UAE Market May Hamper Universal salt Iodization

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1.1 IODINE DEFICIENCY AND THE NEED FOR UNIVERSAL SALT IODINATION IN THE REGION

According to WHO (1993) 1500 million people world wide are estimated to be at risk of iodine deficiency disorders, which is a serious Public health problem in 118 countries. Universal salt Iodination, fortification of all salt for human and animal consumption, has been endorsed as a cost effective public health measure to counter this problem. IDD affects almost 17 countries in the Eastern Mediterranean Region. Most of them now have IDD control programs and the progress towards achieving USI has been substantial over the last decade. However, in few countries in the region, the lack of political will and other environmental forces remain an obstacle against launching IDD programs in the region. The United Arab Emirates is an example of a country, which till date has made no attempt to impose serious legislation or regulatory activities in supporting an effective monitoring of salt and implementing an IDD program.

The importance of the United Arab Emirates in controlling iodinated salt in the region stems from the fact that UAE is considered one of the largest markets in the area. It is free and linked to the rest of the world through a fully developed infrastructure. The harbor with more than 200 berths makes the Emirates a leading transshipment center, allowing goods including salt to flow freely to the neighboring countries especially to Oman, Qatar, Bahrain and Iraq without any customs duties restrictions or control. It was until the middle seventies the entire UAE was deficient in salt, requiring sizable imports from Iran, India and Europe. Over the last decade the demand for salt has significantly increased. This was due to the huge expansion in oil industry and the growth in population and the food processing industry. Moreover, the open market strategy with free customs duties procedures has made it possible to import non iodized salt easily into UAE and from there all over Middle East and Africa. As such many countries within the UAE natural market zones are affected to some extent by the import of non-iodized salt. Oman is an example of a country with strict USI legislation but badly suffering of non iodized salt infiltration to the country throughout the joint boarders (see Table 1).

To examine the Iodized salt market in UAE, we conducted a full three weeks survey in the main entries of the country with objectives to:

1. Find out the extent of iodinated salt available in UAE market.
2. Visit UAE main entries and determine levels of iodine content of salt imported into the country, and identify sources of the imported salt.
3. Examine quality, type and price of salt.
4. Study the effect of UAE market on IDD programs in the region.

1.2 THE STUDY METHODS

To evaluate the situation we used the monitoring indicators for assessing Iodine Deficiency Disorders and their control through salt iodization, as recommended by WHO/ UNICEF/ ICCIDD. Of the seven countries forming UAE, the survey covered only four. These were Dubai, Sharjah, Ajman, and RAS El Khaimah. Information was collected from various sources, particularly from port authorities, chamber of commerce, food processing companies and wholesale stores. The information collected was related to quantity of salt imported into country, the iodine content of salt and the product major uses and prices.

Lot Quality Assurance Sampling (LQAS) methodology for monitoring salt was used to determine the proportion of salt samples in a lot that contains sufficient iodine (Pa), and to determine the proportion of samples of salt in a lot that contains insufficient Iodine (Po).

A sample size table for monitoring salt at importation as described in Monitoring Universal salt Iodination programs Manual (UNICEF/ PAMM/ WHO/ ICCIDD) was used to assure that adequately iodized salt will have a small probability

of failing the test. We have assumed that by regulations at least 80% of the salt must be adequately iodized when it enters the country. Samples of salt were randomly selected through out the lot during the offloading period.
Hundred and twenty samples were examined using semi quantitative rapid test kits. The samples that were iodine positive were re-examined using titration methodology to determine exact content of iodine.

1.3 RESULTS AND DISCUSSION

According to UAE Port Authorities over 400000 metric tons of salt is imported yearly into UAE of which circa 80% are re – exported to Gulf countries and Africa. Table 2 shows that Kenya imported more than 165000 Mt. of salt through UAE, followed by Djibouti, Ethiopia and Tanzania. We were able to examine 56 ships, boats and tugs, and found that the sources of import were mainly Iran and India. The grades of salt imported varied between semi refined, coarse rock and marine salt. Rock salt was mainly from Iran while the majority of marine salt comes from India. The package size of individual units was 25 and 50 kg. Normally, poor packaging was used (second hand polypropylene).
Fifty percent of samples was collected from Dubai terminals, 25% was from Sharjah, and 25% from Ajman and RAS Elkhimah (see Table 3).
All samples were examined using semiquantitative rapid test kits and it was found that nearly 88% of samples were iodine negative The positive samples were re-examined using titration methodology and were found to contain less than 10 ppm iodine, clearly indicating inconsistency during iodization at production (see table 4).
Five samples were further analyzed to examine the quality of salt imported into UAE. The results shown in table 5 indicate that none of the samples meet the standard of food grade salt due to impurities and iodine content. Some samples were found to contain even insoluble impurities such as SiO_2 and anhydrite ($CaSO_4$). These analyses indicated that the salt was not subjected to proper washing and refining. This also justifies the low price of the imported salt. Our research and survey was extended to include the major distribution channels for salt within the country from importation points through wholesale centers to retail outlets. It also included the marketing channels and systems, selling units and current prices. We found that most of the imported salt is sold through marketing intermediaries. All wholesalers in UAE are considered middlemen who resell imported salt to foodstuff wholesalers and also to re-exporters who export a substantial portion to the neighborhoods. The local packagers buy their salt from main salt importers in the country and re-pack the salt in small units, mainly cardboard boxes of 1 kg. The local packagers reach their diverse target markets through several marketing channels simultaneously, with each channel involving a different group of intermediaries. The salt is sold to supermarkets through grocery wholesalers, or in some cases directly to the public and end users, such as school canteens, hospitals, military camps, hotels and labor compounds. We were able to identify more than 78 brands of salt produced by local packagers. Of these brands less than 30% was found to contain some iodine. It was observed imitation and fraud was common practice. These practices take many forms such as changing letters in the name of the product i.e. Neza, Neoza.etc. Table 6 and Table 7 give some examples of imitated salt brands and their prices.
Despite the achievements, the success and the measurable progress that has been achieved and continues to be made towards the sustainable elimination of IDD on a global level, the results of this research clearly indicate the following defective areas that need special attention.

1. Lack of political will and the others environmental forces, including legal, regulatory, societal and consumer-spending patterns still will remain a problem in UAE, and as a result IDD program has yet to be launched.
2. Weak or absent monitoring system. Salt is not regularly checked at the critical stages in the distribution network. And as such, non-iodized or inadequately iodized salt is easily seeping into markets and without adequate monitoring, legislation cannot be enforced.

Because legislation has not been passed, it is easy for unscrupulous or simply careless traders to take advantage of the situation and sell poor quality non-iodized salt.

1.4 RECOMMENDATIONS

Our survey has clearly demonstrated that IDD is underestimated in UAE and has not generally been

considered a significant problem. The survey carried out by UAE health authorities in 1994 demonstrated a goiter prevalence of 40% among children. The analysis of the salt market demonstrated that lack of legislation, education, and weak monitoring together with other market environmental forces have severely affected salt iodination strategy not only in the UAE but also in the areas where currently effective programs through salt iodination exist. The infiltration of non iodized salt into traditional and natural market zones of the UAE through the borders can limit the effectiveness of the programs in the region and create a type of undesirable fluctuation on iodine content of salt, making IDD programs only partially effective. Almost all countries in the region have enacted legislation on USI requiring iodine level between 20 – 100 mg/kg. If we assume that wholesalers in the region will entirely depend on import of poor quality low priced salt from UAE, aiming to gain quick profits by launching and promoting imitated salt brands, then we conclude that all efforts exerted to date in the region to correct the IDD situation are in vain.

The solution is feasible and affordable since effective and sustained elimination of IDD depends largely on the existence of IDD programs, proper legislation, education and successful monitoring and distribution of iodized salt. Based on these parameters, we recommend to convene a national workshop to bring together policy makers and planners in UAE with scientific experts in the field, the salt industry, the traders and officials of all concerned ministries to review IDD position and iodinated salt situation in the country and formulate a plan of action for initiating control measures. It is equally important the changes of the prevailing situation in UAE must reach throughout the salt chain – the importers, packagers, wholesalers and retailers to ensure good quality iodized salt in the people diet. We further recommend formation of permanent and active regional/ national /NOGS committee and specialized reference laboratory in the UAE to have direct supervision and control on imports of salts, routes, sources, and distribution network and maintain specific, identity and budget for IDD and iodinated salt control. It is absolutely essential formation of a regional /national intersectoral body and a communication and advocacy strategy to generate a high level of awareness and achieve sustainability. Finally the festivals, exhibitions, seminars held regularly as apart of promoting UAE globally, attended by millions of people from all over the world should be utilized to create a full circle of communication to sustain political will, stimulate demand for iodinated salt and create healthy salt marketing environment that can be sustained for ever.

Table 1 :UAE Re export of salt to the neighboring countries

Country	Bahrain	Kuwait	Oman	Qatar	Saudia	Iraq
Quantity per ton per year	9500	12000	23000	8300	5000	27000

Table 2: Re Export of salt to African countries (1993)

Country	Kenya	Djibouti	Ethiopia	Tanzania
Quantity/mt/yr	165000	83400	64000	88000

Table 3: Distribution and coverage of samples

Entry points	No.s of ships examined	Raw Salt tons	Semi refined salt/tons	No samples semiref.	No.s samples coarse	Total samples
Dubai	6	22000	24000	42	18	60
Sharjah	21	7000	16000	20	10	30
Ajman	16	6000	11000	6	9	15
Ras El Khaima	13	3000	5000	7	8	15
Total	56	38000	56000	75	45	120

The coverage was 100% as all ships arrived to the terminals during monitoring period were studied.

Table 4: Iodine content of salt samples

Entry point	No.s of samples	No.s of Iodized salt	Levels of Iodization		
			10 ppm	25 ppm	25 pp
Dubai	60	7	7	Nil	Nil
Sharjah	30	4	4	Nil	Nil
Ajman	15	2	2	Nil	Nil
Ras El Khaima	15	2	2	Nil	Nil
Total	120	15 (12.5%)	15	Nil	Nil

Nearly 88% of samples were found containing no Iodine. 12.5 % was iodine positive but contained less than 10 ppm.

Table 5: Quantity of salt imported into UAE

Sample	Source 1	NaCl	Mg++ % ww	Ca ++ % ww	Sulphate % ww	Silicon dioxide Mg/l	Calcium Anhydride
1	Iran	95.82	0.23	0.12	0.430	-	-
2	India	97.5	0.430	0.82	0.01	-	-
3	Iran	97.14	0.003	0.93	0.016	0.10	-
4	Iran	96.01	0.360	0.29	-	0.10	5.4
5	India	96.32	1.2	083	1.4	-	-

The presence of insoluble impurities clearly indicates that rock salt was not subject to any refining process.

Table 6: Brands of salt available in UAE market .

state	NO OF BRANDS	NO of Iodized brands	% Iodized	% Non Iodized
Dubai	38	9	24%	76%
Sharjah	21	7	33	67
Ajman	18	6	33	12
RAS Khimah	14	4	28	72

Table 7
Names of some Brands, Sources, types of imitated Brands and prices

IODIZEDBrands	Sources	Packing	Unit price	Non iodized brand	Sources	Packing	UNIT PRICE DHM
Nezo	Holland	750g	2.00	Costa	Uk	700g	105
American garden	USA	750g	1075	Sail	UAE	1kg	0.75
Mermaid	OMAN	750	1.25	Alaziz	UAE	1 kg	1.00
Sharwoods	France	500 g	2.00	BME	UAE	1 Kg	1.00
-	-	-	-	Rima	UAE	1 Kg	1.00