Briefing Note for the Federal Ministry of Health: Improving Salt Iodization quality and coverage in Ethiopia.

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Purpose:

The purpose of this briefing note is to present options to improve the quality and coverage of salt iodization practice in the country.

Background:

Iodine is an essential micron-nutrient required for human growth and development. Iodine can't be synthesized in our body. In order to attain normal levels of thyroid hormone synthesis, an adequate supply of iodine is essential (1,2). The daily recommended minimum intake of iodine for adult is 150μg (1,3). Insufficient daily iodine consumption causes a range of functional and developmental abnormalities collectively known as Iodine Deficiency Disorders (IDD) (3). IDD refers to all the ill-effects of iodine deficiency including cretinism, goiter, reproductive failures such as abortions, congenital abnormalities and stillbirths, mental retardation and impaired mental function (4,5). Studies showed that both insufficient and excessive iodine intake are associated with an increased risk of thyroid disorders (6).

Current Situation:

A recent national micronutrient survey done by Ethiopian Public Health Institute (EPHI), showed that the percentage of households with access to adequately iodized salt was very low estimated at 26%. Besides the median urinary iodine concentration analysis indicated that only 54.2% of school age children and less than half of reproductive age women had adequate iodine intake during the survey (7).

In 2014 a review study on iodine deficiency prevalence showed that more than 50,000 Ethiopian women leads to still births annually as a consequences of severe iodine deficiency (8). The 2016 national average goiter rate among reproductive age women was 10.8% as high as 28% observed in Benshangule Gomuz (7). This implies that the goiter prevalence rate remains as significant public health importance(at a rate of greater than 5%) (9).

Low dietary intake, poor quality of salt iodizing and low iodized salt consumption were the leading causes for iodine deficiency (8). A recent iodometric titration test from the source[Afdera] done by food science laboratory at EPHI showed that the quality of salt iodization varies from below detection limit to 100ppm (10), while the normal range is 20ppm to 40ppm as iodine form (3). This poor quality of salt iodization was because of the iodinating process was made manually by knapsack which is inefficient in producing adequately iodized salt to meet the mandatory standard.

Challenges with the current salt iodization practice

- The current major salt iodization practice is Knapsack, which is manual spray of iodine(KOI3) to the salt. Through this it is difficult to maintain a fixed salt–iodine proportion to have adequately iodized salt. It is also labor intensive.
- Even the Knapsack salt iodization is not performed well due to the weak site control mechanism.
- Producers are enforced to produce with a limited quota and fixed price which means no market competition and no motivating factor to adequately iodize.
- The harsh environment with low living facilities worsens the problem of salt iodization.

Options:

Option 1: Introducing small scale salt iodizing machineries

- The advantage is this will create work opportunity for salt producer association and it can be immediately applied.
- As limitation it needs strong monitoring and evaluation to satisfy an optimamum quality of iodized salt.

Option 2: Building a Centralized iodized salt production plant.

- The advantage is that it produces adequate amount and effectively iodized salt. It is also easy for monitoring and quality assurance.
- As a limitation it requires huge capital, and continuous water and electric supplies.

Option 3: Establish modern and effective market system

- This option in combination with the above options helps to achieve universal access for adequately iodized salt through sustainable and effective market system.

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