Reinvigorating Madagascar's USI program

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Background

Madagascar, an island nation off the coast of southeast Africa, has population of ca. 22 million, of which 41% are aged less than 15 years. 92% of the population lives on less than US$2 per day and stunting affects more than 40% of children. In addition, the country is frequently hit by natural hazards such as cyclones and floods. The island is also historically iodine deficient. The total goiter rate among 6-12 year old children decreased after the launch of the IDD control project in Madagascar in 1995, falling from 45% in 1992 to 6% in 2001 (sentinel sites) and 3.4% in 2004 (DHS). Older regional studies reported that the median urinary iodine concentration (UIC) was 70 µg/l in 1995 and 157 µg/l in 1998. Unfortunately, monitoring of the iodine status of the population faltered, and no major iodine survey has been done for the last 16 years.

Household coverage with iodized salt

The use of iodized salt in Madagascar varies regionally with more than 90% of households using iodized salt in the northern region, 80-90% of households using iodized salt in the northwest and mid-east regions, 20-80% in the central region and less than 20% in the southern regions. The 2008/09 DHS used rapid test kits for testing household level salt samples. The data showed that 75% of households use iodized salt and 50% use adequately iodized salt that has levels of iodine above the minimum required level of 15ppm. These data need to be interpreted with caution because of the limited sensitivity of test kits. The use of iodized salt is more common in urban (72%) than rural (49%) areas with wide variations between regions. Only 32% of poor households have access to iodized salt while 73% of the rich households have access. The presence of iodized salt is particularly low in the central highlands and southern regions, where small-scale salt producers are operating.

National committee and legislation

The National Nutrition Unit of the Ministry of Health manages the IDD program. A control strategy on USI was launched in 1995. The following decrees were issued from 1994 -1996 to make the iodization of salt a legal obligation:

- Décret No 95-587 du 05 Septembre 1995 adopting a national strategy on combating IDD; requires all salt to be iodized; including salt for animals; for sacks of 25kg to 60 kg, iodine should be at 50 ppm and for salt packaging of 250 grams, the rate of iodine should be at 30-50 ppm before leaving the factory.
- Arrêté Interministériel No 0499/96 du 06 Février 1996 describes enforcement mechanisms for the above-mentioned decree;
- Arrêté Interministériel No 2413/94 du 02 Juin 1994 defining the national norms for salt iodisation.

A national coalition had been established in the 1990's including the relevant ministries (Health, Commerce, Agriculture, Scientific Research, Interior and Justice), multilateral partners (UNICEF, WHO, USAID, the World Bank) and salt producers, under the leadership of the Ministry of Health.

But because of political unrest over the past decade, no formal institutional coordinating body was active until July 2013 when the committee for the elimination of iodine deficiencies was re-activated under the coordination of the National Nutrition Office.

Salt industry

In Madagascar, local production of salt is sufficient for nationwide consumption. La Compagnie Salinière de Madagascar (Madagascar Salt Company) located in the northern region produces about 40-50% of total local salt. In 2006, the Compagnie Salinière produced at its full capacity of 70,000 tonnes/year, using industrial iodization processes. A large proportion of this salt is exported to neighbouring countries. Some 30-35% of salt in Madagascar is supplied by four medium-size enterprises located in the mid-western region, who may no longer be adequately iodizing salt. Multiple small producers, about 30 in total, in the south provide the remaining 20-25% of salt, that is usually not iodized. About 5% of salt production takes place, also on a small and informal scale, in the southern lakes region. Daily per capita salt consumption is 8.2 g calculated from supply estimates.

Salt in Madagascar is not only iodized but also fortified with fluoride. A common salt iodization and fluoridisation logo is used by all industrial companies. The packaging of industrial salt does feature the fortification (using the national logo), but does not emphasize the health benefits of consuming only iodized salt. Only the packaging of CoReSEL, a factory with salt iodization and fluoridation capacity created with UNICEF and World Bank's support in 2005, features the health benefits of iodized and fluoridated salt.

Despite existing national legislation, the present political instability in Madagascar has significantly hampered enforcement of legislation, therefore there is no functioning system of licensing for salt producers. In the southern part of the country, where salt production is mainly informal and not institutionalized, quality control is rare and difficult to perform.

Seven governmental sentinel salt laboratories and one central Department of Health laboratory in Antananarivo were previously operating. The regional laboratories have ceased operation because of a lack of funding and the central laboratory continues to analyse salt collected from markets mainly in the northern region where the coverage of iodized salt appears to be good. UIC surveillance efforts have ceased early in the 2000's.

Growth and development of Malagasy children will benefit from strengthened USI

2013 workshops on iodized salt and salt reduction alignment and planning a national survey

Pieter Jooste, the ICCIDD Global Network Regional Coordinator for Southern Africa, recently visited Madagascar and met with Dr Simeon Nanama and Amal Tucker Brown of UNICEF Madagascar and Juliawati Untoro of UNICEF ESARO. An additional threat to the national IDD control program is misperceptions among health professionals on iodine: a recent rapid evaluation conducted by UNICEF Madagascar found 37% of health professionals attributed the iodine in iodised salt to hypertension. During the visit, the Department of Health and UNICEF organized two workshops related to USI. In the first workshop a national UIC survey was planned and in the second workshop for health professionals, the issue of iodized salt, reduction of salt intake and hypertension was debated. In the first workshop, after debating the objectives, limitations in funding, laboratory capacity and logistics available in Madagascar, it was agreed that a national survey should be undertaken in 2014 to measure the iodine content of household salt and of drinking water, and the UIC in school-aged children and in pregnant women.

In the second workshop, several local speakers covered the main topics in this field and an endocrinologist made the point that iodine has no effect on hypertension. A clinical psychologist used data from local studies showing the effect of iodine deficiency on mental function and physical growth. On the second day four working groups debated the important points of a national salt iodization program and adopted a consensus statement of the compatibility of the policy on salt iodization and the policy on reduction of salt intake. This document was then sent to all relevant governmental departments and to other role players for further comments and finalization.

Plan of action

High priority steps need to be taken to revitalize the USI program. These are:

1. The National Nutrition Office need to adopt a consensus that the salt iodization program is of utmost importance for the development of the future generation. High level advocacy and communication will be instrumental to refocusing attention and resources on this program.
2. The Department of Health and UNICEF Madagascar should be given all the support necessary for planning and executing the national iodine survey in 2014. A specific strategy should therefore be considered to reach those with low household coverage of iodized salt, particularly in the South.
3. The central and regional sentinel salt laboratories need to be upgraded to routinely analyze iodine in salt from producers and markets.
4. A register of salt producers needs to be established to promote bidirectional communication with the health authorities. Salt producers should be acknowledged as one of the primary players in the salt iodization program in order to strengthen their commitment towards salt iodization.