The Philippines is a country of more than 7000 islands, of which around 2000 are inhabited. Its complex history, marked by successive waves of migration and colonization, has given rise to multiple ethnicities and dialects, while its geography has influenced the creation of one of the most decentralized government systems in Asia. Since achieving independence in 1946, the nation has faced successive decades of political instability, followed by a period of sustained economic growth since 2010. The Philippine population is the 12th-largest in the world and the seventh-largest in Asia at an estimated 106 million. The country is also thought to have entered its “demographic window,” with 70% of its population being of working age and a median age of 23.4 years (1).

"ASIN" means salt
To tackle increasing rates of goiter, in 1995 the government passed the Act for Salt Iodization Nationwide known as the ASIN law (‘Asin’ meaning salt in Filipino). The law requires the iodization of all salt for human and animal consumption, including salt used in food processing. According to the Implementing Rules and Regulations of the ASIN law, food processors can be exempted from this requirement if they can demonstrate that iodized salt has an adverse effect on their food products (2). However, a claim with supporting evidence must be approved by the Food and Drug Administration, and no claims have been submitted to date. The ASIN law is implemented through the National Salt Iodization Program (NSIP).

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In 2010, the National Nutrition Council (NNC) began to actively coordinate the USI program and formed a multi-sectoral Technical Working Group (TWG). The TWG coordinates implementation of the National Salt Iodization Strategic Plan, which operates in five-year cycles (2011-2016 and 2017-2022). Targets of the 2011-2016 Plan were for >90% of households to consume adequately iodized salt, and for median urinary iodine levels of school-age children (SAC), and pregnant and lactating women to be in the adequate range. These targets have been only partially met.

Is the country iodine sufficient?
The first National Nutrition Survey (NNS) completed after the adoption of the ASIN law showed that SAC were mildly iodine deficient, with a median urinary iodine concentration (MUIC) of 71 µg/L. Successive surveys at five-year intervals in 2003, 2008 and 2013, painted a more optimistic picture for SAC, showing that iodine deficiency was no longer a public health issue at the national level (Figure 1). Data at the sub-national level has revealed discrepancies in iodine nutrition across the country’s 17 regions, reflecting their socioeconomic and geographic diversity. However, between 2008 and 2013, the iodine intakes among SAC have improved such that only one region is still thought to be iodine deficient compared to 5 regions in 2008. The 2013 NNS indicates that the median UIC is insufficient (<100 µg/L) in only 11 of the 74 provinces.
Although the iodine status of SAC is used as a proxy for the general population, it is increasingly recognized that it may not represent population groups whose iodine requirements differ, such as pregnant women. This is evident in the Philippines, where iodine intakes among lactating and pregnant women are inadequate and appear to be decreasing despite the optimal intakes in SAC (Figure 1). This problem appears to be widespread with all 17 regions reporting iodine deficiency among lactating women, and 16 regions among pregnant women (3).

Poor correlation with household availability of iodized salt

Although the salt industry in the Philippines is centralized, with 4 national firms owning 24 facilities importing/processing 80% of the national supply of household salt, national surveys have consistently found that access to adequately iodized salt has been poor. In 2013, household use of iodized salt was estimated at around 80% based on rapid test kits (RTKs), but only 25.7% based on the quantitative WYD Iodine Checker (Figure 2). RTK is a qualitative method which can confirm the presence or absence of iodine in salt but cannot accurately measure its concentration. According to the WYD, the median iodine concentration in salt in 2008 and 2013 was only 5.3 and 5.6 ppm, respectively. Additionally, in 2013 no single region had salt iodine levels above the international standard of ≥15 ppm. Only Malaysia, Vanuatu, Tuvalu, and DPRK have lower coverage of adequately iodized salt in the East Asia and Pacific Region, and none of these four countries has a mandatory salt iodization law. This lack of improvement in iodized salt coverage has occurred despite significant action by the TWG and the support of the UNICEF-GAIN USI Partnership Project between 2008 and 2013.

A closer look at the sub-national data collected as part of the NNS 2013 additionally has revealed that salt iodine levels were higher in wealthier households, in urban areas, in salt purchased from supermarkets and grocery stores, and in pre-packaged and labeled salt. A regression analysis identified that market source was the most significant predictor of iodine levels in household salt. It also identified lower price as one of the reasons why non-iodized salt may be more popular than iodized. These results are concerning, as they suggest that poorer households in rural areas may be disproportionately at risk of IDD.

Voices of dissent from food processors

In the Philippines, an estimated 40% of salt is consumed through processed foods rather than directly as table/kitchen salt (4). The 2008 NNS reported that at least five food products consumed by the highest percentage of households were processed. These were bread, soy sauce, instant noodles, crackers, and canned sardines (2). The trend in the sales of packaged food (such as dried processed food, canned/preserved food, dairy, bakery, frozen processed food, noodles) is increasing. A recent survey of food processors showed that 11 large food producers, collectively responsible for the production of 13 brands of the targeted products, were aware of the ASIN law, and
used iodized salt in their production lines for at least some of the most consumed products (2, 5).

**Key role of political commitment**
National program management, coordination, and collaboration are reported by all stakeholders to be significantly improved as a result of the TWG. Through the Strategic Plan and regular meetings to review progress and discuss future activities, the TWG has served to support the implementation of the NSIP, improved program coordination, and has created a forum for multi-sectoral collaboration including between the private and public sectors. However, some key TWG stakeholders have not fulfilled their responsibility, notably the Food and Drug Administration, whose role is to enforce standards for iodized salt and monitor compliance. Overall, it seems that what is a comprehensive and well-considered national strategy is being constrained by poor implementation of one of its key components: regulatory monitoring and enforcement of industry compliance with the national salt standards.

**Regional taskforces (Bantay Asin)**
In recent years, greater attention has been given to sub-national implementation, in light of the implementation impasse at the national level. A primary activity has been the creation of the regional/provincial Bantay Asin Task Forces (BATF or salt watchdogs) to implement the NSIP. BATFs currently operate in 14 of the 17 regions, but the success of each task force relies largely on the motivation and commitment of key individuals, including regional FDA offices, as sector guidance and instruction is not available from the central level.

In view of constraints in implementation of the ‘main strategy’ of the NSIP, stakeholders of the TWG have identified innovative complementary initiatives such as working with a major supermarket chain to demand only adequately iodized salt and advocating with a group of municipal mayors to implement a 1,000-day package of interventions for child health and nutrition, including salt iodization. Goiter Awareness Week is observed in January each year and is an opportunity to run local awareness campaigns and promotional activities.

**Revising the Strategic Plan**
A workshop to review the NSIP Strategic Plan before the 2018-2022 cycle is implemented was held on 28-29 November 2017 in Manila under the auspices of the National Nutrition Council of the Department of Health, with representatives from the salt industry, UNICEF, and the Iodine Global Network.

Based on the status quo, it was suggested that the goal of the Strategic Plan should be changed from “Elimination of IDD in the Philippines” to “Achieving universal salt iodization (USB)” to shift the focus toward enforcing and sustaining salt iodization and closing the gap between iodine intakes and access to adequately iodized salt. A new target was suggested: to increase the percentage of households using adequately iodized salt from 25.7% to 50% by 2022. At the same time, it was agreed that there may be a need to provide iodized oil capsules to pregnant and lactating women to mitigate their greater risk of IDD.

The workshop re-emphasized that more effort is necessary to support the ASIN law enforcement at the local and regional levels. Local government units (LGUs), which exist in all provinces, cities, and municipalities, are responsible for issuing local ordinances, monitoring the presence of iodine in all local salt, maintaining a list of salt producers, importers, and distributors, and allocating budget for implementation of the ASIN law. The review meeting proposed to focus on raising the awareness among the LGUs of their responsibilities and helping increase their enforcement capacity.

The workshop proposed to develop implementation tools which are lacking (e.g., guidelines, provision of WYD kits and reagents, monitoring checklist) to help local salt producers and food processors improve their compliance.

To support these activities, the workshop devised a communication plan targeting local implementers and producers to raise awareness of the benefits of iodized salt to population health, and help dispel myths about iodized salt (i.e., that it affects sensory or physical properties of foods or that iodization is not compatible with sodium reduction efforts), which together with strengthened enforcement may help lower the barriers to achieving adequate levels of salt iodization.

**References**
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