Micronutrient Initiative

Universal Salt Iodisation in Africa: *Road to overcoming the last hurdles*

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Solutions for hidden hunger

Universal Salt Iodisation in Africa

The road to overcoming the last hurdles

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Review

Over 330 million people remain at continued risk of Iodine Deficiency Disorders (IDD) in Africa. The spectrum of Iodine Deficiency Disorders including cognitive and mental impairment can be prevented by sufficient intake of iodine through the diet. Iodisation of salt has been proven to be the most effective strategy to provide populations with iodine and prevent IDD. **Iodizing all salt can prevent more than 12 million cases of mental impairment in infants annually.**

Children playing, Mpwapwa, Tanzania
R. Yusufali, MI Africa 2005

It is reported that 66% of African households consume adequately iodized salt, but this hides significant disparities. At the country and community levels, the number of people consuming adequately iodized salt range s from 2% to 98%. 260 million people in Africa have insufficient iodine intake resulting in iodine deficiency rates which are associated with a 10% to 15% lowering of the average intellectual capacity. These statistics only show the tip of the iceberg, it is postulated that **iodine deficiency disorders will negatively influence achievement of 5 out of the 7 millennium development goals** by developing nations.

In spite of many successes, it is clear that more needs to be done to achieve Universal Salt Iodisation (USI) in Africa. Progress in this area has stalled over the last decade and the causes and bottlenecks have to be analyzed in order to address these remaining challenges. The strategies and approach used to achieve success with USI programs so far may also need to be reviewed and adapted accordingly.

In an effort to identify key gaps that are limiting progress towards achievement of USI, the Micronutrient Initiative, commissioned a series of salt assessments in 2005.[1] These assessments were conducted in 10 main salt producing countries in Africa: Ghana, Senegal, Ethiopia, Mozambique, Angola, South Africa, Namibia, Botswana, Tanzania, and Sudan. The salt produced in these countries has a wide reach and potential to make the greatest impact on coverage of iodized salt.

[1] The Micronutrient Initiative (MI) acknowledges the contributions and cooperation of CIDA, UNICEF, Government Agencies, WFP and the Salt Industry in all the countries the Assessments were conducted and the tireless efforts of MI staff and consultants involved with the missions.

The main aim of the assessment missions was to map the flow of salt across the sub-continent and to identify key bottlenecks and challenges which have prevented achievement of USI so that they can inform strategies to accelerate progress. These findings are also guiding MI's ongoing work on Universal Salt Iodization, including a new partnership with the World Food Programme. This new partnership aims to strengthen local salt producers' ability to iodize salt in 6 countries where iodine deficiency rates are high including the African countries Sudan, Ghana, and Senegal. The six countries of focus are home to over 40 percent of the world's population not yet protected against iodine deficiency.

The main issues uncovered and a summary of the mapping and assessment missions are presented here starting with an analysis of the salt supply across the Sub-Saharan region.

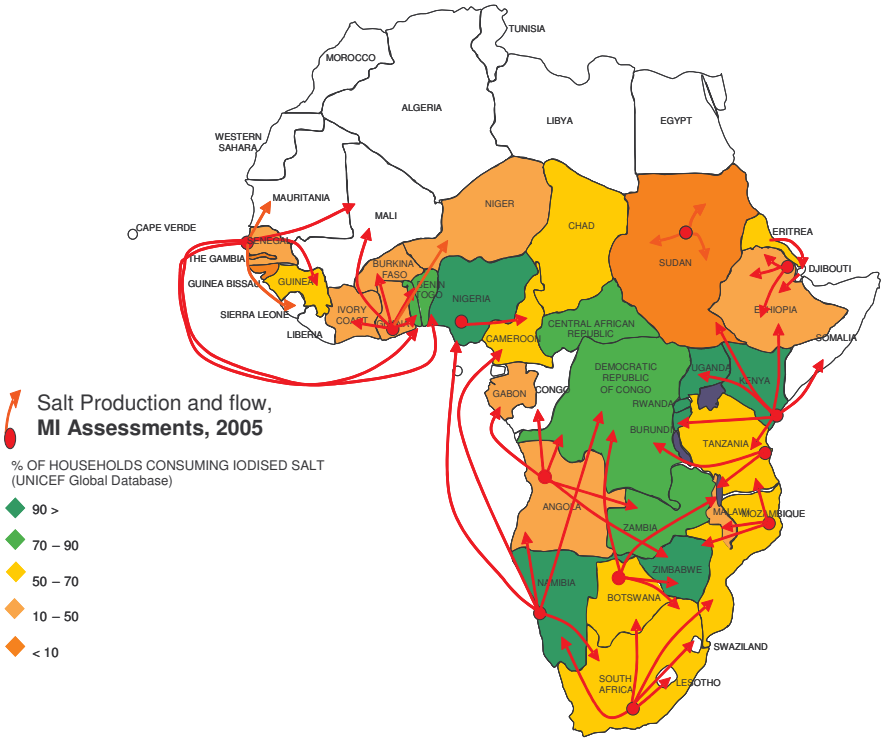
We need to work with large, medium and small producers across the region to ensure that all salt for human and animal consumption is effectively iodised. Salt exporters and importers should accept iodised salt as the only norm. Leakages of non iodised salt across markets and border need to be plugged.

Venkatesh Mannar, President, Micronutrient Initiative

Salt Supply across Sub Saharan Africa

The map below shows the main sources and the flow pattern of salt across Africa overlapped with the proportion of households consuming iodized salt (coverage). Comparison of the two layers in the figure clearly illustrates that the salt supply and proportion of salt that is iodised by supplying countries has a direct correlation with households consuming iodised salt.

The diagram provides a compelling argument of why we should target salt iodisation programmes in countries that produce salt in order to meet and sustain USI goals. Although a wide range of factors contribute to low iodized salt coverage, supply and therefore availability of iodised salt was found to be a key factor needing attention.



Country	**Proportion of total salt produced that is iodised*
Angola	30-50%
Botswana	>80%
Ethiopia	<5%
Ghana	30-50%
Kenya	>95%
Mozambique	20-40%
Namibia	>80%
Senegal	30-50%
South Africa	50-70%
Sudan	<2%
Tanzania	40-60%

* Estimates from MI Assessment Missions 2005

Targeting salt producing countries would enable better use of resources

- Resources will not be wasted in non salt producing countries and monitoring and enforcement programs can also be streamlined to focus on fewer countries.
- Iodisation integrated into salt production would lead to increased supply and access to iodized salt by populations. This way, awareness-creation activities (demand) are complemented by availability (supply)

The analysis of the findings from the missions identified several bottlenecks that stall progress towards accelerating USI efforts. The mission findings are discussed below; they cover the identified bottlenecks and the proposed strategies which could be used to guide USI programs across Africa.

Salt Supply and Enhancing Production of Iodised Salt

The success of USI is influenced by ensuring the continuous availability of iodized salt. Sustained iodized salt production and supply will result in higher coverage of iodized salt and potentially prevent **more than 12 million cases of mental impairment in infants annually.**

The Salt Trade: how it works…

The larger producers are able to supply salt in larger quantities and on a regular basis as they can produce and distribute their salt at a lower cost. They also have access to formal transportation routes to export bulk quantities of salt to other countries. This makes the price of their salt more competitive than that produced by subsistence producers. This has a tendency to leave the smaller producers with the only option of competing in localized markets or find ways to cut costs in order to remain competitive. Unfortunately the decision to not iodize salt is frequently the easiest option for small producers to cut costs and remain competitive.

In countries with many small scale salt producers such as Senegal, Ghana and Mozambique, traders normally form a critical link and can be either an opportunity or a major bottleneck. Small producers typically will not have access to finance or capital preventing them from integrating iodisation into their business and participating in markets where their product is valued better. In such situations, traders who have access to these markets and capital are placed in a stronger position to set prices and apply pressure on smaller producers to reduce their margins. This drives small scale producers to cut costs and impedes growth and reinvestment into the business. This usually comes at the expense of iodisation, especially where enforcement of iodisation is weak.

Salt Iodisation programs will have to include support beyond adding iodine to salt, provision of equipment and potassium iodate and social awareness campaigns in order to address the remaining challenges with USI. The support will have to include innovative business solutions, improving access to markets, micro-financing and improvement in overall productivity and efficiency within the industry.

Appropriate Salt Iodisation Technology

From a purely technical point of view, integrating iodisation into salt production requires two additional components; iodisation equipment and potassium iodate. Although there has been extensive equipment donation and potassium iodate provision to accelerate USI programs, examples of such support not being effective outnumber where it was effective. Some of the key lessons learnt in each area are discussed below:

Equipment: It is critical that appropriate iodisation equipment and technology is applied. Equipment that is seen in the field is frequently sitting idle, rusted or scavenged for parts. These units were not used because they were not designed for the capacity of the salt works and did not take into account the movement and handling of salt within the salt facility.

One size fits all' units in any process industry do not work and closer attention has to be paid in designing and providing equipment so that it integrates with the operations and does not result in the salt producers having to bear excessive costs and undertake extra handling of salt.

Iodisation unit remaining idle for more than a year, Senegal *S. Jayapal, MI 2004*

Salt producer applying simple machinery for iodisation, Ghana *R. Yusufali, MI 2005*

Other observations were that equipment support was not backed up by on site training in the use and maintenance of the equipment, and there was a lack of spares and parts for regular service and of follow-up support. In a few cases, equipment support has also included cement mixers and drum mixers, these units are not designed for use with salt and corrode quickly or require too much effort in iodizing salt in terms of excessive handling.

Potassium iodate: Potassium iodate is commonly used as a fortificant for salt iodisation. Free or subsidized provision of potassium iodate may in some cases be the only immediate solution. Small producers may not have the cash flow to procure potassium iodate and would typically have to import since it is only produced in a handful of countries. The main issue that needs to be addressed however is access to potassium iodate within close proximity to salt producers and in smaller quantities. USI programs will have to address this together with overall profitability and effective enforcement in order to ensure that salt producers sustain iodisation when subsidies are removed.

Smaller Producers - the important link

Small producers who form collectives are more likely to make their business more profitable. Collectives are able to produce higher volumes of salt and take advantage of economies of scale, and they can absorb price deviations and cope with variations in market trends better compared to small individual salt producers. As a group they have a better chance of expanding their market access and receiving support from donors and other developmental agencies which can gear them for potential sustainable growth and commercially viability.

This will be achieved when the salt producers are equipped and supported with business development skills which can be introduced through effective training and facilitating access regular or continuous support.

Business services training offered can cover a range of topics including microfinance, branding to differentiate between iodized salt and low quality non iodized salt, proper packaging and labeling (currently uncommon) all of which can have an impact on the final selling price and hence profitability.

Group of women filling salt, Matola, Mozambique *Claire Sita, MI 2006*

Policy Change and Effective Enforcement

One of the biggest challenges in salt producing countries is that more resources need to be allocated towards improving infrastructure (accessible roads and transport). The growth and profitability of the salt industry is highly dependent on the available infrastructure and salt iodisation is more sustainable when the salt industry itself is operating in a sustainable environment. Investment in iodisation equipment and potassium iodate (fortificant) is more likely to be used effectively and compliance is also more likely to be high when the industry is competitive and productive. This is one of the main common traits in countries that have achieved USI around the world.

It is recognized that Regional barriers to trade also impede on potential growth in the salt industry. These require attention and need to be addressed; this is especially seen in West Africa where the trade between Anglophone and Francophone countries is restricted through economic policies and therefore limits the marketability of salt being produced in Senegal and Ghana and in fact fuels import from sources that are remote and more costly such as Brazil and Namibia.

Governments need to agree on standard iodine levels for salt iodisation. Common standards can promote salt import and export relations between countries and also simplify monitoring of salt iodisation.

The taxes and duties levied on the salt industry and not necessarily iodine or iodisation equipment in many African countries are choking the industry. Although such policies bring in revenue for Governments, the longer term returns both from an economic and social perspective are negative. This is because it contributes to poor sales of salt since the prices are not competitive in the international market, prevents growth and expansion within the industry, lowers production and inhibits job creation. All these reduce potential revenue for Governments. From a development standpoint, poor performance with prevention of IDD has been well documented to contribute towards reduced GDP, increased burden on healthcare systems and is linked to 5 of the 8 millennium development goals.

Aggressive political advocacy and commitment from Government is required to fuel progress. This has to include a commitment from Government in creating a better environment for the salt industry. This would also encourage support from developmental programmes like the World Bank and other regional banks. These partnerships can bring the required investment in infrastructure development.

It can be done…

The assessment findings indicate that production bottlenecks have limited progress towards USI and if adequately tackled, improvement in iodized salt coverage can be expected. Investment in improving supply of iodized salt has a potential to have the greatest impact on USI and needs to be prioritized and monitored. Progress in this area can be accelerated if supported by a more favorable investment environment within the salt industry, effective enforcement of salt iodisation legislation and development of innovative solutions addressing the problems faced primarily by the medium and small scale segment of the industry.

"With a sustained effort and innovation to reach those that have not yet been reached, salt iodisation can become a universal and permanent solution to a problem that has limited the progress and potential of a significant proportion of humanity"

Venkatesh Mannar, President, Micronutrient Initiative