iodine villages thrive across Thailand
Thailand first launched its National IDD Elimination Program in 1989. A National Committee for IDD Control was established two years later, and it has been presided over by Her Royal Highness Princess Maha Chakri Sirindhorn. The Ministry of Public Health together with collaborating agencies spearheaded the implementation of effective strategies to prevent and control IDD, with a focus on universal salt iodization (USI).

To track the country’s progress towards IDD elimination, regular monitoring has included measuring iodine levels in iodized salt at the point of production, distribution, and in the household, and urinary iodine concentration (UIC) in pregnant women.

All salt should be adequately iodized
Since the launch of the program, the government has encouraged salt producers to supply adequately iodized salt. The first ministerial mandate, issued in 1994, specified that iodine should be added to edible salt at a minimum of 30 mg per kg. In 2010, it was revised to include all salt for human and animal consumption, and the iodization range was changed to 20–40 mg/kg. To broaden the reach of the iodization program, additional regulations were issued for fish sauce, salt brine, and seasoning products made from soy beans. These salty condiments must contain iodine at 2–3 mg per liter, or they must use iodized salt in production. There are 281 iodized salt production sites including five large, 51 medium, and 225 small enterprises. Government subsidies have provided 100 iodine mixing machines to the smaller plants. Of these, 30 machines have a production capacity of 150 kg per batch, and 70 machines have a capacity of 40 kg per batch. A report from the Thai Food and Drug Administration (FDA) has shown that 77.4% of food products available on the market contain iodized salt.

Additional IDD prevention measures
The Ministry of Public Health has strongly emphasized the need to provide iodine supplements to pregnant and lactating women, to meet their higher daily requirement of 250 µg, and to ensure adequate iodine supply to the fetus and newborn infant. An oral capsule supplement (Triferdine) containing 150 µg of iodine, 400 µg of folic acid, and 60 mg of iron is produced by Government Pharmaceutical Organizations (GPOs) and covers 800,000 newborns each year.

In a number of remote areas, where access to iodized salt is limited, iodized drinking water is provided to children across 733 schools. Adding 2 drops of concentrated iodine solution to 10 L of drinking water will provide 40 µg of iodine per glass. Two to three glasses of water per day can provide enough iodine (90 to 120 µg) to meet the daily requirement of that age group.

Reaching optimal iodine nutrition
In 2014, the median urinary iodine (UIC) was 155.7 µg/L in pregnant women, 234.6 µg/L in children aged 3–5 years, and 111.3 µg/L in the elderly, which shows that all three population groups had adequate iodine intakes, and that the success of the IDD program has been maintained. Household coverage of iodized salt was 91.6%, of which 83.5% was adequately iodized (20–40 ppm). A Department of Health’s survey in January 2015 reported that the proportion of pregnant women taking iodine supplements was 94.6%, and 83.6% of the women reported taking the supplement regularly.

Raising an iodine-sufficient generation takes a village
Aware of the importance of household coverage and program sustainability, Thailand has encouraged the initiative to create “Iodine Villages”. The policy initiative came from the Public Health Minister Prof. Dr. Rajata Rajatanavin, made possible by integrating the IDD program with the Family Care Team (FCT) to create a link between the central healthcare administration and the communities. More than one million village health volunteers throughout the country have been appointed as Iodine Ambassadors. Their role includes disseminating information about the benefits of iodized salt and monitoring of household iodized salt coverage. To qualify as an iodine community, four criteria must be met: i) IDD prevention and control policies

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and measures must be in place, ii) community leaders and members must be aware of the best practices to prevent and control IDD, iii) the community must conduct surveillance of household coverage of iodized salt, and iv) pregnant women must receive iodine supplements. In 2015, data collected from 44 provinces showed that 52,171 out of 52,531 (99.3%) villages took part in the process to qualify as an iodine community. Of these, 42,665 (81.8%) villages were approved. The target is for 100% of Thai villages to become “Iodine Villages” by 2017.

In 2015, Thailand celebrates the 60th birthday of HRH Princess Maha Chakri Sirindhorn, who has been a tireless advocate for adequate nutrition. To mark this occasion, on 25–26 June this year the Ministry of Public Health held a meeting devoted to Iodine Villages across Thailand and overcoming the challenges to sustainability. In his opening speech, the Minister of Public Health discussed the policy on Sustainable Elimination of IDD. One of the invited guest speakers was Ms. Karen Codling, IGN’s Regional Co-coordinator for South-East Asia, who presented an overview of the IDD prevention and control programs and the current iodine situation across the region (see photo below). Dr. Bounthom Phengdy from the Ministry of Health, Lao PDR, with Dr. Napaphan Viriyautsahakul, Director of Bureau of Nutrition, Department of Health, Thailand, gave a speech on the “Experiences of Prevention and Control of IDD”. The meeting was an opportunity for salt producers and local health workers to exchange their experiences on quality, accessibility, and coverage of iodized salt across the country and the implementation of the Iodine Village initiative across the country.

Key ingredients of Thailand’s successful IDD prevention and control
- Political commitment to the sustainable elimination of IDD
- Integration of iodine supplementation for pregnant and breastfeeding women with ante-natal and well-child care
- IDD surveillance in risk groups: pregnant women, pre-school children (3–5 years old), and the elderly
- Collaboration with local administration

Constraints to overcome
- Weak enforcement of USI legislation and non-compliance by salt producers
- Presence of non-iodized salt in the market from small-scale salt producers

Future plans
To ensure that the successful elimination of IDD is sustained in the future, the following steps have been proposed:
1. Set up an iodized salt monitoring system to be overseen by a National Committee, with systematic quality monitoring at the production, distribution, and household levels, and appoint the responsible Ministry.
2. Continue IDD surveillance:
   • Monitor the median urinary iodine levels in the groups at risk: pregnant women, and children aged 3–5 years. Monitor in parallel with the household coverage of iodized salt.
   • Strengthen the quality assurance system at the production level.
3. Monitor the provision of iodine supplements for pregnant women.
4. Support local administration, and community members and leaders to move towards 100% of “Iodine Villages”.
5. Build capacity of the iodized salt producers organizations.
6. Strengthen coordination of IEC activities by establishing a single database of all IDD surveillance data, including urinary iodine, salt iodine, and neonatal TSH.

In celebration of Her Royal Highness Princess Maha Chakri Sirindhorn’s 60th birthday, the Department of Health awarded the Princess Health Award to five recipients, including Dr. Michael B. Zimmermann, Chair of the Iodine Global Network, for his dedication to the IDD Control Program in Thailand. Dr. Zimmermann also paid a visit to an Iodine Village community in Phetchaburi province, recognizing the inter-sectorial efforts of the local government officers to sustainably drive the elimination of IDD.