik Indonesia Nomor 9 Tahun 2018 Tentang Tata Cara Pengendalian Impor Perikanan Dan Komoditas Perikanan Garam Sebagai Bahan Baku Dan Bahan Pentujuan Industri	Government Regulations Of The Republic Of Indonesia Number 9 Of 2018 About Procedures For Controlling Imports Of Fishery And Fishery Commodities Salt Commodities As Raw Material And Industrial Auxiliary Materials	9/2018	Salt	2018	9	President	Regulations to control import of fishery and salt commodities
102	Menteri Kelautan Dan Perikanan Republik Indonesia Nomor 27/Permen-Kp/2018 Tentang Pelaksanaan Kerangka Kualifikasi Nasional Indonesia Bidang Produksi Garam	Minister Of Marine And Fisheries Of The Republic Of Indonesia Number 27/Permen-Kp/2018 About Implementation Of The Indonesian National Qualifications Framework Salt Production Field	27/PERMEN-KP/2018	Salt	2018	27	MOMF	
103	Peraturan Menteri Perdagangan Nomor 63 Tahun 2019 tentang Ketentuan impor Garam	Minister of Trade Regulation Number 63 of 2019 concerning Salt Import Provisions	63/2019	Salt	2019	63	MoT	Update of 125/2015 and 52/2017 on control of imports Salt Import Provisions (Amendment 125/2015 and 52/2017) = raw materials SNI is not required
104	Implementasi Kerangka Kualifikasi Nasional Pengolahan Garam Indonesia	Implementation of Indonesia National Qualification Framework for Salt Processing	44/2020	Salt	2020	44	MoI	About salt production
105	Peraturan Menteri Perdagangan Nomor 25 Tahun 2022 tentang Perubahan Atas Peraturan Menteri Perdagangan Nomor 20 Tahun 2021 Tentang Kebijakan Dan Pengaturan Impor	Regulation of the Minister of Trade Number 25 of 2022 concerning Amendments to Regulation of the Minister of Trade Number 20 of 2021 concerning Import Policies and Regulations	20/2021	Salt	2021	20	MoT	General import regulation. Specifies HS codes. Revokes 2019/63
106	Peraturan Menteri Perdagangan Nomor 20 Tahun 2022 tentang Petunjuk Teknis Persetujuan Tipe	Minister of Trade Regulation Number 20 of 2022 concerning Technical Instructions for Type Approval	25/2022	Salt	2022	25	MoT	Update of Import regulation 2021/20. Reference to salt in annex- imported salt must be industrial, quota has been discussed in coordiation meeting, NaCl must be 97%. PI and LS are allowed to import.
107	Peraturan Presiden Republik Indonesia Nomor 126 Tahun 2022 Tentang Percepatan Pembangunan Pergaraman Nasional	Regulation Of The President Of The Republic Of Indonesia Number 126 Of 2022 Concerning Acceleration Of National Salt Development	126/2022	Salt	2022	126	President	All domestic salt needs, except for the chlor alkali industry are to be met by domestic salt production by 2024. Plan does consider salt quantity, quality and absorbtion. Second strategy is to develop "geographical indication".Workplan is included. Includes requirement for BPOM to "accelerate registrion of small scale salt processors" and provide tech support to salt processors for iodized salt production.
108	SNI 3751:1995 tentang Tepung Terigu untuk Bahan Makanan	SNI 3751:1995 for Wheatflour for Consumption	SNI 3751:1995	Wheat flour	1995	3751	BSN	

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109	Keputusan Menteri Kesehatan no 632/Menkes/SK/VI/1998 tentang Fortifikasi Tepung Terigu	MOH Decree no 632/Menkes/SK/VI/1998 on Wheatflour Fortification	632/Menkes/SK/VI/1998	Wheat flour	1998	632	MOH	Fortification of all wheat flour in Indonesia.
110	SNI 3751:2000 tentang Tepung Terigu untuk Bahan Makanan	SNI 3751:2000 for Wheatflour for Consumption	SNI 3751:2000	Wheat flour	2000	3751	BSN	National standard includes fortification
111	Keputusan Menteri Perindustrian Dan Perdagangan Nomor 153/ Mpp/Kep/5/2001 ; Tanggal : 2 Mei 2001 Wajib Berlaku Standar Nasional Indonesia/ SNI Tepung Terigu Sebagai Bahan Makanan (Sni.OI.3751-2000/Rev. 1995 Dan Revisinya)	Decree Of The Minister Of Industry And Trade Number : 153/Mpp/Kep/5/2001 ; Dated : May 2, 2001 The Compulsory Application Of Indonesian National Standard/ SNI To Wheat Flour As Foodstuffs (SNI.01.3751-2000/Rev. 1995 And Its Revision)	153/MPP/KEP/5/2001	Wheat flour	2001	153	MOIT	Compulsory application of SNI 3751:2000 by 2 Nov 2001
112	Peraturan Menteri Perindustrian Nomor 323/MPP/Kep/11/2001 Tentang Perubahan Atas Keputusan Menteri Perindustrian dan Perdagangan Nomor 153/ mpp/kep/5/2001 Tentang Penerapan Secara Wajib Sni Tepung Terigu Sebagai Bahan Makanan (sni. 01-3751-2000/ rev.1995 dan Revisinya	Regulation of the Minister of Industry Number 323/ MPP/Kep/11/2001 concerning Amendments to the Decree of the Minister of Industry and Trade Number 153/mpp/ kep/5/2001 concerning the Mandatory Application of SNI for Wheat Flour as a Food Ingredient (sni. 01-3751-2000/ rev.1995 and its Revisions	323/MPP/Kep/11/2001	Wheat flour	2001	323	MOIT	Revision of 153/2001 to extend implementation by 3 months- 2 Feb 2002
113	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1	Wheat flour	2001	1	WTO	SNI notified to WTO by MoI; SNI amendement due to fortiication requirement. SNI 01-3751-2000
114	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1/Corr.1	Wheat flour	2001	1,1	WTO	Correction to reference 50ppm of iron rather than 60ppm
115	Permenperin Tentang Penunjukan Balai/lembaga Uji Sebagai Laboratorium Penguji Tepung Terigu	Minister of Industry Regulation concerning the Appointment of Testing Centers/institutions as Wheat Flour Testing Laboratories	59/MPP/Kep/11/2002	Wheat flour	2002	59	MOIT	Assign laboratory for wheat flour check
116	Surat Keputusan MOI - Menetapkan "petunjuk pelaksanaan" SNI wajib termasuk penggunaannya pada produk olahan	MOI Decision Letter- Set "implementing instructions" for mandatory SNI including use in processed products	03/DIRJEN-IKAH/SK/II/2001	Wheat flour	2002	3	MOI	MOI Decision Letter- Set "implementing instructions" for mandatory SNI including use in processed products. References 153/2001 and 323/2001
117	Prosedur impor tepung	Flour importation procedure	5672/BC.3/2002	Wheat flour	2002	5672	MOF (Customs)	Flour importation procedure
118	Keputusan Menteri Kesehatan No.962/MENKES/SK/VII/2003 tentang Fortifikasi Tepung Terigu	Decree of MoH Number 962/Menkes/SK/VII/2003 on Wheatflour Fortification	962/Menkes/SK/VII/2003	Wheat flour	2003	962	MoH	Fortification of all wheat flour traded in Indonesia, including imports. Replaced by 1452:2003. Amendment of 632/Menkes/SK/VI/1998

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119	Keputusan Menteri Kesehatan Republik Indonesia Nomor 1452/ Menkes/SK/X/2003 Tentang Fortifikasi Tepung Terigu	Minister of Health Regulation No 1452/MENKES/SK/X/2003	1452/MENKES/SK/X/2003	Wheat flour	2003	1452	MOH	Fortification standard. Replaces 962:2003. Revision to make fortification requirements in line with SNI
120	SNI 3751:2006 tentang Tepung Terigu sebagai Bahan Makanan	SNI 3751:2006 concerning Wheat Flour as a Food Ingredient	SNI 3751:2006	Wheat flour	2006	3751	BSN	Updated in 2009 and 2018
121	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1/Add.1	Wheat flour	2007	1	WTO	Amendment to 2001 notification. References 2006 SNI
122	Peraturan Menteri Perindustrian Republik Indonesia Nomor: 49/M-Ind/Per/7/2008 Tentang Pemberlakuan Standar Nasional Indonesia (SNI) Tepung Terigu Sebagai Bahan Makanan	Regulation Of The Minister Of Industry Of The Republic Of Indonesia Number: 49/M-Ind/ Per/7/2008 About Mandatory Implementation Of Indonesian National Standards (Sni) For Wheat Flour As A Food Ingredient	49/M-IND/PER/7/2008	Wheat flour	2008	49	MOI	makes SNI mandatory for packaged and bulk wheat flour. References (SNI) 01-3751-2006.
123	Peraturan Menteri Perindustrian Nomor 77/M-IND/PER/10/2008 Tahun 2008 Tentang Penunjukan Lembaga Penilaian Kesesuaian dalam Rangka Penerapan/ pemberlakuan dan Pengawasan Standar Nasional Indonesia (SNI) Tepung Terigu Sebagai Bahan Makanan (SNI 01-3751-2006) Secara Wajib	Regulation of the Minister of Industry Number 77/M-IND/ PER/10/2008 of 2008 concerning the Appointment of a Conformity Assessment Institution in the Context of Compulsory Implementation/ enforcement and Supervision of the Indonesian National Standard (SNI) for Wheat Flour as a Food Ingredient (SNI 01-3751-2006)	77/M-IND/PER/10/2008	Wheat flour	2008	77	MOI	Allocates accredited agency for enforcment of mandatory SNI- refers to 3751/2006
124	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1/Add.2	Wheat flour	2008	1,2	WTO	Addendum of implementation of mandatory standard of SNI- 01-3751-2000. Ammends G/ TBT/N/IDN/1 of 2001. Seems to be in relation to changes to SNI but does not reference new SNI number
125	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1/Add.2/Corr.1	Wheat flour	2008	1.2.1	WTO	Amendment to G/TBT/N/IDN/1/Add.2 to reference SNI 01-3751-2006:
126	SNI 3751:2009 tentang Tepung Terigu sebagai Bahan Makanan	SNI 3751:2009 concerning Wheat Flour as a Food Ingredient	SNI 3751:2009	Wheat flour	2009	3751	BSN	Referred to in 59/2015.

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127	Peraturan Menteri Perindustrian Nomor 109/M-IND/PER/10/2010 Tahun 2010 Tentang Penunjukan Lembaga Penilaian Kesesuaian dalam Rangka Pemberlakuan dan Pengawasan Standar Nasional Indonesia (SNI) Atas 58 (lima Puluh Delapan) Produk Industri Secara Wajib	Regulation of the Minister of Industry Number 109/M-IND/PER/10/2010 of 2010 concerning the Appointment of Conformity Assessment Institutions for the Mandatory Implementation and Supervision of Indonesian National Standards (SNI) on 58 (fifty-eight) Industrial Products	109/M-IND/PER/10/2010	Wheat flour	2010	109	MoI	Establishes certification body for 58 mandatory SNIs incuding MOI regulation 77/2008 for 3751/2006
128	Peraturan Menteri Perindustrian Nomor 35/M-IND/Per/3/2011 tentang Kewajiban Penerapan Standar Nasional Indonesia Tepung Terigu	Regulation of the Minister of Industry Number 35/M-IND/Per/3/2011 regarding the Mandatory Implementation of Indonesian National standard of Wheat Flour	35/M-IND/Per/3/2011	Wheat flour	2011	35	MOI	Refers to 3751/2009. On mandatory implementation of SNI
129	Peraturan Menteri Perindustrian Republik Indonesianomor : 51/M-Ind/Per/5/2011 Tentang Penunjukan Lembaga Penilaian Kesesuaian Dalam Rangka Pemberlakuan Dan Pengawasan Penerapan Standar Nasional Indonesia (SNI) Tepung Terigu Sebagai Bahan Makanan Secara Wajib	Regulation Of The Minister Of Industry Of The Republic Of Indonesian Number: 51/M-Ind/Per/5/2011 Concerning The Appointment Of a Conformity Assessment Institution In The Framework Of The Mandatory Implementation And Supervision Of The Implementation Of Indonesian National Standards (SNI) For Wheat Flour As A Food Ingredient	51/M-IND/PER/5/2011	Wheat flour	2011	51	MOI	Certification body for wheat flour SNI. Refers to 35/M-IND/PER/3/2011 and 3751: 2009
130	Peraturan Direktur Jenderal Industri Agro Nomor: 20/Ia/Per/09/2011 Tentang Pedoman Teknis Pelaksanaan Dan Pengawasan Penerapan Wajib Standar Nasional Tepung Terigu Sebagai Bahan Makanan	Regulation Director General Of Agro Industry Number:20/IA/PER/09/2011 Regarding Technical Guide For The Implementation And Supervision Of The Mandatory Application Of Indonesia National Standard Of Wheat Flour As Foodstuff	20/IA/PER/09/2011	Wheat flour	2011	20	MOI	Implementation of 2011/35
131	SNI 7868: 2013 tentang Tepung Terigu untuk Bahan Baku Pakan Ikan	SNI 7868: 2013 concerning Wheat Flour for Fish Feed Raw Materials	SNI 7868: 2013	Wheat flour	2013	7868	BSN	SNI FOR FISH FOOD

No.	Name Bahasa	Name English	NUMBER	Food	Year	No.	Issued by:	Subject
132	Peraturan Menteri Perindustrian Republik Indonesia Nomor 59/M-Ind/Per/7/2015 Tentang Pemberlakuan Standar Nasional Indonesia Tepung Terigu Sebagai Bahan Makanan Secara Wajib	The Minister Of Industry Of The Republic Of Indonesia Number 59/M-Ind/Per/7/2015 Concerning Mandatory Implementation Of Indonesian National Standards For Wheat Flour As A Food Ingredient	59/M-IND/PER/7/2015	Wheat flour	2015	59	MoI	Mandatory implementation of SNI for wheat flour as a food ingredient. Refers to SNI 3751: 2009. Comes into effect on 27 October 2015. Replaces MoI 35.2011
133	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1/Add.3	Wheat flour	2015	1,3	WTO	Regulation of Minister of Industry No. 35/M-IND/PER/3/2011 has been replaced by Regulation of Minister of Industry No. 59/M-IND/PER/7/2015 concerning Mandatory Implementation of Indonesia National Standard for Wheat Flour as Foodstuff.
134	Peraturan Menteri Perindustrian Nomor 51/M-IND/PER/5/2011 Tahun 2011 Tentang Penunjukan Lembaga Penilaian Kesesuaian dalam Rangka Pemberlakuan dan Pengawasan Penerapan Standar Nasional Indonesia (SNI) Tepung Terigu Sebagai Bahan Makanan Secara Wajib	Regulation of the Minister of Industry Number 51/M-IND/PER/5/2011 of 2011 concerning the Appointment of a Conformity Assessment Institution in the Context of Mandatory Implementation and Supervision of the Indonesian National Standard (SNI) for Wheat Flour as a Food Ingredient	51/M-IND/PER/5/2011	Wheat flour	2017		MOH	Letter GM.0404/Menkes/62/2017 recommending change of iron fortificant to ferrous fumarte, sulphae or EDTA.
135	SNI 3751:2018 tentang Tepung Terigu sebagai Bahan Makanan	SNI 3751:2018 concerning Wheat Flour as a Food Ingredient	SNI 3751:2018	Wheat flour	2018	3751	BSN	Specifies iron- ferrous fumarate, sulphate and NaFeEDTA. Update of 3751/2009
136	Surat Menteri Perindustrian No.5 Tahun 2021 tentang Relaksasi Per 7 April 2020 s/d 31 Des 2021	Letter of Minister of Industry No.5 of 2021 for relaxation from 7 April 2020 to 31 Dec 2021	5/2020	Wheat flour	2020	5	MOI	Letter of Minister of Industry No.5 of 2021 for relaxation from 7 April 2020 to 31 Dec 2021
137	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1/Add.4	Wheat flour	2020	1,4	WTO	Informs on Circular Letter No. 5 of 2020 regarding Temporary Exclusion to The Addition of Fortifying Substances to Wheat Flour
138	Peraturan Menteri Perindustrian tentang Penerapan SNI Indonesia Tepung Terigu Sebagai Bahan Makanan	Regulation of the Minister of Industry concerning application of Indonesian SNI for wheat flour as a food ingredient	1/2021	Wheat flour	2021	1	MoI	SNI 3751:2018 made mandatory. Excludes non-food flour and whole wheat flour etc. Revokes 59 / M-IND / PER / 7/2015

No.	Name Bahasa	Name English	NUMBER	Food	Year	No.	Issued by:	Subject
139	Peraturan Menteri Perindustrian Republik Indonesia Nomor 11 Tahun 2021 Tentang Lembaga Penilaian Kesesuaian Dalam Rangka Pemberlakuan Dan Pengawasan Standar Nasional Indonesia Tepung Terigu Sebagai Bahan Makanan Secara Wajib	Regulation of the Minister ofIndustry Of The Republic Of Indonesia Number 11 Of 2021 About Conformity Assessment Institution In The Framework Implementation And Supervision Of Indonesian National Standards Wheat Flour As A Mandatory Food Ingredient	'11/2021	Wheat flour	2021	11	MOI	Asigns confformity body and laboratory. Revokes 59.2015. Specifies type certification and references SNI 2018 SNI
140	Notifikasi WTO	WTO Notification	G/TBT/N/IDN/1/Add.5	Wheat flour	2021	1,5	WTO	References SNI 3751:2018

Annex 2 Large Scale Food Fortification Stakeholder Mapping

STAKEHOLDERS MAPPING FOR LANDSCAPE ANALYSIS LARGE-SCALE FOOD FORTIFICATION (July-October 2023)							
No.	Stakeholders Type	Stakeholders	Directors/ Contact Person	Position	Commodities	Roles	Notes
1	Government	BAPPENAS, Directorate of Public Health and Nutrition	Pungkas Bahjuri Ali, S.TP, MS, Ph.D	Director	General LSFF	Lead of the fortification forum (on-going process), develop policy esp RPJPN and RPJMN to prioritze the LSFF	Joined both KII and FGDs
2	Government	BAPPENAS, Directorate of Food and Agriculture	Jarot Indarto, PhD	Director	General LSFF, rice	Co-lead of the fortification forum (on-going process), develop policy for national priority on LSFF with specific focus on rice fortification on RPJPN and RPJMN; lead the rice fortification (and biofortification) programme; how the rice fortification connect with the social safety net	Joined both KII and FGDs
3	Government	BAPPENAS, Directorate of Poverty Reduction and Community Empowerment (Penanggulangan Kemiskinan dan Pemberdayaan Masyarakat)	Maliki, ST, MSIE, PhD	Director	General LSFF, rice	Coordinate the social safety net-how the rice fortification connect with the social safety net	Joined both KII and FGDs
4	Government	BAPPENAS, Directorate of Industry, Tourism, and Creative Economics (Industri, Pariwisata, dan Ekonomi Kreatif)	Wahyu Wijayanto, SIP, MA	Director	General LSFF, wheatflour, cooking oil	Coordinate the industry related issues, including the policy and regulations on the LSFF	Joined both KII and FGDs
5	Government	BAPPENAS, Directorate of Development of Micro, Small, Medium and Cooperative Enterprises (Pengembangan Usaha Mikro, Kecil, Menengah, dan Koperasi)	Dr. Ir. Ahmad Dading Gunadi, MA	Director	General LSFF, salt, cooking oil, beras	Coordinate the industry related issues, including the policy and regulations on the LSFF	Joined both KII and FGDs
6	Government	BAPPENAS, Directorate of Marine and Fisheries (Kelautan dan Perikanan)	Dr. Ir. Sri Yanti JS, MPM	Director	General LSFF, salt	Coordinate the industry related issues, including the policy and regulations on the LSFF	Did not join KII and FGDs
7	Government	Ministry of Health, Directorate of Nutrition and Maternal and Child Health	dr. Lovely Daisy, MKM	Director a.i	General LSFF	Work with BSN to develop the standar for the food fortification, especially from the nutrition aspects	Joined FGDs
8	Government	National Food Agency/ BAPANAS, Directorate of Development of Standard for Food Safety and Quality (Perumusan Standar Keamanan dan Mutu Pangan)	Yusra Egayanti, SSi, Apt, MP	Director	General LSFF, rice	The National Food Agency has several programs based on predetermined strategic goals. The fourth strategic goal is ensuring the safety and quality of fresh food.	https://badanpangan.go.id/wiki/keamanan-pangan
9	Government	National Food Agency/ BAPANAS, Directorate of Control of the Implementation of Food Safety and Quality (Pengawasan Penerapan Standar Keamanan dan Mutu Pangan)	Dr. Sri Nuryanti, STP, MP	Director	General LSFF, rice	The National Food Agency has several programs based on predetermined strategic goals. The fourth strategic goal is ensuring the safety and quality of fresh food.	https://badanpangan.go.id/wiki/keamanan-pangan

No.	Stakeholders Type	Stakeholders	Directors/ Contact Person	Position	Commodities	Roles	Notes
10	Government	Ministry of Industry, Directorate of Food, Seafood, and Fisheries Industry (Direktorat Industri Makanan, Hasil Laut, dan Perikanan)	Emil Satria	Director	General LSFF, wheatflour, oil, salt	Formulate and implement policies in strengthening industrial structure, increasing competitiveness, developing the business climate, promoting industry and industrial services, industrial standardization, industrial technology, developing strategic industries and green industries, and increasing the use of products domestically in the food industry, marine products and fisheries.	https://kemenperin.go.id/struktur/agro
11	Government	Ministry of Industry, Directorate of Upstream Chemical Industry (Industri Kimia Hulu)	Ir. Putu Nadi Astuti, ST, MSi	Director	General LSFF, salt	Formulate policies related to upstream chemical industry. The Directorat of Upstream Chemical Industry clasified the type of industry at the upstream level, including the salt industry (Industri Pengolahan Garam (KBLI 10774)).	http://ikft.kemenperin.go.id/wp-content/uploads/2021/03/Rencana-Strategis-Direktorat-Industri-Kimia-Hulu-Tahun-2020-2024.pdf
12	Government	Ministry of Industry, Head of Center for Formulation, Application and Enforcement of Industrial Standardization (Pusat Perumusan, Penerapan, dan Pemberlakuan Standardisasi Industri)	Sri Bimo Pratomo	Director	General LSFF, wheatflour, oil, salt	The Center for Industrial Standardization has the task of carrying out the formulation of technical policies, plans, programs, implementation, monitoring, evaluation and reporting of research, assessment and development of industrial standardization.	http://pustan.kemenperin.go.id/Tentang_Kami
13	Government	Ministry of Industry, Center for Standardization and Agro Industry Services (Balai Besar Standardisasi dan Pelayanan Jasa Industri Agro)		Director	General LSFF, wheatflour, oil, salt	Implementing industrial standardization, optimizing the use of industrial technology and industry 4.0, green industry, and agro-industry services.	https://bbia.go.id/profil/tugas-dan-fungsi/
14	Government	Ministry of Industry, Directorate of Small and Medium Food Industry, Wood Products and Furniture (Industri Kecil dan Menengah Pangan, Barang dari Kayu dan Furnitur)		Director	General LSFF, wheatflour, oil, salt	The Directorate of Small and Medium Industries for Food, Wood Products and Furniture has the task of carrying out the formulation and implementation of the national industrial development master plan, national industrial policies, distribution and equity of industry, development of industrial resources, construction of industrial facilities and infrastructure, industrial empowerment, industrial licensing , growing entrepreneurs, implementing industrial facilitation, industrial promotion and industrial services, as well as industrial development technical policies in the small and medium-sized industries of food, wood goods, and furniture.	http://ikm.kemenperin.go.id/about-us/organisational-structure/direktorat-industri-kecil-dan-menengah-pangan-barang-dari-kayu-dan-furnitur/
15	Government	Ministry of Trade, Directorate of Standardization and Quality Control (Direktorat Standardisasi dan Pengendalian Mutu)	Matheus Hendro Purnomo, ST, MSE	Director	General LSFF, wheatflour, oil, salt	Develop and implement policies in standardization of trade services, guidance and quality facilities, quality verification and registration of security, safety, health and environmental goods as well as standardization institutions	https://www.kemendag.go.id/tentang/tugas-fungsi

No.	Stakeholders Type	Stakeholders	Directors/ Contact Person	Position	Commodities	Roles	Notes
16	Government	Ministry of Trade, Directorate of Import	Arif Sulistiyo, S.Kom, M.Kom	Director	Wheatflour	Develop and implement policies in controlling and managing imports of capital goods, agricultural, forestry, marine and fishery goods, various industrial goods and industrial raw materials, consumer goods, as well as chemical, mining and waste goods	https://www.kemendag.go.id/tentang/tugas-fungsi
17	Government	National Food and Drug Control Agency/ BPOM, Directorate of Standardization of Processed Food	Dra. Deksa Presiana, Apt, M.Kes	Director	General LSFF	Develop the standard for the processed foods, including the preparation of norms, standards, procedures, criteria, the implementation of technical guidance and supervision, as well as monitoring, evaluation, and reporting in the field of processed food standardization.	Main Tasks and Functions- Directorate of Standardization of Processed Food (pom.go.id)
18	Government	National Food and Drug Control Agency/ BPOM, Directorate of Control of Processed Foods Production (Pengawasan Produksi Pangan Olahan)	Sondang Widya Estikasari, SSi, APT, MKM	Director	General LSFF	Policy formulation on the processed foods production and its implementation	Direktorat Pengawasan Produksi Pangan Olahan - TUGAS POKOK DAN FUNGSI (pom.go.id)
19	Government	National Standardization Agency/ BSN, Directorate of the Development on Agro, Chemical, Health, and Halal Standard (Pengembangan Standar Agro, Kimia, Kesehatan, dan Halal)	Heru Suseno, SPi, MT	Director	General LSFF, wheatflour, oil	Develop the standard of the mandatory food fortification (SNI)	https://bsn.go.id/main/berita/detail/11517/tentang-bsn
20	Government	National Standardization Agency/ BSN, Directorate of the Standard Application System and Conformity Assessment (Sistem Penerapan Standard dan Penilaian Kesesuaian)	Konny Sagala, Ssi	Director	General LSFF, wheatflour, oil	Develop standard Application System and conformity assessment of its standard	https://bsn.go.id/main/berita/detail/11517/tentang-bsn
21	Government	Ministry of Marine Affairs and Fisheries, Directorate of Marine Services (Jasa Kelautan)	Dr. Miftahul Huda, Msi	Director	Salt	Develop the policy related to salt–and salt industry/ farmers	Did not join KII and FGDs
22	Government	Ministry of Social Affairs, Directorate of Social Security (Jaminan Sosial)	Staff	Staff	Rice	Develop policy on the rice fortification for the social safety net	Joined FGDs
23	Government	Ministry of Social Affairs, Directorate of Vulnerable Group Empowerment (Pemberdayaan Kelompok Rentan)	Staff	Staff	Rice	Develop policy on the rice fortification for the social safety net	Joined FGDs
24	Government	Ministry of Agriculture, Directorare of Processing and Marketing of Food Crops (Pengolahan dan Pemasaran Hasil Tanaman Pangan)	Gatut Sumbogodjati	Director	Rice	Develop the policies and standard on post-harvest improvement, processing and marketing of food crop products. Ministry of Agriculture focus on the rice biofortification only–for the rice fortification, will be handled by the National Food Agency/ Bapanas	https://tanamanpangan.pertanian.go.id/detil-konten/struktur_organisasi/78#:~:text=Berdasarkan%20Permentan%20Nomor%20%3A%2040%20tahun%202020%20Tentang,6.%20Direktorat%20Pengolahan%20dan%20Pemasaran%20Hasil%20Tanaman%20Pangan
25	Government	Ministry of Finance, Directorate of Customs (Teknis Kepabeanan), Subdirectorate Import	-	-	Wheatflour	Policies related to the imported premix for wheatflour	Did not join KII and FGDs

No.	Stakeholders Type	Stakeholders	Directors/ Contact Person	Position	Commodities	Roles	Notes
26	Industry	Asosiasi Produsen Tepung Terigu Indonesia (APTINDO)/ Indonesia Wheatflour Producer Association	Fransiscus Welirang	Chairman	Wheatflour	Implementation	Joined both KII and FGDs
27	Industry	Gabungan Industri Minyak Nabati Indonesia (GIMNI/ Indonesia Vegetable Oil Association)	Sahat Sinaga	Chairman	Cooking oil	Implementation	Joined KII
28	Industry	Asosiasi Produsen Garam Konsumsi Beryodium (APROGAKOB)/ Indonesia Iodized Salt Producer Association	-	-	Salt	Implementation	Did not join KII and FGDs
29	Industry	Gabungan Produsen Makanan Minuman Indonesia (GAPPMI/ Food Beverage Producers Association)	Adhi Lukman	Chairman	LSFF	Implementation	Joined both KII and FGDs
30	Industry	Perkumpulan Penggilingan Padi dan Pengusaha Beras Indonesia (Perpadi/ Rice Miller Association)	Sutarto Alimoeso	Chairman	Rice	Implementation	Joined KII
31	Development partners	KFI	Nina Sardjunani	Director	LSFF	Evidence based; capacity building for the LSFF related programme	Joined both KII and FGDs
32	Development partners	Nutrition International	Rozy Jafar	Deputy Country Director	Salt, wheathflour	Evidence based; capacity building for the LSFF related programme	Joined both KII and FGDs
33	Development partners	World Bank	Elvina Karjadi	Senior Health Advisor	Rice	Evidence based; capacity building for the LSFF related programme	Joined both KII and FGDs
34	Development partners	WFP	Melania Gondomartojo	Head of Nutrition Unit	Rice	Evidence based; capacity building for the LSFF related programme	Joined both KII and FGDs
35	Development partners	GAIN	Agnes Malipu		Rice	Evidence based; capacity building for the LSFF related programme	Joined FGDs
36	Academia	IPB University	Prof. Drajat Martianto	Expert	LSFF	Evidence based	Joined both KII and FGDs
37	Academia	Gadjahmada University		Expert	Rice	Evidence based	Joined FGD

Annex 3 Contributors to the Landscape Analysis (list of people interviewed and who participated in focus group discussions)

List of Stakeholders for KIIs and FGDs on Landscape Analysis LSFF			
Key Informant Interviews (KIIs) - Conducted on August - October 2023			
No	**Stakeholders**	**Name**	**Title**
1	BAPPENAS, Directorate of Public Health and Nutrition	Pungkas Bahjuri Ali, S.TP, MS, Ph.D	Director
2	BAPPENAS, Directorate of Food and Agriculture	Bapak Ifan Martino	Planner
3	BAPPENAS, Directorate of Poverty Reduction and Community Empowerment	Bapak Gennady Pati	Planner
4	BAPPENAS, Directorate of Development of Micro, Small, Medium and Cooperative Enterprises	Dr. Ir. Ahmad Dading Gunadi, MA	Director
5	National Food Agency/ BAPANAS, Directorate of Development of Standard for Food Safety and Quality	Yusra Egayanti, SSi, Apt, MP	Director
6	National Food Agency/ BAPANAS, Directorate of Control of the Implementation of Food Safety and Quality	Dr. Sri Nuryanti, STP, MP	Director
7	Ministry of Industry, Directorate of Upstream Chemical Industry	Ir. Putu Nadi Astuti, ST, Msi	Director
8	Ministry of Industry, Directorate of Food, Seafood, and Fisheries Industry	Ibu Ria Andriani	Staff
9	Ministry of Trade, Directorate General of Domestic Trade	Drs. Isy Karim, Msi	Director General
10	Ministry of Trade, Directorate of Import	Bapak Thariq dan Ibu Lea Lehelia	Staff
11	Coordinating Ministry for Maritime and Investment/ Kemenkomarves, Assistant Deputy for Downstream Maritime Resources	Bapak Amalyos Chan	Assistant Deputy
12	Asosiasi Produsen Tepung Terigu Indonesia (APTINDO)/ Indonesia Wheatflour Producer Association	Ibu Herni and Bapak Josafat Siregar	Member
13	Asosiasi Produsen Tepung Terigu Indonesia (APTINDO)/ Indonesia Wheatflour Producer Association	Bapak Budianto Wijaya	Member
14	Gabungan Industri Minyak Nabati Indonesia (GIMNI/ Indonesia Vegetable Oil Association)	Bapak Sahat Sinaga	Chairman
15	Nutrition International	Bapak Rozy Jafar	Deputy Country Director
16	World Bank	Ibu Elvina Karjadi, Ibu Cut Rachmi	Senior Health Advisor, Nutrition Specialist
17	World Food Programme (WFP)	Ibu Melania Gondomartojo	Head of Nutrition Unit
18	Koalisi Fortifikasi Indonesia (KFI/ Indonesia Fortification Coalition)	Ibu Nina Sardjunani, Prof. Drajat Martianto	Director, Advisor
19	Gabungan Produsen Makanan Minuman Indonesia (GAPPMI/ Food Beverage Producers Association)	Bapak Adhi Lukman	Chairman
20	Perkumpulan Penggilingan Padi dan Pengusaha Beras Indonesia (Perpadi/ Rice Miller Association)	Bapak Sutarto Alimoeso	Chairman
Focus Group Discussions (FGDs) - Conducted on September 2023			
No	**Stakeholders**	**Name**	**Title**
1	BAPPENAS, Directorate of Public Health and Nutrition	Akim Dharmawan	Staff
2	BAPPENAS, Directorate of Public Health and Nutrition	Nurul Tarmizi	Staff
3	BAPPENAS, Directorate of Food and Agriculture	Ersyida Ulya	Staff
4	BAPPENAS, Directorate of Development of Micro, Small, Medium and Cooperative Enterprises	Ghefiran Abdurrahmidzan	Staff
5	BAPPENAS, Directorate of Marine and Fisheries	Luthfi Ramadhan	Staff
6	Ministry of Health, Directorate of Nutrition and Maternal and Child Health	Muhammad Adil, SP, MPH	Staff

Focus Group Discussions (FGDs) - Conducted on September 2023			
7	National Food Agency/ BAPANAS, Directorate of Development of Standard for Food Safety and Quality	Sylvia Puspa Harjanti	Staff
8	National Food Agency/ BAPANAS, Directorate of Development of Standard for Food Safety and Quality	Naili Lutfi Nugrahani	Staff
9	National Food Agency/ BAPANAS, Directorate of Control of the Implementation of Food Safety and Quality	Fitria Pusposari	Staff
10	National Food Agency/ BAPANAS, Directorate of Food Diversification	Maya Safrina Suraningsih	Staff
11	Ministry of Industry, Directorate of Food, Seafood, and Fisheries Industry	Andriani Z	Staff
12	National Food and Drug Control Agency/ BPOM, Directorate of Standardization of Processed Food	Sondang Widya	Director
13	National Food and Drug Control Agency/ BPOM, Directorate of Standardization of Processed Food	Irma Septiani	Staff
14	National Food and Drug Control Agency/ BPOM, Directorate of Standardization of Processed Food	Nur Lisa Rahmaningtyas	Staff
15	National Food and Drug Control Agency/ BPOM, Directorate of Standardization of Processed Food	Lasrida Yuniaty	Staff
16	National Food and Drug Control Agency/ BPOM, Directorate of Standardization of Processed Food	Ida Farida	Staff
17	National Food and Drug Control Agency/ BPOM, Directorate of Standardization of Processed Food	Pratiwi Yuniarti	Staff
18	National Food and Drug Control Agency/ BPOM, Directorate of Control of Processed Foods Production	Dipicha Triesnaputri Kusuma Wardhani	Staff
19	National Food and Drug Control Agency/ BPOM, Directorate of Control of Processed Foods Production	Hanny Srimulyani Dulimarta	Food and Drug Inspector
20	National Food and Drug Control Agency/ BPOM, Directorate of Control of Processed Foods Distribution	Hilman Naafi Achmad	Food Inspector
21	National Food and Drug Control Agency/ BPOM, Directorate of Control of Processed Foods Distribution	Cendekia	Staff
22	National Food and Drug Control Agency/ BPOM, Directorate of Registration of Processed Foods	Yeni Oktaviany	Staff
23	National Standardization Agency/ BSN, Directorate of the Development on Agro, Chemical, Health, and Halal Standard	Ibu Bety	Staff
24	National Standardization Agency/ BSN, Directorate of the Standard Application System and Conformity Assessment	Ahmad Khairuddin	Analyst
25	National Standardization Agency/ BSN, Directorate of the Standard Application System and Conformity Assessment	Aya Sofa Novia Wahyudin	Staff
26	National Standardization Agency/ BSN, Directorate of the Standard Application System and Conformity Assessment	Yudha Septi Prasaja	Standardization Analyst
Focus Group Discussions (FGDs) - Conducted on September 2023			
27	National Standardization Agency/ BSN, Directorate of the Standard Application System and Conformity Assessment	Anthony Achmad Fathony	Standardization Analyst
28	National Standardization Agency/ BSN, Directorate of the Standard Application System and Conformity Assessment	Theista Savanty	Standardization Analyst
29	Ministry of Social Affairs, Directorate of Social Security	Diandini	Staff
30	Ministry of Social Affairs, Directorate of Vulnerable Group Empowerment	Ani Susanti	Staff
31	National Research and Innovation Agency/ BRIN, Agroindustry Research Unit	Mulyana Hadipernata, STP, MSc, PhD	Head of Research Center for Agroindustry
32	National Research and Innovation Agency/ BRIN, Agroindustry Research Unit	Lukman Junaidi	Staff
33	National Logistics Bureau/ BULOG, Strategy, Research, and Risk Management Unit	Dandy Arianto	Staff
34	Gadjah Mada University (UGM)	Prof. Irham	Expert

Focus Group Discussions (FGDs) - Conducted on September 2023			
35	World Bank	Elvina Karjadi	Senior Nutritionist
36	World Bank	Elviyanti Martini	Senior Consultant
37	Nutrition International (NI)	Rozy Afrial Jafar	Deputy Country Director
38	Nutrition International (NI)	Andis Septriono	NI Extender- Central Java
39	Nutrition International (NI)	Nurkhayati Darunifah	NI Extender- Central Java
40	Nutrition International (NI)	Novan Nandiwilastio	Staff
41	Nutrition International (NI)	M Baidlowi	NI Extender- East Java
42	World Food Programme (WFP)	Melania Gondomartojo	Head of Nutrition Unit
43	World Food Programme (WFP)	Evelyn Djuwidja	Rice Fortification Officer
44	Koalisi Fortifikasi Indonesia (KFI/ Indonesia Fortification Coalition)	Ibu Nina Sardjunani	Director
45	Koalisi Fortifikasi Indonesia (KFI/ Indonesia Fortification Coalition)	Prof. Dr. Drajat Martianto	Expert
46	Koalisi Fortifikasi Indonesia (KFI/ Indonesia Fortification Coalition)	Prof. Dr. Abdul Razak Thaha	Expert
47	Koalisi Fortifikasi Indonesia (KFI/ Indonesia Fortification Coalition)	Ning Pribadi	Expert
48	Koalisi Fortifikasi Indonesia (KFI/ Indonesia Fortification Coalition)	Atmarita	Expert
49	Koalisi Fortifikasi Indonesia (KFI/ Indonesia Fortification Coalition)	Tetty Sihombing	Expert
50		Sunarno Widjojo	Expert
51	Koalisi Fortifikasi Indonesia (KFI/ Indonesia Fortification Coalition)	Hanifah Hana Pertiwi	Staff
52	ICONs FKM Universitas Hasanuddin	Djunaidi M Dachlan	
53	Global Alliance for Improved Nutrition (GAIN)	Ardhiani Dyah Priamsari	Staff

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