Leading global action to eliminate brain damage due to iodine deficiency

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Werner Schultink
Executive Director, IGN

The future of iodine nutrition: Simple, sustainable, cost-effective solutions

I reflected last year on the fact that while global efforts to improve iodine nutrition have been very successful, almost 1 billion people still don’t have access to iodized salt, and in some countries, we see previous achievements sliding back.

There are many reasons for this. Some people live in remote rural areas which have little market access to iodized salt. Others may live in places where salt iodization is not mandatory, which means they have choices to purchase non-iodized salt and don’t know about the importance of iodine nutrition, particularly before and during pregnancy, for the baby’s brain development.

We also know that lifestyle choices are affecting people’s dietary habits. People cook less at home, which can affect iodine intake from iodized salt. The shift to plant-based alternatives to dairy and vegan diets also have implications for iodine status, as dairy foods and processed meats are often key sources of iodine in a population.

With little government or public attention on the problem of iodine deficiency, and lack of resources to conduct population iodine status surveys or to evaluate whether programs are effective, we wanted to find ways of getting this information easily and economically. If countries can get this data at a low cost and low effort, then programs are easier to maintain and correct, and would be more sustainable.

In an interview with USAID’s Omar Dary for this report, he highlights how a 3-year partnership between UNICEF and IGN, supported by USAID, is working to identify what is needed to successfully sustain salt iodization in countries around the world, especially in today’s changing context. He points to the need to reduce the complexity of programs.
UNICEF and the Bill & Melinda Gates Foundation are supporting IGN’s work in this crucial area of data for sustainable and effective program management. One such approach is built on a sentinel surveillance system, originating from the Fortimas flour fortification monitoring method. This approach assesses iodine status and household use of iodized salt in a targeted manner using existing systems and data infrastructure. The approach allows for less expensive and less complex monitoring and identification of potential deficiencies and to fill gaps in missing data. The system can also be used to assess and monitor trends in household iodized salt coverage and iodine status in targeted geographical areas. You can read about its use in the Data and Eastern Europe and Western Asia sections of this report.

A second approach is to provide program managers with an easy-to-use tool that assesses performance and sustainability of Universal Salt Iodization (USI) and Iodine Deficiency Disorders (IDD) prevention programs. The tool is a questionnaire through which the quality of a national salt iodization program is systematically assessed. The questionnaire focusses on five domains: legislation, program management, salt supply, advocacy & awareness, coverage & impact. You can read more about its use in the South America section of our report.

These tools would allow governments to understand both the problem and the situation at significantly less cost than conducting a national survey, and to monitor the success of programs with a brief yearly check-in rather than an extensive review.

Use of these tools makes IGN’s work, national salt iodization activities, and assessing population iodine status, more cost-effective. That in turn allows us to do more with the resources of the many donors who support us through organizations such as Founder’s Pledge and The Life You Can Save.

We hope you’ll enjoy reading about our activities.
Facts about iodine deficiency

The human body needs constant, small amounts of iodine in the diet for metabolism and brain development. Normal diets in most countries do not contain enough iodine.

The health of all population groups can be affected by iodine deficiency, especially pregnant women and children.

Adding tiny amounts of iodine to salt for human and animal consumption can address the problem. It is simple and very inexpensive – just US$0.05 a year for a lifetime of protection – and has been carried out in most countries around the world for the past three decades.

Insufficient intake results in iodine deficiency, the world’s largest cause of preventable mental impairment, and it’s a problem in both rich and poor countries.

Insufficient iodine intake during pregnancy can lead to lasting brain damage that reduces a child’s IQ by 8 to 10 points and up to 13.5 points in case of severe deficiency, with marked impact on children’s learning ability and school performance.

But over years, less attention has been paid to the problem, and in some countries, progress is being eroded, endangering the brain development of children and impacting their ability to contribute to the social and economic prosperity of their countries and communities.
Our work
Global iodine status

IGN compiles data on urinary iodine concentration (UIC) from nationally representative epidemiological studies and uses this information to report the current iodine status in countries worldwide. The IGN Scorecard presents median UIC for the most recent study conducted in school-age children over the last 15 years for 194 WHO Member States. If no survey has been conducted in children, results from studies conducted in adults or women of reproductive age are used instead.

Global iodine status is summarized yearly and iodine intake in countries is classified as sufficient, deficient, or excessive based on the median UIC.

Over the time frame 2008-2023, nationally representative cross-sectional UIC studies were conducted in 124 out of 194 countries. Studies that are representative for a state or region(s) (subnational data) have been used for 14 countries in the absence of national studies.

Since the global review in 2022, new data for nationally representative studies have become available from five countries. Study results in Croatia and Switzerland confirm adequate iodine status in children. In Sri Lanka, the iodine status deteriorated. Median UIC in 5-9-years-old children was just above the threshold defining adequacy, and data in other population groups indicates inadequate iodine intakes.

In Tajikistan, median UIC in women of reproductive age indicate adequate iodine status, but data in preschool children suggests iodine deficiency. In Lithuania, national data has long been outstanding, and the new study conducted in adults suggest intakes are inadequate based on the median UIC just below the recommended threshold.

Studies for six countries were conducted in 2007 and are no longer being counted, as data more than 15-years-old is too outdated to include in global statistics (Democratic Republic of the Congo, Equatorial Guinea, France, Gabon, Serbia, Sweden). Overall, data is lacking for 30% of all countries (56 countries) and national studies assessing iodine status are needed.

Current global iodine status in school-age children

Out of 138 countries worldwide with UIC data, iodine status is adequate in 108 countries, while 20 countries are classified as iodine deficient (Figure 1). There are still gaps in the salt iodization program in some countries and it is possible that certain segments of the population may not meet dietary iodine requirements. Iodine deficiency remains in all regions worldwide and affects populations at all stages of economic development.
Estimated iodine nutrition in 194 WHO Member States in 2024 based on national median UIC in school-age children obtained from epidemiological studies conducted between 2008–2023.

- a) Median UIC <100 µg/L
- b) Median UIC 100–299 µg/L
- c) Median UIC ≥300 µg/L
- d) Number of countries. UIC, Urinary iodine concentration
Regions
South America

An evaluation concluded that Bolivia produced sufficient iodized salt to cover the needs of its population. However, there are variations in quality, and IGN is continuing to address this through technical support to producers.

In northern Argentina, technical and communications support in Salta and Jujui provinces has enhanced both motivations and actions of local salt producers, with resulting improvement in quality of iodized salt for about 10 million inhabitants of this region. The focus is now on encouraging the government to maintain external monitoring.

Technical assistance in Cusco, Peru aimed at training provincial health personnel along with provision of information materials developed for use at primary health care facilities. The regional government in Cusco has now re-initiated the qualitative monitoring of salt at retail level, and Peru’s Ministry of Health included the newly developed iodine nutrition messages in national health promotion activities. IGN’s Regional Coordinator also worked with Chile’s Ministry of Health to obtain national nutrition survey data from 2017 for inclusion in WHO’s Vitamin and Mineral Nutrition Information System (VNMIS) database which is maintained in collaboration with IGN. The data also noted a slight reduction in salt consumption compared to 2010.


a) Median UIC <100 µg/L; b) Median UIC 100-299 µg/L; c) Median UIC ≥300 µg/L; d) Number of countries. UIC, Urinary iodine concentration W: World

Iodine intake across South America in 2021

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**Highlighted activity: Using an IGN tool to evaluate iodine nutrition programs in South American countries**

A tool that is being developed by IGN to assess the performance and sustainability of iodine nutrition programs, with support from UNICEF and the Bill & Melinda Gates Foundation, was used to shed some light on the health of iodine nutrition programs across South America.

The tool is a questionnaire through which the quality of a national salt iodization program is systematically assessed. The questionnaire focuses on five domains: legislation, program management, salt supply, advocacy & awareness, coverage & impact. The tool is intended for program managers, and its yearly use will give them insight into program performance, and to identify and address weaknesses or bottlenecks.

During 2022 and 2023, secondary data from 12 countries was analyzed to assess the performance of USI and IDD prevention programs and to estimate the level of iodine intake. At the time, the tool took the form of a Program Evaluation Worksheet, which is currently being developed into an interactive tool that will analyze the information filled in by program managers.

The review found that based on available data, coverage of iodized salt in each country is mostly universal with percentages of at least 86% of households, except for Suriname, Guyana, and Venezuela, where target populations would benefit from efforts to increase household coverage with adequately iodized salt and periodic evaluation.

It identified some important gaps in information – for example, data on households consuming iodized salt has not been updated since at least 2014 in 8 of the 12 analyzed countries. Presence of iodized salt in households was monitored qualitatively only, which does not give information about the levels of iodization. The study recommended that countries ensure adequate quantitative monitoring in laboratories with adequate supplies, not only in government centers but in decentralized locations.

Salt production is progressively consolidating into larger enterprises in Peru and Bolivia, providing iodized salt to about 20 million people. Needs for technical assistance were identified to maintain ongoing interventions and are being supported by IGN as a result. Supporting small producers from northwest Argentina, Salta and Jujuy, who provide iodized salt to other 6 provinces, would benefit a further 10 million inhabitants, about 20% of the Argentinian population. Here, although the amount of non-iodized salt is decreasing, improvement of fortification quality is slower compared to elsewhere in the region.
Strategies and resources for sustained USI/IDD monitoring exist in virtually all South American countries, although their implementation largely depends on improving awareness of the importance of such actions. The regional team believes that it is paramount to advocate and train program managers, academia, health care providers, and communicators to facilitate informed decisions and continued efforts to monitor iodine nutrition.

Overall, IGN’s regional coordination team in South America found that the use of the worksheet helped organize, highlight, and analyze relevant information, identify information gaps, monitor surveillance, and promote uniformity, allowing comparative analysis. They believe the tool facilitates dialogue with local and central governments, and that the information they gathered and analyzed can be used as a baseline to set future goals.
West Africa

In Ivory Coast, IGN worked closely with the government and UNICEF to develop the 2024-2025 national salt iodization action plan which focuses on improving governance and creating an enabling environment for the trade, sale and consumption of quality iodized salt.

In the Democratic Republic of Congo (DRC), IGN and UNICEF contributed to training 275 young U-reporters, who disseminated crucial information on the importance of iodized salt to over 4,500 individuals, including key stakeholders like importers, wholesalers, retailers, and control officers. IGN also provided technical input to the revision of the regional standard for salt for human consumption, led by the Economic Community of West African States (ECOWAS), aiming to enhance the trade and promotion of quality iodized salt across the region.

Highlighted activity: Using the salt trade in Ivory Coast to improve iodine nutrition

Studies were led by IGN in 2021 and 2022 on the trade dynamics of iodized salt in West and Central Africa, as well as on universal salt iodization (USI) programs, and the contribution of iodine consumed from processed foods. A workshop was organized by UNICEF and IGN in Dakar, Senegal, in 2022, to discuss the findings and agree on regionally coordinated actions to improve trade and supply of iodized salt among countries in West and Central Africa, including Senegal, Ghana, and Ivory Coast.

A robust set of possible actions was identified, aimed at streamlining trade procedures, fostering regional collaboration, and leveraging partnerships to improve quality control and monitoring mechanisms to ensure enhanced availability of high-quality iodized salt. Key among these initiatives is the exploration of mechanisms to fast-track trade services and the establishment of a repository of trusted importers and producers.

A government-led follow-up meeting in Abidjan in December 2023 among national stakeholders, with IGN support, aimed to create a national plan of action based on the regional trade analysis meeting as well as on results of a series of studies recently done in Ivory Coast: a landscape analysis, a review on the trade of iodized salt and an assessment of the contribution of iodine from processed foods produced with iodized salt. The meeting resulted in a time-bound and budgeted plan, focussed on strengthening fortification regulation, implementation and monitoring, as well as salt trader, importer, and consumer awareness raising, and on trade facilitation through setting up of a repository of trusted traders and importers.

UNICEF’s U-report initiative is a messaging tool for young people around the world to engage with and speak out on issues that matters to them, responding to polls and reporting issues. Data and insights are shared back with communities and policymakers. U-Report is active in 68 countries, benefiting over 11 million users. U-report is available through messaging, social media and SMS channels, and works on the most basic mobile phone. It is free, anonymous and easy to use.

The Democratic Republic of the Congo (DRC) has made remarkable efforts to tackle iodine deficiency through the implementation of a salt iodization program that has achieved national coverage of household iodized salt use of more than 90%. However, in recent years, awareness of the importance of salt iodization has waned among all stakeholders, and DRC’s government is taking action to address the problem.

A situational analysis conducted by DRC’s National Nutrition Program, UNICEF, and IGN, led to the creation of a new action plan, an important element of which is to mobilize stakeholders, both institutionally and within communities.

Working with UNICEF and IGN, the government chose 275 dynamic and leadership-oriented young people throughout the country, 48 from Kinshasa, and 227 from the other 25 provinces in the country, to:

- Raise public and political awareness of the importance of iodine nutrition.
- Gather information from salt retailers and wholesalers to better understand the salt distribution system.
- Become agents of change by raising awareness of the importance of iodine nutrition in their communities.

This approach differs from traditional awareness raising campaigns. It ensures that the message is shared among their communities and networks using mobile technology, fostering acceptance of advice and encouraging ownership of the issue by young people.

In the pilot phase in Kinshasa in September 2023 48 young people were trained and deployed across Kinshasa for two days. From October to November 2023, the campaign reached 4,571 individuals, including 60 importers, 787 wholesalers, 3,688 retailers, and 36 control officers throughout the DRC in just 10 days. Additionally, 2,579 individuals were made aware of the issue during the national day against IDD on 27th October 2023.
Eastern and Southern Africa

The success of the Regional Coordination Mechanism (RCM), since it was proposed by IGN and UNICEF five years ago to enhance coordination and communication around salt iodization among partners across the region, has led to a decision to broaden its work to all fortification efforts.

Two workshops in Johannesburg, South Africa set out the framework and terms of reference for the broadened RCM with participation of stakeholders including the Food and Agriculture Organization (FAO), the Food Fortification Initiative (FFI), the Global Alliance for Improved Nutrition (GAIN), the Intergovernmental Authority on Development (IGAD), IGN, UNICEF, Nutrition International (NI) and TechnoServe. IGN is working as a catalyst towards the actual initiation of this extended RCM in 2024.

Other activities in 2023 included provision of strategic support to countries, including conducting landscape analysis in Botswana, implementing feasibility studies on cooperatives for small salt producers in Mozambique, initiating the testing of a sentinel site surveillance tool in Tanzania, and facilitating the development and validation of national strategies and regulation for addressing iodine deficiency and food fortification in South Sudan.
Highlighted activity: Strengthening food fortification systems in Eastern and Southern Africa

Five years ago, IGN and UNICEF brought together stakeholders from 25 countries to form the RCM to review and support programs addressing iodine deficiency disorders (IDD) in Eastern and Southern Africa (ESAR), targeting actions to address the problem of iodine deficiency in ways that might not have been possible without such coordination. Its work has led to results across the region:

- In Madagascar, collaborative efforts between IGN, UNICEF, and local government, funded by USAID, have led to improved coverage of household iodized salt, and plans are under way to update national assessment and strengthen sustainable monitoring.

- In Botswana, a national landscape analysis spearheaded by the RCM has resulted in the development of an improved and integrated national micronutrient strategy, incorporating iodine and salt iodization. Similarly, Mozambique has benefited from a focused analysis aimed at enhancing iodized salt production by small-scale producers, with plans underway for a cooperative approach to be presented to potential donors.

- Tanzania has assessed the role of processed foods in iodine nutrition and begun the implementation of a sentinel surveillance system designed by IGN. In South Sudan, a new national policy on salt iodization is under discussion, based on an initial proposal by IGN. Kenya has also assessed the role of processed foods in iodine nutrition.

- Angola’s national program development, guided by the RCM, led to the establishment of a sustainably financed revolving fund for the purchase of potassium iodate (KIO3) premix. This initiative represents a significant milestone in the region’s efforts towards sustainable salt iodization.

- Burundi has conducted a comprehensive national IDD survey, including sources of iodized salt. This led to the development of a national IDD program and a collaboration with Uvinza Salt Works in Tanzania to ensure consistent iodization of exported salt. Mozambique’s engagement with the RCM and IGN led to development of a national food fortification strategy. Namibia’s adoption of the Southern African Development Community (SADC) salt iodization standards underscores the region’s commitment to harmonizing food fortification standards and ensuring consistency in interventions.

Initially focused solely on salt iodization, the RCM has evolved to encompass overall food fortification strategies across 25 countries in the region. A recent review of its work showed significant success, attributing this achievement to its management under a public health mechanism and its structure providing a framework for concerted action. These milestones across the region have shown the RCM has played a pivotal role in addressing the problem of iodine deficiency, and it is hoped this will now be repeated across the region’s food fortification activities. By fostering collaboration, providing technical expertise, and facilitating policy development, the RCM continues to drive progress towards sustainable elimination of IDD and improved nutrition outcomes in the region.

At time of writing, IGN is involved in preparations for the July 2024 Regional Consultation on Food Fortification and Universal Salt Iodization that will be hosted by Kenya’s Ministry of Health in Mombasa.
Eastern Europe and Central Asia

Four regional Russian-language iodine blogs were disseminated to specialists in the region, covering topics such as iodized salt in school meals and challenges in iodine supplementation.

IGN facilitated modeling studies in Russia and Tajikistan to assess iodized salt usage in preschools and schools as well as the iodine contribution from processed foods. The modeling in Tajikistan shed light on the need for further research to understand dietary iodine sources beyond salt. IGN also supported Moldova in implementing new iodized salt regulations and supported a small-scale survey to assess availability of iodized salt in northern regions after shifting supply from the now-defunct Ukraine salt mine to producers from Romania and Turkey. A workshop reviewed gaps in the chain of regulatory monitoring, and capacity-building activities with food inspectors and baking industry specialists is planned for early 2024 to implement regulations on mandatory use of iodized salt and reduction of salt content in bakery products. In collaboration with WHO, IGN assisted Georgia in development of salt reduction strategies aligned with existing salt iodization and ensuring that iodine intake remains adequate as salt consumption decreases.

Highlighted activity: Use of the low-cost FORTIMAS methodology to track Armenia’s USI program

Since the inception of global efforts in the early 1990s to promote and support public, private and civil society efforts toward national salt iodization programs and adequate iodine nutrition around the world, countries have primarily relied on relatively costly donor supported population-based nutrition/health status surveys to assess coverage of iodized salt and iodine status among their populations. Although the World Health Organization (WHO) recommends that such nationally representative surveys be conducted about every five years, in most countries, data on rates of coverage of adequately iodized salt and population iodine status are more than 10-years-old. Furthermore, very few countries have been able to support statistically representative surveys at sub-national level.

Following the adoption of a government decree in the Republic of Armenia in 2004 requiring iodization of all edible salt, national surveys showed good program performance, with 99% household coverage of iodized salt in 2005 and 2016, and good iodine status among school age children in 2016 (median urinary iodine concentration of 240 µg/L). To help assess the current status of the country’s salt iodization program, and the feasibility and utility of the FORTIMAS methodology, adapted for monitoring and surveillance of salt iodization programs, IGN supported its pilot implementation in Armenia in 2023.
Per the FORTIMAS approach, the current context of Armenia’s salt iodization program was first assessed based on secondary analysis of already available multi-year data on complementary indicators from different domestic sources:

- Annual quantities of iodized salt produced – from the sole industrial-scale domestic producer.
- Annual quantities of iodized salt imported – from the National Ministry of Economy (MOE).
- Annual proportions of salt samples (from retail outlets, food catering businesses, processed food producers, and border points) found to meet the national iodization standard – from National Food Safety Inspection Body (FSIB).
- Annual trends in levels of thyroid stimulating hormone (TSH) among newborns – from the (national) Neonatal Hypothyroidism Screening Program.

Based on iodized salt availability data, seven districts across five regions of Armenia, including Yerevan, the capital and most populous region, were purposively chosen as sentinel sites. Data was collected from these sites on household coverage of adequately iodized salt (through selected schools), and median urinary iodine concentration (mUIC) among 1st trimester pregnant women (through selected antenatal care facilities). Additionally, because bread is a major staple processed food in Armenia, salt samples were also collected from two typical bakeries in each sentinel site within the catchment areas of the selected ANC facility and tested for iodine content.

The overall findings showed 92% of households and 100% of bakeries used adequately iodized salt (containing >15 ppm iodine), as well as good iodine status among 1st trimester pregnant women (mUIC of 175.3 µg/L). Furthermore, the finding of decreasing and consistently less than 3% prevalence of elevated TSH levels (>5 mIU/L) among newborns over the past 12 years is another indication of adequate iodine status among pregnant women in Armenia over that time.

This experience from Armenia demonstrated that consistency between the overall iodized salt supply in the country and iodine status of the population, may be documented using the FORTIMAS methodology as a low-cost and rapid approach for on-going tracking of national salt iodization programs.
Middle East and North Africa

In collaboration with UNICEF, a comprehensive 21-country assessment on iodine nutrition and salt iodization was completed, with in-depth reviews and a regional workshop focusing on Egypt, Iraq, Lebanon, and Sudan.

The assessment highlighted varying coverage rates of household iodized salt across both ends of the spectrum, ranging from 0% in Djibouti to 99% in countries like Qatar and Iran. With interventions in Morocco already in their third year, IGN and UNICEF decided to primarily focus on moving the needle in Egypt, Iraq, Lebanon and Sudan, allowing for more tailored interventions. A workshop in Jordan in January 2023 brought together government officials, academia, UNICEF specialists, and IGN experts from Sudan, Iraq, Egypt, and Lebanon to develop an action plan aimed at addressing the identified challenges and advancing iodine nutrition initiatives.

Morocco's salt iodization legislation

Despite enacting mandatory salt iodization legislation in 1995, Morocco has faced significant challenges in achieving sustained progress against iodine deficiency. A key barrier to progress has been the weak regulatory framework surrounding salt iodization. The National Office for Food Safety (ONSSA) has struggled with limited resources and inconsistent monitoring practices, hindering the production of quality iodized salt.

Recognizing the urgent need for action, stakeholders in Morocco undertook a comprehensive review of the legislative framework surrounding salt iodization, identifying significant gaps, especially the absence of mandatory use of iodized salt in processed foods and animal feeds. With IGN support, studies estimated the contribution of processed foods to salt and iodine intake, assessed the use of iodized salt by institutional catering contractors, and explored the feasibility of iodine supplementation in animal feeds. The 2021 study on processed foods showed a significant contribution of consumption of salt from cheese, bouillon, and biscuits to overall salt intake.

Following extensive advocacy efforts, ONSSA drafted a revision of the legislative text to include iodized salt in processed foods, submitting it for adoption in early 2022. However, progress stalled, and stakeholders engaged in vigilant monitoring, partner engagement, and used IGN’s global evidence to counteract misperceptions and provide answers to pertinent questions and concerns from decision makers.

The consistent advocacy and information provision was successful as very recently a new decree on the use of iodized salt in fortified foods was adopted and this represents a significant milestone in Morocco’s efforts to regulate the iodization of salt for human consumption. It addresses emerging market trends and technological challenges, setting specific mandates for iodization in various salt types and simplifying labeling requirements. It mandates iodization for salt sold to consumers and used in the food industry, except for boutique salt (fleur de sel) and coarse salt. Additionally, it requires iodization for edible salt used in imported processed food products. This is an incentive for the salt industry to move towards large-scale salt iodization, a pivotal step towards achieving sustainable iodine nutrition.
IGN strengthened regional coordination and partnerships through regular online meetings with National Coordinators to support activities and address emerging issues. Dissemination of country landscape analyses led to follow-up meetings with stakeholders in six countries.

A regional policy brief on the complementarity of salt iodization and salt reduction programs explored the possibilities to expand collaboration, synchronize strategies and sustain improved health outcomes and was broadly shared among regional stakeholders.

India bolstered national coordination and hosted thematic meetings on oversight, salt reduction, and processed foods. Studies assessing the use of iodized salt in processed foods in Pakistan and Bangladesh were completed, while Sri Lanka used IGN’s pilot USI sentinel surveillance tool to monitor household salt iodine and urinary iodine status. The first round of data generated using the tool raised concern about deteriorating population iodine status and identified a possible cause, and was presented at the Micronutrient Forum’s 6th Global Conference in the Netherlands in October 2023.

In Pakistan, technical support and rapid test kits were provided for the 2023 Multiple Indicator Cluster Survey (MICS) in Punjab province and procurement of and distribution of rapid test kits to monitor iodization in Afghanistan was completed collaboratively between National Coordinators in the two countries. IGN’s participation in UNICEF’s regional meeting in Nepal further bolstered networking efforts and support for maternal and adolescent nutrition initiatives, including iodine nutrition.

Highlighted activity: Understanding the role of processed foods in iodine intake in Bangladesh

Bangladesh has successfully reduced iodine deficiency nationally since mandatory salt iodization was introduced in 1989, but the increased use of processed foods has likely resulted in lower consumption of household salt for cooking. To protect adequate iodine status in the population, in 2021, the country’s government mandated the use of iodized salt in processed foods through the Salt Act.

IGN and UNICEF conducted a study to identify the most widely and frequently consumed salt-containing processed foods in Bangladesh.

The study also sought to review compliance with the new legislation and estimate salt and iodine intake from these foods.
The study concluded that in view of their growing consumption, processed foods may play an important role in improving iodine intake among different population groups. The most popular salt-containing processed foods in Bangladesh are baked goods and biscuits, ready-to-cook/convenience foods (instant noodles), savory snacks (potato chips, corn chips, and cheese balls), frozen foods (processed meat, fish), sauces, dressing and condiments (tomato ketchup, pickles). Almost all producers reported that they use iodized salt.

Based on serving size and salt content on the labels of 15 commonly consumed products, the study estimated that some of these foods provide a significant contribution to daily iodine needs. It noted that processed foods are consumed more often and in greater quantity in urban areas. While Bangladesh wants to ensure adequate iodine intake for its population, it is also seeking to protect its people against risk of heart disease and stroke due to excessive salt consumption. They are asking people to limit their intake to less than one teaspoon a day, while stressing the importance of using iodized salt.
South East Asia and Pacific

IGN completed a landscape analysis and presented it to the government of Cambodia together with recommendations for reviving the country’s USI program. In Indonesia, IGN, together with UNICEF and Nutrition International, met with key government officials and advocated for new data on iodine deficiency.

In the Philippines, IGN collaborated with various partners and institutions to prevent the weakening of salt iodization legislation, working to finalize a landscape analysis, provide new information and data, and participated in a strategic planning exercise with a focus of improving regulatory monitoring. IGN engaged with the government of Vietnam to analyze the current salt iodization regulation and provide strengthened advocacy data and information to avoid weakening of legislation.

Highlighted activity: Working with government to revitalize Cambodia’s USI program

A comprehensive landscape analysis conducted by IGN, with logistical support from UNICEF, on the current state of iodized salt production, distribution, and consumption in Cambodia was the beginning of efforts to revitalize the country’s USI program. The analysis highlighted challenges around monitoring and enforcement of salt iodization in the wake of the COVID-19 pandemic, which had stopped routine regulatory visits to production sites and markets, as well as challenges with organization and support for salt producers.

Based on the landscape analysis, IGN, and involved partners made recommendations for reviving the USI program. The presentation of the report was linked to a strategic planning exercise with national partners and government.

Following the planning exercise, the government approved and supported a strategic plan, a pivotal step towards revitalizing the USI program and charting a course for improved public health outcomes. A new IGN National Coordinator for Cambodia is now actively engaged in monitoring and supporting government implementation of the plan.
China and East Asia

Recent national survey data shows China continues to control IDD. The National Bureau of Disease Control and Prevention launched an action plan aimed at preventing and treating endemic diseases, including the control of iodine deficiency as well as avoiding iodine excess from drinking water.

A study on a unique sentinel survey method to assess iodized salt consumption, involving medical students and residents from various regions was published in the IDD Newsletter. Additionally, a cross-sectional survey of iodized salt usage in dining establishments across 13 provinces has been published, highlighting ongoing efforts to monitor and improve iodine nutrition. Various workshops and lectures have been conducted, including a presentation at the Salt Industry Technology Innovation and Development Forum, emphasizing the importance of Universal Salt Iodization (USI) in eliminating iodine deficiency and involving engagement with key stakeholders from the salt industry. For National IDD Day, IGN supported students in creating a short video related to IDD.

Highlighted activity: A 30-year study on iodine and children’s intellectual ability in China

A study published by the Chinese Journal of Endemiology, assessed the intellectual development of school-aged children in Baicheng County before and after the implementation of iodine fortification strategies. At first, children were given intermittent iodine supplements from 1989-2009. This was followed by continuous and effective fortification of salt with iodine from 2010-2018.

The study observed changes in the intellectual development of schoolchildren aged 8-10 years in Baicheng County at five different time points (1989, 2002, 2006, 2012, and 2018). A total of 660 Uyghur children were surveyed using the Combined Raven’s Test for rural populations in China (CRT-RC), a validated tool for assessing IQ. The research design accounted for factors such as the Flynn effect (the rise of population IQ over time) and demographic shifts.

The study showed that the intermittent supplementation from 1989-2009 did not effectively protect children’s intellectual development, but that continuous consumption of iodized salt had obvious positive effects on children’s normal intellectual development following sustained iodine supplementation efforts.
Western and Central Europe

With support of Kiwanis International, IGN has led the writing of a WHO report on the issue of iodine deficiency in Europe which is expected to be published in May 2024.

The report contains information on iodine status, on changes due to dietary shifts, on health and economic consequences, and on options for regulation and approaches towards improvement of iodine intake.

IGN and the European Thyroid Association (ETA) held a meeting in Milan, in September, with attendance of ETA members, researchers, and IGN National Coordinators. Attendees were presented with various studies and information indicating the continued need to pay attention to iodine deficiency in Europe.

Recognizing the need for continuous monitoring and the need to address the lack of such data, a sentinel site approach to monitor iodine status in pregnant women and newborns in Europe is being tested, using 8 hospitals from across Europe, to collect samples from mother-neonate pairs. Two iodine status biomarkers will be assessed in one reference laboratory: thyroglobulin in dried blood spots and urinary iodine concentration.

Highlighted activity: Understanding the problem of iodine deficiency in Europe

The use of iodized salt as a vehicle for preventing iodine deficiency is one of the most successful global public health interventions and has been practiced in most countries of the WHO European Region with remarkable impact. A century ago, large parts of the European population were affected by endemic iodine deficiency due to severely iodine deficient diets. Iodine deficiency disorders such as goitre, clinical hypothyroidism, and severe intellectual disability, once historically widespread, are now controlled thanks to iodised salt.

As Switzerland celebrated its inspiring journey to 100 years of salt iodization in 2023, IGN reflected on European progress. The last WHO report on iodine deficiency in Europe, published more than 15 years ago, concluded that iodine deficiency remains a public health concern. In 2018, scientists from the EU-funded EUthyroid project raised the possibility that up to 50% of the region’s newborns do not reach their full cognitive potential due to iodine deficiency. The scientists, along with IGN and other stakeholders, pointed out that most mothers are unaware of the consequences of low iodine for their children, and that despite healthcare cost related to iodine deficiency, prevention programs received surprisingly little attention from policymakers, opinion leaders and citizens. IGN became increasingly concerned that progress may be slipping, and recent data was urgently needed to give an accurate picture of the situation.
With longtime civil society partner Kiwanis International, IGN approached WHO to discuss the writing of a new report on iodine deficiency in the WHO European Region, and agreed to move forward with a comprehensive report that would persuade stakeholders of the need for action. A wealth of new data on iodine status has become available since the previous WHO report, particularly in vulnerable population groups.

**Nationally representative studies of iodine status assessed by medianUIC in the WHO European region**  
(n=54)

Over more than two years of research, the report’s authors reviewed the current scientific knowledge of the consequences of mild iodine deficiency, dietary sources of iodine and effectiveness of current iodine deficiency prevention measures on iodine status in the 53 countries of the WHO European Region, plus Kosovo. It also reviews the economic impact of iodine deficiency in the current European context. This report is unique as it combines information sourced not only from scientific publications and public health reports, but also animal husbandry science and reporting, and the food industry.
North America

There are only very limited data for iodine status of pregnant women in the United States. The National Health and Nutrition Examination Survey (NHANES) does not oversample for pregnancy, so the numbers of pregnant women included are small and there is no information on geographic distribution.

The NIH’s ECHO Cohort is conducting a multi-center cross sectional survey of the iodine status of pregnant women which includes cohorts across the US, including a Native American cohort. IGN’s support for this survey will allow inclusion of a larger number of individuals. Data analysis is ongoing, and a paper will be submitted to a peer-reviewed journal in 2024. A major problem in tackling the problem of iodine deficiency in the United States is the lack of knowledge regarding iodine nutrition among medical providers and the public and lack of consensus around strategies for optimizing iodine nutrition. IGN’s Regional Coordinator, Dr. Elizabeth Pearce, is participating in a writing task force that is revising the American Thyroid Association’s pregnancy guideline, heading the iodine subgroup. IGN also collaborates with organizations like the National Dairy Council and the American Thyroid Association to advocate for improved iodine nutrition and ensure its inclusion in prenatal supplements.

Highlighted activity: On the eve of celebrating the centennial of a major US public health success

Reflecting on the centennial celebration of salt iodization in the United States in 2024, Dr. Elizabeth Pearce, Regional Coordinator for North America at IGN, shares her thoughts on the journey towards this public health milestone in the article ‘Iodized salt: Celebrating the centennial of a major US public health triumph’ published in Healio, a trusted information platform for physicians and health care professionals.

Dr. Pearce notes that just over a century ago, iodine deficiency plagued much of the U.S. population, leading to debilitating disorders. The prevalence of goiter, particularly in regions like the upper Midwest, Pacific Northwest, and Appalachians, prompted urgent action. Groundbreaking clinical trials conducted in Akron between 1917 and 1920 demonstrated the efficacy of iodine supplementation in preventing endemic goiter, paving the way for the adoption of salt iodization in 1924 and subsequent reduction in goiter rates.
However, recent trends indicate a resurgence of mild iodine deficiency among U.S. pregnant women, underscoring the need for continued vigilance. Dr. Pearce emphasizes that unlike most other countries today, salt iodization remains voluntary in the U.S., with only half of table salt sold currently iodized, posing a risk to public health. Additionally, she highlights the emergence of dairy as an important source of iodine in the U.S. diet but notes that it is not as widely consumed as salt across the population. The growing popularity of plant-based milk alternatives, devoid of iodine, may further exacerbate the decline in U.S. iodine intakes.

As the nation celebrates past successes, Dr. Pearce stresses the importance of maintaining optimal iodine nutrition to prevent the resurgence of iodine deficiency and ensure a healthier future for all. Through ongoing efforts and heightened awareness, she believes that the U.S. can continue to build upon its legacy of iodine fortification and safeguard public health for generations to come.

▲ Portrait of a man with goiter, North America, around 1900 © John D. Strunk

▲ Women packing salt in Michigan, around 1910. By the mid-1920s, much of the salt was iodized, resulting in a reduction in goiter rates © Archives of Michigan
Central America and the Caribbean

Preparations were made for the first regional meeting of food fortification or micronutrient national nutrition commissions to take place in 2024. IGN also provided technical support to Guatemala in relation to new draft changes to salt fluoridation and iodization.

IGN finalized plans to refine the South American public and health information campaign on the importance of iodized salt, for use in the region. Technical support to the Dominican Republic led to iodine status testing and household use of iodized salt being included in the National Nutrition Survey.

A study of the contribution of processed foods to sodium and iodine intake in Guatemala and Panama was carried out by IGN and the Institute of Nutrition of Central America and Panama (INCAP). The study showed that salt is the major contributor to sodium availability in the diet in both countries, especially among poorer groups, emphasizing the importance of strengthening strategies both to reduce sodium intake and to communicate on consuming less salt, but making sure it is iodized.

**Highlighted activity: Supporting legislative change through understanding the variability of iodine in salt**

As part of support to Guatemala in relation to the proposed legislative changes, IGN conducted a study of actual variability of iodine in salt at plant level. IGN and INCAP also supported a site visit by government representatives to a fortification plant to look at the process of monitoring fluoride and iodine content in salt.

Almost 400 samples of fine and coarse salt were received in June and November 2023, and the fortification company shared the levels of iodine in salt from its quality control activities and the results of external monitoring carried out by the Ministry of Health. Four types of salt were identified: dry coarse mine salt fortified either with iodine or iodine and fluoride, and dry mine salt fortified with iodine or with both.

Analysis by type of salt and batch is still in progress, but preliminary results show average iodine content at about 43mg/kg which is slightly above the defined minimum standard of 40 mg/kg. IGN and INCAP will follow up with the government of Guatemala to discuss results and identify next steps.
Data and innovation
Exploring the potential to improve iodine nutrition

Even in far-flung rural areas in low-income countries, processed foods are increasingly becoming part of daily diets. Urbanization, global food systems and proliferation of supermarkets all contribute to the increasing use and availability of processed foods. Certain regularly used foods made using iodized salt, such as bread, cheese, soy sauce, bouillon cubes and tomato paste, can be an important additional source of dietary iodine, especially as cooking at home with iodized salt becomes less common due to availability of ready-made alternatives.

While we at IGN are aware of the potential health risks that come with increased intake of salt, especially through consumption of ultra-processed foods, and are supportive of efforts to reduce salt intake and achieve a healthy diet, we believe it is important to understand the current and potential role of processed foods made using iodized salt to improved iodine nutrition, especially for populations that have no access to iodized table salt.

Between 2019 and 2022, IGN assessed the potential contribution of processed foods to iodine intake in 24 countries. In 12 of these countries iodized salt was used, to some extent, in making their products. Bread and bouillon cubes were either the main or secondary contributors to iodine intake in 11 countries. Instant noodles, dehydrated soups, spice mixes and powdered seasonings, pickles and meat products also contributed to iodine intake.

In 2023 we reviewed the global use of iodized salt in widely and frequently consumed processed foods, the legislative and enforcement landscape, and the food industry’s perception and use of iodized salt. Our objective was to get a clearer global picture of the situation, and to understand how countries that still struggle with iodine deficiency can potentially improve iodine intake by using iodized salt in specific food products. Almost 90% of countries mandate use of iodized salt in processed foods. Unfortunately, legislation sometimes leaves room for interpretation, with unclear or implicit statements leaving gaps in implementation, but creating opportunities to improve iodine intake.

We are seeking to dovetail these efforts with the global push towards reducing salt intake to protect against cardiovascular disease, advocating for less salt, but with adequate iodine levels to prevent and to protect against iodine deficiency.
Research and data

Unmasking inequities in national data

In its work to analyze program scale, identify challenges and find solutions, IGN has reviewed data on iodine status and salt iodization coverage from global databases to expose a clearer picture of equity in coverage across population groups. It also has worked on developing a sustainable cost-effective approach to assess program coverage and iodine status using sentinel site surveillance.

IGN has found that although elimination of iodine deficiency is a major public health success story, with only 20 countries remaining deficient, there is a need to delve more deeply in national data, and look beyond averages. Our 2023 review of global data on iodine status showed that of the 161 countries with iodine status data from school aged children, only 35 had sub-national data. Of these, 63% had iodine deficiencies at sub-national level while nationally there was iodine sufficiency. These areas may represent a considerable number of people.

© Shutterstock, Harar, Ethiopia
The most common disparities are between rural and urban areas, as is the case in Burkina Faso, Malaysia and Turkey for the iodine status of school-age children. In some countries, entire districts or provinces can be worse off than others, as is the case in Bhutan and Sri Lanka among school aged children, in Pakistan among school aged children and pregnant women or between wealth quintiles, as in Sierra Leone among pregnant women and Bangladesh among school aged children and women of reproductive age.

There are too many countries without data on inequalities because surveys in these countries were either not designed to assess inequity or analyze the data with an equity focus. Only 22% have sub-national data and the magnitude of the problem of sub-national deficiency is therefore likely underestimated.

Surveys are the most robust way to review program performance by assessing household coverage of iodized salt and the iodine status of different population groups. Capturing iodine status sub-nationally is costly, as it requires large sample sizes, which is a challenge as resources for such surveys have dwindled over time.

66% of household iodized salt coverage data is over five-years-old, and 26% is more than 10-years-old. For school-age children, 84% of data are over five years old and 54% are over 10-years-old.

IGN is looking for innovative, simple, low-cost solutions to this problem. One such approach is built on a sentinel surveillance system, originating from the FORTIMAS flour fortification monitoring method. The approach assesses iodine status and household use of iodized salt in a targeted manner using existing infrastructure systems and data. The approach allows for less expensive and less complex monitoring and identification of potential deficiencies and to fill gaps in missing data.

The system can also be used to assess and monitor trends in household iodized salt coverage and iodine status in targeted geographical areas. The USI (FORTIMAS) surveillance system has been designed and initiated now in 5 countries: Georgia (2016), Turkmenistan (2018) Sri Lanka in 2022 and Armenia and Tanzania in 2023. IGN is developing a guidance manual to facilitate its use in other countries with IGN support.
Our partners and supporters
Partnerships and funding

All of IGN’s work happens through dynamic and different partnerships with international organizations, governments, the private sector and civil society, and donors.

We work with partners on activities such as technical support, program implementation, maintaining global data, improving and sharing technical knowledge, and broader advocacy efforts to promote the fortification of staple foods with essential micronutrients, including iodine.

Our work with UNICEF

Our major collaboration with UNICEF, funded by USAID, strengthens universal salt iodization efforts, improves global knowledge about iodine deficiency, and helps us to provide technical guidance and support to improve sustainability of iodine programs globally and more specifically in two regions, reaching many countries around the world. The activities in partnership globally and across regions are detailed in our regional round-up and specific stories.

Producing a major report with WHO

Iodine deficiency, especially mild deficiency, is a widespread problem in Europe. The last WHO report on iodine deficiency in Europe was published fifteen years ago. A wealth of new data on iodine status has become available since then, particularly in vulnerable population groups, which led us to write a unique new report that combines information sourced not only from scientific publications and public health reports, but also animal husbandry science and reporting, and the food industry.

With support from Kiwanis International, IGN partnered with WHO to write this report over the past two years and to launch it in 2024. The report emphasizes that while iodized salt remains the main strategy to ensure adequate iodine intake in the WHO European Region, lifestyle choices and dietary trends, including more frequent use of processed foods and the switch to plant-based diets and dairy alternatives, are contributing to persistent, and in some countries increased, insufficient iodine intakes.

Partnership with the Micronutrient Forum

The Micronutrient Forum plays a similar, but broader role to IGN’s work on advocacy, convening, tracking and knowledge management on national and global micronutrient programs. Mutual topics of interest include global advocacy to expand food fortification and the inadequacy of micronutrient data, and finding innovative ways to gather or use data differently. We are also working together to understand the economic consequences of micronutrient deficiency.
Support from the Bill & Melinda Gates Foundation

The Foundation funds aspects of our work that include research and innovation in data collection, leading to more effective programs and better coverage. Funding support is also provided for the Global Fortification Data Exchange (GFDx) partnership which provides actionable data on food fortification across the world, working with the Global Alliance for Improved Nutrition (GAIN) and the Food Fortification Initiative (FFI).

Nutrition International (NI)

Nutrition International is one of the lead organizations supporting country-level efforts to achieve USI. IGN collaborates with Nutrition International to support planning of scalable and sustainable USI programs at country level, align policies and practices, and to jointly further the USI and iodine nutrition agenda.

The World Iodine Association (WIA)

WIA supports IGN’s work to advocate on the importance of iodine nutrition and salt iodization, iodine status and programming. The opportunity to meet and network with leading researchers and companies working on improving iodine nutrition provided significant insights and new areas of collaboration.

Founders Pledge

In addition to support for the data collaboration with WHO, we would like to acknowledge the major contribution of Founders Pledge to our work in countries around the world.

The Life You Can Save

We work closely with the team at The Life You Can Save, who not only support but promote IGN’s work.

Thank you!

From small donations from individuals to grants from the organizations mentioned in this article, every contribution plays a vital role in our work. We don’t have offices and keep our administrative costs to a minimum, so that every donation protects the developing brains of children through the simple, cost-effective intervention of iodizing salt.
We would like to thank the following organizations and platforms:
Simplicity is key to the success and sustainability of salt iodization

The United States Agency for International Development (USAID) has been supporting iodine programming for many years.

Omar Dary, Senior Nutrition Science Specialist at USAID’s Bureau for Global Health, shares some thoughts on the evolution of iodine programs and IGN’s role in a changing landscape.

Over the many years during which Congress has allocated funding for the global prevention of iodine deficiency to avoid impairment of children’s cognitive abilities, USAID has been partnering with UNICEF to make salt iodization programs more stable and widespread. UNICEF in turn works with IGN as part of this initiative, in areas of global advocacy, strategy development and technical support to countries.

“The prevention of iodine deficiency disorders (IDD), mostly through the addition of iodine to salt, has been one of the success stories of public health nutrition of the 20th century, and the first years of the 21st century. At this moment, there are few pockets of populations in the world that suffer from the deficiency. In most cases, we can claim that we achieved our global goals,” said Omar. He warns, however, that some countries now believe that the problem of iodine deficiency has disappeared. “However, the need for iodine in the diet has not disappeared. This is something that we need always to keep in mind.”

In November 2021, UNICEF, USAID and IGN convened a group of partners to review this global progress, look at what has worked and learn what is needed to successfully sustain salt iodization in countries around the world now that the visible signs of iodine deficiency, such as goiter, have largely disappeared. For the past two years, the group, along with many partners and stakeholders, have been working together to identify guiding principles to enhance effectiveness and sustain global progress in today’s changing context.
IGN is a remarkable organization, and it has done a very good job in having local colleagues collaborate and be leaders in their own environments.

USAID supported this technical consultation because after more than 30 years of salt iodization, there is a need for all involved organizations to advance their knowledge based on changing needs and trends. And while some countries have modernized their programming, others are far behind. “We want everyone to be knowledgeable about how to proceed. Following the consultation, we will produce briefs on the various programming issues and transfer knowledge through these briefs and a series of webinars and workshops.” For this, he feels IGN and its networks will play a major role.

“IGN is a remarkable organization, and it has done a very good job in having local colleagues collaborate and be leaders in their own environments. Nothing comes top down. You have an army of very enthusiastic and committed people working in different countries. What IGN needs to do now is to get across the message that things have changed, and that new practices are required to respond to those changes.”

To understand impact, he sees the need to incorporate iodine status assessment into general health and nutrition surveys in countries. Program performance can be assessed at market level along with other fortification programs. “We need to keep monitoring every 5-6 years to show the system is still working. The moment that salt iodization programs are no longer in place, we run the risk returning to the initial problem.”

His final message: “I would like to emphasize simplicity. We need to reduce the complexity of programs. We need to be satisfied that the programs are working, that we monitor them, and that they are low-cost, sustainable and simple.”
Working with Nutrition International

Joel Spicer, President and CEO of Nutrition International, talks about the organization’s work and partnership with IGN.

Why is Nutrition International engaged with the problem of iodine deficiency?

Nutrition International’s vision is a world where everyone, everywhere, is free from malnutrition and able to reach their full potential. We work alongside governments to achieve that goal by scaling up high-impact, low-cost, evidence-based interventions.

Iodine deficiency disorders (IDD) remain a pressing global health concern, particularly affecting the mental development of children. Iodine deficiency is the single most important preventable cause of brain damage and an unfinished agenda in nutrition. It can have profound and lasting impact on children and their families, and yet it’s a solvable problem because the regular consumption of salt fortified with iodine is a proven, cost-effective strategy for preventing iodine deficiency. That is why Nutrition International has been working on universal salt iodization globally for over 20 years.

How has Nutrition International’s iodine programming evolved?

Nutrition International has been dedicated to expanding access and accelerating progress on universal salt iodization (USI) globally. In the early years our work focused on salt supply and iodization efforts, mainly with small producers, to ensure the quality of iodized salt. Over the years this support expanded and our engagement with small- and medium-scale salt producers has led to the establishment of large-scale processing units, driving consolidation in the salt sector and ensuring the production of high-quality iodized salt. This groundwork paves the way for further innovations in the industry, including assessing readiness to incorporate additional micronutrients into already iodized salt.

We’ve seen much evolution and progress, but some things remain core to our approach. One is that we work alongside local salt industries, providing technical and operational support to ensure the quality production of adequately iodized salt but also local ownership and sustainability. This support may include financing equipment or strengthening the quality and supply chains. We also support national governments in designing iodine deficiency control programs, conducting regular reviews for effective implementation and offering capacity-building training to improve quality control.

What still needs to be done by Nutrition International or other partners?

Many countries have achieved significant USI coverage, over 60-80%. However, the durability of these gains is not assured. Governments continue to need targeted support for monitoring and producers need continued support for quality control if we are to reach and sustain the ‘last mile’ in USI. But as more and more countries adopt USI, donor interest has slowly faded.
We need continued advocacy – reducing acute iodine deficiency like goiters in women and cretinism in children is one of the most profound public health success stories in the micronutrient malnutrition world, but it’s not finished yet and committed attention by global public health agencies is still essential.

We’re highly motivated by the potential to tackle this problem and we have a powerful story to tell. Our work contributes to approximately 500 million people having access to adequately iodized salt every year. We’ve helped 10 million newborns to be protected against iodine deficiency and we have enabled 7.7 million metric tonnes of iodized salt to be produced in Africa and Asia over the last five years. Staff at Nutrition International feel a deep sense of pride at being able to contribute at this scale. We need to tell this impact story clearly to donors and to national governments to convey that, with adequate support, population-level progress and impact are possible.

We also need to keep at the cutting edge of new technologies and new solutions. For example, Nutrition International is working with partners on research and development for double-fortified salt. In India, we’ve spent years refining and introducing iodine and iron double-fortified salt which is now being scaled up. In Ethiopia, in collaboration with national and international partners, we are spearheading a project to introduce double-fortified salt with iodine and folic acid into the marketplace to combat neural tube defects as well.

The potential public health impact is significant. Most importantly, we need to keep going – together. The last mile towards USI, where all people are protected from iodine deficiency and all children are able to achieve their full potential, is in sight.

Nutrition International President and CEO, Joel C. Spicer visits the Chiklod Khurd Integrated Government High School in Madhya Pradesh, India where he was warmly welcomed by students with handmade Warli paintings. Photo courtesy of Nutrition International.
How do you perceive your partnership with IGN so far, and what strengths do you feel both sides bring?

The Iodine Global Network is a key partner for Nutrition International’s work in fighting iodine deficiency.

Each organization has its own strengths that complement and strengthen the other. Nutrition International has established longstanding trusted networks and credibility with governments on the ground that facilitate seamless collaboration at the implementation level across the public and private sector. Similarly, IGN uses its extensive network of National Coordinators and global influence to spotlight pressing issues that demand attention and action. Together, these combined strengths are a formidable force for driving impactful change on a global scale. One example of our collaboration with IGN is Bridging the Fortification Gap in the Philippines, a two-year collaborative initiative to address the nutritional needs of women, children, and adolescent girls by improving policies on wheat flour fortification and universal salt iodization.

What can the two organizations learn from each other?

We can come together with a common goal and leverage each other’s tools and resources to meet mutual objectives in battling global malnutrition. There is always a learning opportunity when working with someone else. Different perspectives, and ideas on how to do more in the area of iodine deficiency can lead to new solutions and ways to do more.

How can we work together in the future?

Nutrition International and IGN have a solid history of collaboration, founded on the impact that our USI work has had on improving human health and developing human capital for the new generations. We’re encouraged about the natural alignments between our organizations and in our joint efforts to amplify awareness about the issue and bolster advocacy and fundraising. Together, we aim to support the salt-reduction strategy as part of a growing focus on curbing the sharp rise in diet-related non-communicable diseases – while expanding USI coverage with a more comprehensive food systems approach, moving beyond just focusing on salt that is present at the table.

At Nutrition International, we’re energized by the innovation potential around using salt as a vehicle to deliver multiple micronutrients. I like to think of the success of USI programs so far as having created a nutrition highway that we can now drive additional micronutrients on for even greater impact. But we’ve got to do it in the right way, working closely with countries to get it to scale. We have reached out to IGN to leverage their experience and vision in promoting and sustaining USI programs for the development of double and multiple fortified salt and we consider IGN a trusted and strategic partner in these and other pursuits.
Communicating with our audiences

A new website and a relaunched IDD newsletter

In 2023, IGN launched a redesigned website to spotlight our work and partnerships. The updated platform allows visitors to learn more about IGN’s initiatives, resources, and advocacy efforts. The website serves as a hub for information, including the global scorecard on iodine status and various knowledge products, allowing stakeholders to stay informed and engaged about the iodine nutrition landscape.

The IDD Newsletter returned in 2023 in with a new design. Established in 1985 as a means of sharing specialized knowledge and information with the global community working towards Universal Salt Iodization (USI), the newsletter has transitioned to an electronic-only distribution format. Content includes a wide array of articles on topics ranging from the history of Switzerland’s salt iodization program to an analysis on supporting small salt producers and a policy brief on salt iodization and salt reduction in South Asia, providing invaluable insights and fostering collaborative discourse.

IGN produced and disseminated ten Iodine Blogs, offering thoughts, ideas and insights from our work around the globe. We explored the issue of health inequities and the challenges of reaching remote populations. We looked at the economic costs of iodine deficiency. A blog on Uzbekistan revealed a problem with iodine supplements, underscoring the importance of salt iodization as the safest, most cost-effective solution. For World Iodine Deficiency Disorder Day, IGN highlighted Germany’s campaign “If salt, then iodized salt” led by the Federal Ministry of Food and Agriculture, raising awareness about the importance of iodine nutrition and its impact on public health.

IGN has developed a social media toolkit to empower countries in promoting iodine nutrition and advocating for robust salt iodization programs, amplifying our advocacy efforts on a global scale, and our social media presence continues to grow.
Our team
Management Council meeting

A joint Management Council and Board of Directors meeting was held on February 26-29, 2024 in Nairobi, Kenya, reviewing results from 2023 and looking forward to the year ahead.

Reporting to the Board on the first day of the meeting on achievements in 2023, Executive Director Werner Schultink noted the continued successful operation of the regional coordination mechanism in Eastern and Southern Africa and the strengthening of regional coordination in South Asia, and highlighted other areas of work across the regions.

IGN provided support to more than 30 countries globally in 2023. He pointed to the impact of IGN’s interventions in Cambodia, Moldova, Peru, South Sudan, Mozambique and Afghanistan, which had achieved real change. He presented IGN’s sentinel site tool methodology and results to date and an IGN review of studies on the use of iodized salt in processed foods, and emphasized the importance of partnerships with organizations such as UNICEF and WHO, which continue to empower us both to advocate for and achieve change.

Challenges to IGN’s work include the need for a predictable and stable funding basis, communication on our role and impact, and declining interest in the issue.

The second day was a joint meeting of the Board and the Management Council, which includes the core team and the Regional Coordinators. The team heard from Christiane Rudert, Regional Adviser for Nutrition for UNICEF in Eastern and Southern Africa, about UNICEF’s work on nutrition and the partnership with IGN. Other presentations over the four-day meeting included more detailed exploration of programs and activities in the regions.

▲ IGN’s Management Council and Board of Directors share insights and perspectives at a joint meeting in Nairobi in February 2024
Our core team

The IGN team consists of a small core staff and a network of Regional Coordinators, who work with an extensive network of National Coordinators, mostly volunteers who work either in academia or in government bodies focusing on nutrition.

Together, they identify gaps and opportunities in national programs, and IGN advocates for attention to these opportunities (such as legislative change), or provides technical assistance to address problems in production, supply chain, quality control and enforcement. In addition to allowing us to quickly identify a problem or an opportunity, this bottom-up approach emphasizes and supports ownership by local stakeholders, strengthening program sustainability.

Core team

Werner Schultink
Executive Director
Canada

Jude Louis
Finance and Administration Manager
Canada

Robin Houston
Senior Advisor, Program Implementation
USA

Deqa Jama
Communications Specialist
Kenya

Arnold Timmer
Senior Advisor, Program Implementation
Switzerland

Mathilde Maurel
Operations Specialist
France

Joyce Greene
Senior Advisor, Partnerships and Advocacy
Ireland
Board of Directors

Our Board of Directors is responsible for overseeing the organization’s strategic direction and ensuring that our operations align with our mission and values.

Chair
Michael B. Zimmermann
United Kingdom

Treasurer
Sophia Weber
Canada

Secretary
Daniel Levac
Canada

Maria Andersson
Zurich University
Children’s Hospital
Switzerland

Mandana Arabi
Nutrition International
Canada

Maria Elena Jefferds
Centers for Disease Control
USA

Rishi Kansagra
Purebond Ltd
United Kingdom

Srinivasan Krishnamachari
St. John’s Medical College
India

Mary L’Abbe
University of Toronto
Canada

Mu Li
University of Sydney
Australia

Peng Liu
CDC, China
China

Penjani Mkambula
GAIN
Switzerland

Sergio Moreno
AMISAC
Mexico

Saskia Osendarp
Micronutrient Forum
Netherlands

Rumishael Shoo
Tanzania

Stan D. Soderstrom
Kiwanis
USA

Vilma Tyler
UNICEF
USA

Lisa Rogers (Observer Status)
WHO
Switzerland
IGN has a unique network of Regional and National Coordinators, who possess a deep understanding of local contexts and are instrumental in identifying tailored solutions.

These dedicated IGN team members explore challenges that hinder national progress, acknowledging the impact of dietary changes such as the use of iodized salt in processed foods, and monitoring advancements in salt reduction initiatives.

Our National Coordinators are volunteers and are an invaluable source of country-specific knowledge, offering in-depth information and serving as vital contacts and partners for implementing necessary activities. They advocate for technical support for crucial program components necessary for sustainable universal salt iodization (USI) and the achievement of our goals, and provide essential technical assistance in designing, implementing, analyzing, and reporting on iodine-related interventions, as well as supporting implementation of legislation and regulations pertaining to salt iodization.

### Regional Coordinators

- Elizabeth N. Pearce North America
- Fatima Ivette Sandino Central America and Caribbean
- Ana Maria Higa Yamashiro South America
- Rodrigo Moreno-Reyes Western and Central Europe
- Izzeldin Hussein Middle East and North Africa
- Amal Tucker Brown West and Central Africa
- Festo Kavishe Eastern and Southern Africa
- Renuka Jayatissa South Asia
- Ming Qian China and East Asia
- Edward Otico South East Asia and Pacific

### National Coordinators

#### Central America and the Caribbean

- Natalia Largaespada Belize
- Carolina Martínez Costa Rica
- Blanca Terry Cuba
- Janet Velez Dominican Republic
- Carolina Martínez El Salvador
- Mónica Guamuch El Salvador
- Carolina Martínez Guatemala
- Mónica Guamuch El Salvador
- Carolina Martínez Guatemala

- Joseline Marhone Pierre Haiti
- Carolina Martínez Honduras
- Mónica Guamuch Honduras
- Sergio Moreno Huitrón Mexico
- Ivette Sandino Nicaragua
- Elka Gonzalez Panama
- Maria del Carmen Silva Argentina
- Rosalia Padovani Brazil
- Santiago Muzzo Chile
- Iván Darío Escobar Colombia
- Victor Manuel Pacheco Ecuador
- Jorge Jara Paraguay
- Walter Vilchez Peru
- Carlos Salveraglio Uruguay
- Luis Caballero Venezuela

- Agron Ylli Albania
- Amir Kurtaran Austria
- Rodrigo Moreno-Reyes Belgium
- Amal Tucker Brown Bosnia and Herzegovina
- Ludmilla Ivanova Bulgaria
- Zvonko Kusic Croatia
- Georgios Georgiades Cyprus
### Western and Central Europe cont.

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<td>Iris Erlund</td>
<td>Finland</td>
</tr>
<tr>
<td>Philippe Caron</td>
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<td>Henry Voelzke</td>
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<tr>
<td>Eftychia Koukkou</td>
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<tr>
<td>Endre Nagy</td>
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<tr>
<td>Ingibjorg Gunnarsdottir</td>
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<tr>
<td>Jayne Woodside</td>
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<td>Aron Troen</td>
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<td>Massimo Tonacchera</td>
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<tr>
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<td>Lisbeth Dahl</td>
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<td>Alicja Hubalewska-Dydejczyk</td>
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<tr>
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<tr>
<td>Lluis Vila</td>
<td>Spain</td>
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</table>

### Eastern and Southern Africa

<table>
<thead>
<tr>
<th>Name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vincent Assey</td>
<td>Deputy RC</td>
</tr>
<tr>
<td>Issye Ndombi</td>
<td>RC Team member</td>
</tr>
<tr>
<td>Carol Tom</td>
<td>RC Team member</td>
</tr>
<tr>
<td>Marlene Manuel Nunes</td>
<td>Angola</td>
</tr>
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<td>Lenkwete Boelane</td>
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<tr>
<td>Dora-Aimee Dushime</td>
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<tr>
<td>Fouad Mohammed Oussouf</td>
<td>Comoros</td>
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<tr>
<td>Berhane Kidane Araya</td>
<td>Eritrea</td>
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<tr>
<td>Ato Seyum Wolde</td>
<td>Ethiopia</td>
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<tr>
<td>John Maina Mwai Kiriro</td>
<td>Kenya</td>
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<tr>
<td>Thitihidi Ma-Isaaka Diaho</td>
<td>Lesotho</td>
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<tr>
<td>Matseleng Mohulela Mojakomo</td>
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<tr>
<td>Rakotonirima Delphin</td>
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<tr>
<td>Dr. Lolona Nathalie Rakotoavo</td>
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<tr>
<td>Ms Janet Guta</td>
<td>Malawi</td>
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<td>Felix Phiri</td>
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<tr>
<td>Aryamah Kumaree Doomun</td>
<td>Mauritius</td>
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<tr>
<td>Dr Eduarda Maria Flora Zandamela Mungoi</td>
<td>Mozambique</td>
</tr>
<tr>
<td>Mrs Carla Ester Saveca Chavane</td>
<td>Mozambique</td>
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<tr>
<td>Marjorie van Wyk</td>
<td>Namibia</td>
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<tr>
<td>Antoine Mukunzi</td>
<td>Rwanda</td>
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<tr>
<td>Stephanie Desnousse</td>
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<tr>
<td>Farhan Mohammed</td>
<td>Somalia</td>
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### Eastern Europe and Central Asia

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Ekaterina Troshina</td>
<td>DRC</td>
</tr>
<tr>
<td>Hrayar Aslayan</td>
<td>Armenia</td>
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<tr>
<td>Dinar Abbass</td>
<td>Azerbaijan</td>
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<tr>
<td>Tatiana Mokhort</td>
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<tr>
<td>Robizion Tsiklauri</td>
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<tr>
<td>Feruza Osapanova</td>
<td>Kazakhstan</td>
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<tr>
<td>Shamil Tazhibayev</td>
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<tr>
<td>Rosa Sultanalieva</td>
<td>Kyrgyzstan</td>
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<tr>
<td>Lilja Turcan</td>
<td>Moldova</td>
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<tr>
<td>Ekaterina Troshina</td>
<td>Russian Federation</td>
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<tr>
<td>Anamurat Nazarov</td>
<td>Turkmenistan</td>
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<tr>
<td>Victor Kravchenko</td>
<td>Ukraine</td>
</tr>
<tr>
<td>Murodjon Rashitov</td>
<td>Uzbekistan</td>
</tr>
<tr>
<td>Said Ismailov</td>
<td>Uzbekistan</td>
</tr>
</tbody>
</table>
## Our team

### The vital role of Regional and National Coordinators

### Eastern and Southern Africa cont.

<table>
<thead>
<tr>
<th>Person</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Rebone Ntsie</td>
<td>South Africa</td>
</tr>
<tr>
<td>Dr. Moeketsi Modisenyane</td>
<td>South Africa</td>
</tr>
<tr>
<td>Khamissa Ayoub Miluwa</td>
<td>South Sudan</td>
</tr>
<tr>
<td>Glorious Dlamini</td>
<td>Swaziland</td>
</tr>
<tr>
<td>Fatma Abdallah</td>
<td>United Republic of Tanzania</td>
</tr>
<tr>
<td>Samalie Namukose</td>
<td>Uganda</td>
</tr>
<tr>
<td>Ms. Gladys Chirwa Kabaghe</td>
<td>Zambia</td>
</tr>
<tr>
<td>Ms. Agnes Aongola</td>
<td>Zambia</td>
</tr>
<tr>
<td>Handrea Njoro</td>
<td>Zimbabwe</td>
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</tbody>
</table>

### Western and Central Africa

<table>
<thead>
<tr>
<th>Person</th>
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<tbody>
<tr>
<td>Dr. Mizehoun</td>
<td>Benin</td>
</tr>
<tr>
<td>Jean Kaboré</td>
<td>Burkina Faso</td>
</tr>
<tr>
<td>Alex Marco</td>
<td>Cameroon</td>
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<tr>
<td>Ndjebayi Ongia</td>
<td>Cameroon</td>
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<tr>
<td>Jonathan Ndokain</td>
<td>Chad</td>
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<tr>
<td>Sansan Dimanche</td>
<td>Chad</td>
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<tr>
<td>Houda Boukari-Camara</td>
<td>Cote d’Ivoire</td>
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<tr>
<td>Augustin Kamanda</td>
<td>DR Congo</td>
</tr>
<tr>
<td>Emmanuel Tetteh Quaye</td>
<td>Ghana</td>
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<tr>
<td>Tata Kliego Diarra</td>
<td>Mali</td>
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<tr>
<td>Isselmou Mohamed</td>
<td>Mauritania</td>
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<tr>
<td>Boubacar Issa</td>
<td>Niger</td>
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<tr>
<td>Afolabi Wasin Akinloye</td>
<td>Nigeria</td>
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### Middle East and North Africa

<table>
<thead>
<tr>
<th>Person</th>
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</thead>
<tbody>
<tr>
<td>Nadia Mohamed Gharib</td>
<td>Bahrain</td>
</tr>
<tr>
<td>Abdillahi ilmi gueddi</td>
<td>Djibouti</td>
</tr>
<tr>
<td>Dr. Gihan Fouad</td>
<td>Egypt</td>
</tr>
<tr>
<td>Zahra Abdollahi</td>
<td>Islamic Republic of Iran</td>
</tr>
<tr>
<td>Nabeel Fasdhih Hathaif</td>
<td>Iraq</td>
</tr>
<tr>
<td>Nawal Al-Hamad</td>
<td>Kuwait</td>
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<tr>
<td>Omar Ahmad Obeid</td>
<td>Lebanon</td>
</tr>
<tr>
<td>Fatima-Zahra Mouzouni</td>
<td>Morocco</td>
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<tr>
<td>Samia Al Ghannami</td>
<td>Oman</td>
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<tr>
<td>Faiz Rasool</td>
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<td>Ala’a I. F. Abu Al-Rub</td>
<td>Palestine</td>
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<tr>
<td>Al-Anoud Mohammed Al-Thani</td>
<td>Qatar</td>
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<tr>
<td>Mushary bin Hamad</td>
<td>Kingdom of Saudi Arabia</td>
</tr>
<tr>
<td>Widad Hassan Abdel</td>
<td>Sudan</td>
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<tr>
<td>Halim Hassan (New)</td>
<td>Sudan</td>
</tr>
<tr>
<td>Abir Ali</td>
<td>Syrian Arab Republic</td>
</tr>
<tr>
<td>Mounira Masmoudi Nabil</td>
<td>Tunisia</td>
</tr>
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</table>

### South East Asia and the Pacific

<table>
<thead>
<tr>
<th>Person</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creswell Eastman</td>
<td>Australia</td>
</tr>
<tr>
<td>Annie Kung</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>Minoru Irie</td>
<td>Japan</td>
</tr>
<tr>
<td>Yozen Fuse</td>
<td>Japan</td>
</tr>
<tr>
<td>Yoshimasa Shishiba</td>
<td>Japan</td>
</tr>
<tr>
<td>Lwin Mar Hlaing</td>
<td>Myanmar</td>
</tr>
<tr>
<td>Louise Brough</td>
<td>New Zealand</td>
</tr>
<tr>
<td>Victor Temple</td>
<td>Papua New Guinea</td>
</tr>
<tr>
<td>Theo San Luis</td>
<td>Philippines</td>
</tr>
<tr>
<td>Paul Yen</td>
<td>Singapore</td>
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<tr>
<td>Victor Temple</td>
<td>Solomon Islands</td>
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<tr>
<td>Sangsom Sinawat</td>
<td>Thailand</td>
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### China and East Asia

<table>
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<tbody>
<tr>
<td>Zu Pei Chen</td>
<td>China</td>
</tr>
<tr>
<td>Bolormaa Norov</td>
<td>Mongolia</td>
</tr>
</tbody>
</table>
Financial statements

For the year ended December 31, 2023
# Statement of operation

Year ended December 31, 2023

<table>
<thead>
<tr>
<th></th>
<th>2023</th>
<th>2024</th>
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<tbody>
<tr>
<td><strong>Revenues</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grants and contributions from non-governmental sources</td>
<td>$737,006</td>
<td>$814,104</td>
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<tr>
<td>Grants and contributions – UNICEF</td>
<td>$288,763</td>
<td>$473,934</td>
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<tr>
<td>Donations and other</td>
<td>$494,521</td>
<td>$466,946</td>
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<tr>
<td><strong>Total Revenue</strong></td>
<td>$1,520,290</td>
<td>$1,754,984</td>
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<tr>
<td><strong>Operating expenses</strong></td>
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<tr>
<td>Project expenses</td>
<td>$952,125</td>
<td>$1,159,232</td>
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<tr>
<td>Regional support</td>
<td>$329,040</td>
<td>$283,525</td>
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<tr>
<td>General administration</td>
<td>$194,465</td>
<td>$173,027</td>
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<tr>
<td><strong>Total Operating Expenses</strong></td>
<td>$1,475,630</td>
<td>$1,615,784</td>
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<tr>
<td><strong>Excess of revenues over expenses</strong></td>
<td>$44,660</td>
<td>$139,200</td>
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(in U.S. dollars)