

Breakthroughs in Bangladesh boost iodized salt quality

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On the Bay of Bengal, the Ganges, Brahmaputra and Meghna rivers meet in Bangladesh to form the world's largest delta. Extremely fertile, yet vulnerable to floods depleting iodine from soils, this low-lying country supports a population of around 150 million people. Nearly 40 per cent are children. Although Bangladesh has a growing economy, half of these children continue to live below the international poverty line.

In 1993, the first national IDD survey in Bangladesh found a 47% goiter rate and low iodine intakes in over 2/3rds of the population. Responding to this threat, the Bangladeshi government passed iodized salt legislation in the mid-1990s and recently, substantial investments have been made in the infrastructure of salt iodization.

Bangladesh has made a remarkable progress in sustainable elimination of IDD (*Figure 1*). According to a national survey in 2004-05, the goiter rate came down to 6.2% and the median urinary iodine concentration was 163 µg/L. However, the household coverage with adequately iodized salt remained at 51.2% and had declined from the previous

survey. Sustained advocacy among policy makers, administrators, academicians, program managers and salt manufacturers is required for achieving USI.

A symposium 'Current Status and Future Strategies for Sustainable Elimination of IDD in Bangladesh' was organized by ICCIDD in collaboration with the Micronutrient Initiative (MI) on 13 December 2012 during the 3rd Regional Public Health Conference at the Bangladesh Institute of Health Sciences (BIHS) in Dhaka. The Symposium provided an ideal platform for advocacy and dissemination of scientific information related to IDD and USI in Bangladesh. More than 200 delegates attended the symposium from the South Asia region. The audience included students, policy makers, administrators, and experts in the field of IDD and health. The symposium discussed the current status (*Tables 1 and 2, p.17*) and deliberated the future strategies for sustainable elimination of IDD, as summarized below.

Current status of USI in Bangladesh: Mr. Abu Taher Khan, Project Director, Control of IDD (CIDD) Bangladesh

Bangladesh has adopted a number of measures for achieving USI in the last two decades. The legal and organizational measures include:

- Enactment of the Prevention of IDD Act in 1989 and framing of the Prevention of IDD Regulation in 1993
- Constitution of national, district and sub-district level salt committees
- Establishment of eight zonal offices along with eight salt iodine testing laboratories
- Adoption of a National Salt Policy in 2011

A total of 267 salt mills have been equipped with Salt Iodization Plants (SIPs), 200 SIPs have been upgraded and 105 salt mills have established their own laboratories.





Dr. Pandav, ICCIDD, handing over salt testing kits to Mr. Khan, Project Director, CIDD (left).



Dr. Mahmud (right) receiving a memento from Ms. Galvin, with Prof. Sandip Kumar Ray (on the left).

According to the preliminary reports of the Bangladesh National Nutrient Survey 2012, 57.6% of households are consuming adequately iodized salt (≥ 15 ppm), 80.3% of households are consuming salt with some iodine (≥ 5 ppm) and 75.8% of the households are consuming packet salt. CIDD has developed a revolving fund of 200 million Bangladesh Taka (BDT) to procure and distribute potassium iodate among the salt producers. More and more salt entrepreneurs are investing in research and development. Against the demand of 1.43 million MT, Bangladesh is producing 1.17 million MT

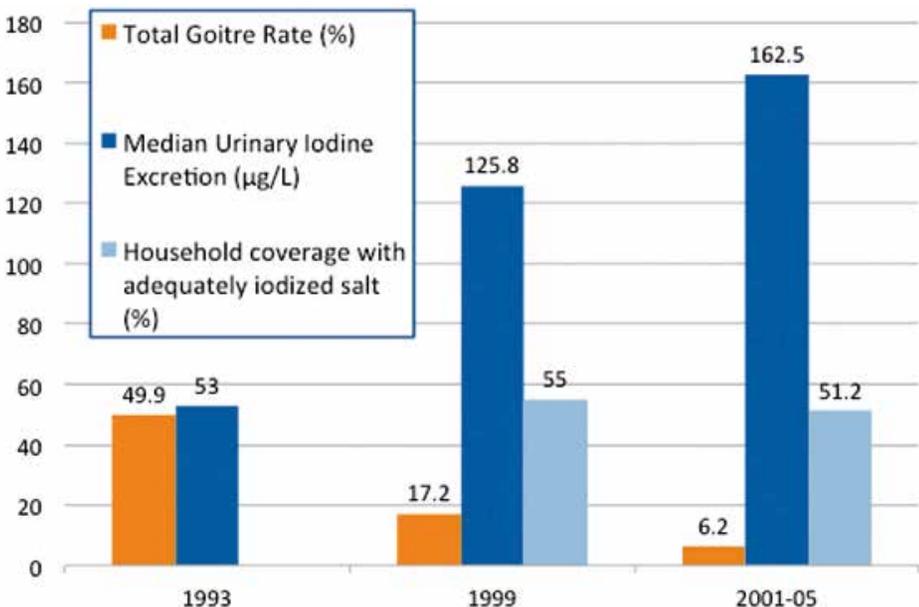
of salt. These measures have led to a decline in prevalence of goiter and improvements in iodine nutrition.

Forthcoming challenges are to ensure 100% of edible salt is optimally iodized (40–45 ppm) at production level, to continue the program after June 2016 without donor funding, and to restrict selling of unpacked open salt for edible purposes. Future strategies will include immediate amendment of the IDD law to make one uniform standard for the iodine level in the salt, inclusion of cattle feed and bakery items in the compulsory

use of iodized salt and enhancement of the punishment limit. Other strategies will be to:

- start advocacy programs in the low coverage districts on a priority basis
- utilize the Bangladesh Small & Cottage Industries Corporation's (BSCIC) country-wide institutional network for USI
- introduce the IDD issue in the curriculum of primary and secondary level text books, and also in medical and nutrition curriculum.

Figure 1: Monitoring IDD in Bangladesh, 1993-2005



A new national quality assurance and control manual to improve USI in Bangladesh

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The Bangladesh Small and Cottage Industries Corporation— with the financial and technical support of the Global Alliance for Improved Nutrition (GAIN) — convened a two-day workshop in Dhaka among key government and industry partners to solicit feedback on and approval of a national manual to improve the quality of iodized salt available in the country. GAIN and ICCIDD are providing technical assistance to ensure the manual incorporates best global practice.

The Government of Bangladesh began its commitment to eliminating iodine deficiencies in 1989 when it established the Control of Iodine Deficiency Disorder (CIDD)

Project within the Small and Cottage Industries Corporation under the Ministry of Industries. Maintaining quality of iodized salt from production to consumption is a key project focus.

The manual, which is aligned with internationally agreed-upon best practice and management and salt quality standards, will be adapted to the Bangladeshi context. The tool will provide guidelines so salt producers and regulatory agencies can improve their iodization and testing practices.

Key partners participating in the workshop gave feedback on the tool:

- Mr. Dilip Barua, Honorable Minister, Ministry of Industries: “The manual will help ensure consistent availability of adequately iodized salt through engaging salt producers. I congratulate GAIN for this great initiative.”
- Eng. Md. Mansur Ali Sikder Additional Secretary, Ministry of Industries: “The effort will help increase the availability of adequately iodized salt in the consumer market to eliminate iodine deficiency. I appreciate GAIN’s effort and look forward to GAIN’s technical leadership on operationalization of quality assurance/quality control protocols in the country.”
- Chairman, BSCIC, Mr. Fakhru Islam: “Adaptation of the appropriate manual will help sustainably reach 90 percent of Bangladeshis with adequately iodized salt.”
- Executive Director, GAIN, Marc Van Ameringen: “Partnership, policy and political commitment will bring a significant improvement of iodized salt quality to benefit the most marginalized.”
- Project Coordinator, ICCIDD, Dr. Gregory Gerasimov: “Salt producers must make sure that iodized food grade salt is always safe and contains the right level of iodine.”

Quality assurance for USI in Bangladesh: Dr. Zeba Mahmud, Country Director. The Micronutrient Initiative, Bangladesh

MI provides technical maintenance, operational support and continuous counseling for adequate iodization to 200 small and medium scale salt processors producing 360,000 MT of salt. To support the national government, MI revitalized and is maintaining the eight BSCIC salt laboratories. MI also augments the skill and capacity of the BSCIC staff involved with salt on monitoring, laboratory

techniques, and computer/internet. It has established an internet network among the salt zones and the head office for effective communication and monitoring.

The following measures have been undertaken to support continuous improvement in the quality of salt:

- All salt mills have been provided a manual for operating and maintaining the Salt Iodization Plants (SIPs).
- The salt tests at the BSCIC laboratories are validated through the Institute of

Food and Science Technology (IFST) Science Laboratory under the Ministry of Science and the Institute of Public Health Nutrition (IPHN) under the Ministry of Health and Family Welfare.

- The Bangladesh Salt Iodization Information System (BSIIS) has been set up.
- All gathered information is used at the Quarterly Review Meetings at the salt zones between the salt millers and BSCIC to analyze, find solutions and take immediate decisions for corrective measures if needed.

- Deployment of USI Extenders with technical knowledge and expertise in the total process of quality salt iodization, to facilitate BSCIC salt inspectors, chemists and monitoring officers and provide hands on training to SIP operators, including troubleshooting of technical problems of SIPs and raising awareness.
- Introduction of a dewatering device on a cost sharing basis by medium entrepreneurs and holding of advocacy meetings.

Further sessions included a presentation by Mr. Mohiduzzaman, Professor, Institute of Nutrition and Food Sciences (INFS), University of Dhaka, on the role of iodine monitoring laboratories in sustainable elimination of IDD in Bangladesh, a presentation entitled ‘Iodine Deficiency Disorders: The Last Mile to Success’ by Ms. Nance Webber, Chief, Communication for Development, UNICEF, Bangladesh, and a presentation by Mr. Whiduzzaman, of GAIN, Bangladesh on the role of the private sector in achieving USI in Bangladesh.



Mr. M. G. Venkatesh Mannar, President, The Micronutrient Initiative, gave a global overview of IDD. He stated that IDD remains a significant public health problem in at least 32 countries, but access to adequately iodized salt has increased from <20% in 1990 to 71% of households in 2012. Globally US\$ 400 million in external investment towards supporting IDD programs were matched by an estimated US\$ 2 billion investment by the salt industry. Yet nearly 1.8 billion people do not have access to effectively iodized salt. A combination of continued government prioritization and industry motivation and commitment to USI is essential to achieve and sustain global elimination of IDD.

Table 1: Tracking progress towards sustainable elimination of IDD in Bangladesh (National survey on IDD and USI in Bangladesh, 2004-05).

Indicators	Goals recommended	Goals achieved in Bangladesh
Salt iodization		
Proportion of households using adequately iodized salt	>90%	51.2%
Median Urinary Iodine Concentration		
In the general population	100 - 199 µg/L	163 µg/L
In pregnant women	150 - 249 µg/L	158 µg/L
Programmatic indicators	Attainment of 8/10 indicators shown in Table 2	7/10

Table 2: Current status of program indicators for tracking progress towards sustainable elimination of IDD in Bangladesh

Indicator	Current Status
1 Presence of a national multi-sector coalition responsible to the government for the national programme for the elimination of IDD	Attained
2 Demonstration of political commitment	Attained
3 Enactment of legislation and supportive regulations on universal salt iodization, which establishes a routine mechanism for external quality assurance	Attained
4 Establishment of methods for assessment of progress in the elimination of IDD	Attained
5 Access to laboratories to provide accurate data on salt and urinary iodine levels and thyroid function	Attained
6 Establishment of a program of education and social mobilization	Information Awaited
7 Routine availability of data on salt iodine content at the factory level at least monthly, and at the household level at least every five years	Partially Attained
8 Routine availability of population-based data on urinary iodine every five years	Attained
9 Demonstration of ongoing cooperation from the salt industry	Attained
10 Database for recording of results of regular monitoring procedures on household coverage and urinary iodine concentrations	Information Awaited

In the final session, the advocacy booklet entitled “Prevention of Brain Damage: Universal Salt Iodization for Control of Iodine Deficiency Disorders in Bangladesh” was presented to the audience by Dr. Rakesh Kumar, ICCIDD, New Delhi, and feedback from the audience was obtained. The booklet will be widely circulated to medical and nutrition institutes.