Tracking Progress towards sustainable

Iodine Deficiency Disorders Elimination Program

in Uzbekistan

Draft report by

Dr Chandrakant S. Pandav
Regional Co-ordinator
International Council for Control of Iodine Deficiency Disorder (ICCID)
(South Asia)
&
Professor and Head
Centre for Community Medicine
All India Institute of Medical Sciences
New Delhi-110029, India

31st October, 2009

Acknowledgement

1. The Government of the Republic of Uzbekistan
2. The Legislative Chamber of Oliy Majlis of Uzbekistan
3. Sanitary Epidemiology Center and Ministry of Public Health
4. Researchers and Scientists of the Institute of Endocrinology
5. Officials of the Nutrition Implementation Plan Center
6. Iodized Salt Producers – ORZU and SOLINA
7. Federation of Societies of Consumer Rights Protection of Uzbekistan
8. Uzmedexport
9. UNICEF Representative Office in Uzbekistan
10. AIIMS and ICCIDD New Delhi, India

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Introduction

Uzbekistan is located in central Asia, bordering Kazakhstan to the West and to the North, Kyrgyzstan & Tajikistan to the East, Afghanistan & Turkmenistan to the South (**Figure 1**). It stretches 2,355 Km by the Aral Sea to the North and North-West.

The estimated population is 27.372 million and crude birth rate is 22.8/1000 (2007). The country consists of 12 provinces (oblasts), one Autonomous Republic and capital city Tashkent.

Figure 1: Map of Uzbekistan

1.1 Key achievements of Uzbekistan

Uzbekistan became an independent country in 1991. In a short period of time, the country has made a tremendous progress. Some of the key achievements of Uzbekistan are presented in **Box 1**.

Box 1: Key achievements of Uzbekistan
• Adult Literacy Rate – 100 % • Television Coverage – 100 % • Births attended by health personnel – 100 % • School enrollment (Primary and Secondary) – 100 % • Good health infrastructure and large number of health professionals • Major political commitment for Health and Nutrition Programs • Good track record of performance in reducing stunting and underweight • Good track record of progress in Universal Salt Iodization and Iodine Deficiency Disorder Elimination

1.2) Terms of Reference:

The terms of Reference were:

i) To review activities within the Iodine Deficiency Disorders Elimination Program and identify strengths, weakness, constraints and opportunities in relation to their impact on Iodine Deficiency Disorder elimination.

ii) To track the progress of the Iodine Deficiency Disorder Elimination Program against indicators for sustainable elimination of Iodine Deficiency Disorder as detailed in the WHO/UNICEF/ICCIDD publication," Assessment of Iodine Deficiency Disorders and Their Elimination".

iii) To make recommendations for strengthening the programme and identify areas and/or strategies that needs to be improved to accelerate progress in Uzbekistan.

iv) To make a verbal presentation at the Stakeholders Debriefing Meeting at the Tashkent Paediatric Medical Institute, Tashkent.

v) To prepare a final report for submission to UNICEF, Uzbekistan.

1.3) Methodology:

i) Key informant interviews with major stakeholders,

ii) Focus Group Discussion.

iii) Visits to Institute of Endocrinology and Salt Iodisation facilities in Tashkent.

iv) Review of existing reports, documents, papers et al.

1.4) Dates of Visit: 11th to 22nd October, 2009

1.5) "Schedule of IDD Review" is given in Annexure 1 and

1.6) "List of Persons met in Uzbekistan" is given in Annexure 2.

1. Iodine Deficiency Disorder in Uzbekistan

Iodine deficiency disorders (IDD) are a major micronutrient deficiency problem in Uzbekistan. Epidemiological surveys conducted by Institute of Endocrinology in 1998 showed that 93% of population used non-iodized salt, 90% of population had practically no iodine in urine and prevalence of goitre was 65%.[1] According to National Nutrition Damage Assessment Report, it is estimated that due to iodine deficiency Uzbek economy annually loses up to 0.33% of GDP (approximately183.2 million USD).[2]

The total estimated requirement of iodised salt is given in **Box 2**

Box 2: Estimated requirement of iodised salt in Uzbekistan

- Population of Uzbekistan: 27.372 million (2007) [Unicef, Uzbekistan]
- Average intake of salt per person per day = 10 grams (7 -12 grams.)
- Total requirement of salt per person per year = 5 kg
- Total requirement of iodized salt in Uzbekistan = 136, 500 tons

The total number of unprotected babies born per year in Uzbekistan is given in **Box 3**

Box 3: Unprotected babies born per day in Uzbekistan

- Total Population = 27.372 million (2007) [Unicef, Uzbekistan]
- Annual number of births = 623,000 (2007) [Unicef, Uzbekistan]
- Coverage of adequately iodized salt at household level = 53% (2000-2007) [Unicef, Uzbekistan]
- Total number of unprotected babies from IDD born per year = 292, 810
- Total number of unprotected babies from IDD born per day = 800

The government of Uzbekistan over the last decade has shown increasing commitment towards elimination of Iodine deficiency Disorder (IDD) through Universal Salt Iodization (USI). These activities are highlighted in **Box 4**

Box 4: Highlights of USI and IDD Elimination Activities in Uzbekistan

- Self-sufficiency in common salt production
- Import of salt iodization machinery is tax free
- Supporting environment by the Government for small-scale industries,

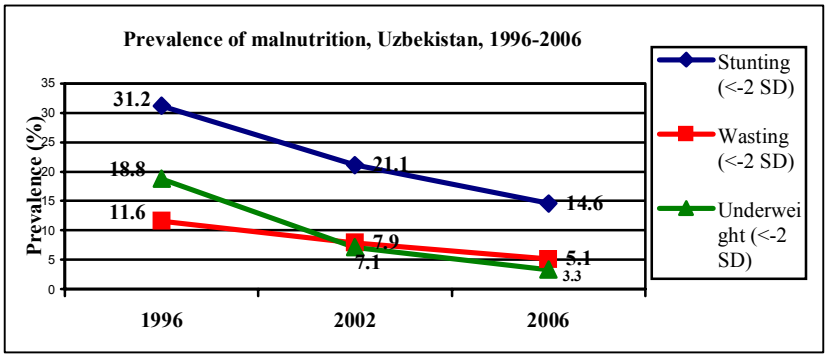
  e.g. salt iodization factories
- Production of iodized salt started in 1998
- Single Agency for procurement and distribution of potassium iodate (Uzmedexport - 2006)
- Legislation adopted for IDD prevention & control in May, 2007
- High quality institutions present, e.g. the Institute of Endocrinology,

  Sanitary Epidemiology Centre.
- Nationwide Screening Program for Congenital Hypothyroidism (CH)
- Nutrition Investment Plan Center (established in 2009)
- Federation of Societies on Consumer Rights Protection of Uzbekistan
- Community awareness activities, which involves schools, Mahalla committees,

  and retailers
- Communication efforts have been initiated.

Uzbekistan has shown good track record in reducing stunting and wasting .The prevalence of stunting has decreased from 31.2% to 14.6% between 1996 and 2006.[3] The wasting has decreased from 18.8% to 5.1% during the same period as given in **Figure 2**.This indeed is a remarkable achievement by the country in addressing one of the most challenging problem of malnutrition.

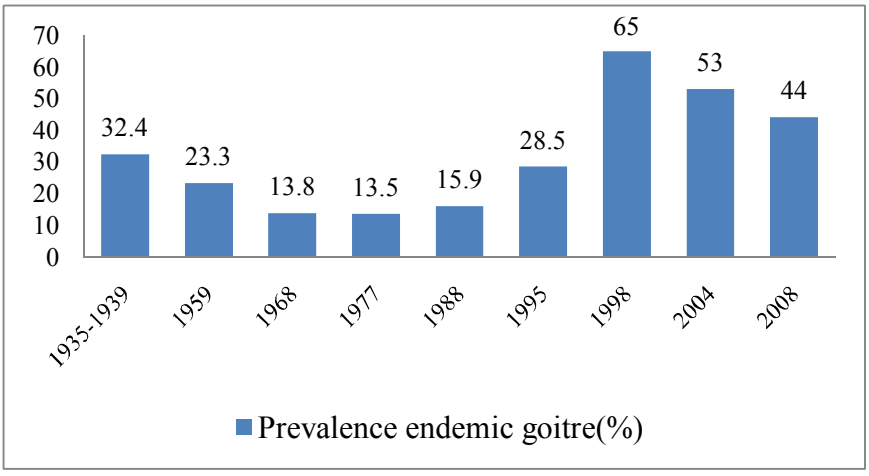
Figure 2: Prevalence of malnourishment in Uzbekistan 1996-2006



Iodine Deficiency Disorders program known then as "Endemic Goitre" in the former USSR received attention. Adequately iodised salt was universally available in Uzbekistan from Russia, Ukraine and Kazakhstan. **Figure 3** gives the dynamics of prevalence of endemic goitre in Uzbekistan. As is evident, the goitre prevalence reported in 1935-39 was 32.4%. Over a period of time with effective implementation of the universal salt iodisation programme, it was reduced to 15.9% in 1988.

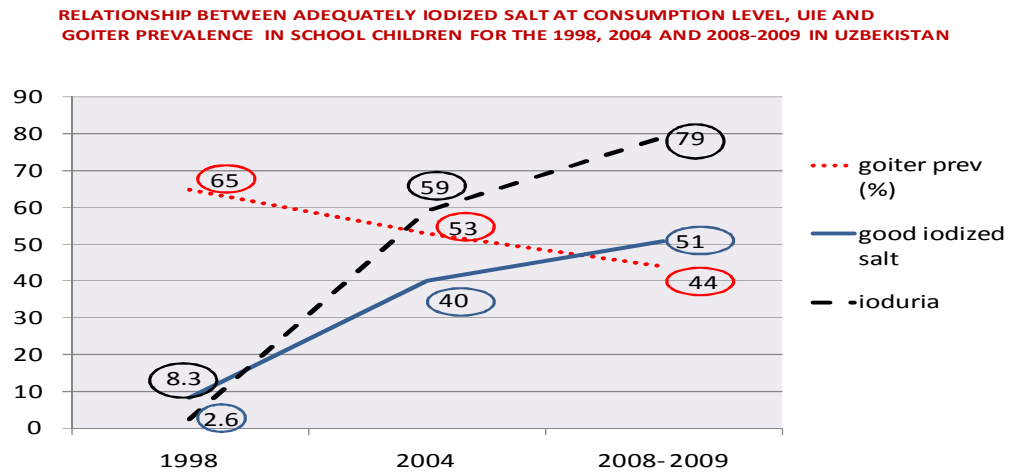
Uzbekistan became an independent country in December, 1991. Since, iodised salt was not produced in Uzbekistan during the former USSR period, the prevalence of goitre increased to 65%. The country started production of iodised salt in 1998. With the introduction of iodised salt the prevalence of goitre was reduced to 53% in 2004 and to 44% in 2008**.**

Figure 3: Dynamics of prevalence of endemic goitre in Uzbekistan



The efforts by government have resulted in reduction in IDD like endemic goitre. The percentage of household consuming adequately iodized salt was only 2.6% in 1998. Over a period of time, it has increased to 51% in 2008-2009 (**Figure 4**) .Consequently, normal urinary iodine levels have also increased from practically nil in 1998 to 74% in 2009. Although, there has been increase in the use of iodised salt at household level over the years, results of surveys have shown that use of iodised salt ranges from 62% in urban areas to 49% in rural areas.[3]

Figure 4: Adequately iodised salt at consumption level, UIE and goitre prevalence for 1998; 2004 and 2008-2009, Uzbekistan



It was reported during the debriefing workshop at the Tashkent Paediatric Medical Institute and meetings at the Ministry of Public Health that the latest coverage figures of adequately iodised salt at household level for the year 2009 vary from 60 % to 70%. However copy of printed documents or references are awaited.

2. Iodized salt production in Uzbekistan

Uzbekistan is self sufficient in salt production. The production of iodised salt started in 1998. Before 1998 iodised salt was supplied to Uzbekistan from Russia, Ukraine and Kazakhstan. **Figure 5** show that 60% of salt production occurs in the Karakalpakstan, 30% in Surkhandarya and 10% in Navoi.

Figure 5: Location of salt production sites in Uzbekistan

In 2008, there were 62 salt manufacturers in Uzbekistan. Out of these only 24 companies have equipments for iodization and only 14 companies have iodine identification laboratories. Since 2006, there is only a single agency for procurement and distribution of potassium iodate to the salt producers-Uzmedexport. The number of companies that do not purchase potassium iodate is 35.[1] The information on salt producing companies is given in **table 1**.

Table 1: Information on Salt Producing Companies in Uzbekistan, 2008

Regions	Activities of companies	Total

	Mining, processing and packaging	Mining	Mining, processing	Processing and packaging	Processing only	Packaging only	
Tashkent city	1			5	1	7	16
Tashkent region				2		2	4
Andijan region	1		1	2		3	7
Bukhara region						5	5
Jizzakh region				1		1	2
Navoi region		4				1	5
Samarkand region				1		2	3
Sirdarya region				1			1
Surkhandarya region.	1						1
Ferghana region				3			3
Khorezm region	1			1			1
Kashkadarya region						1	1
Karakalpakstan	3		9	1			13
Country Total	7	4	12	17	1	22	62

3. Monitoring salt iodisation in Uzbekistan.

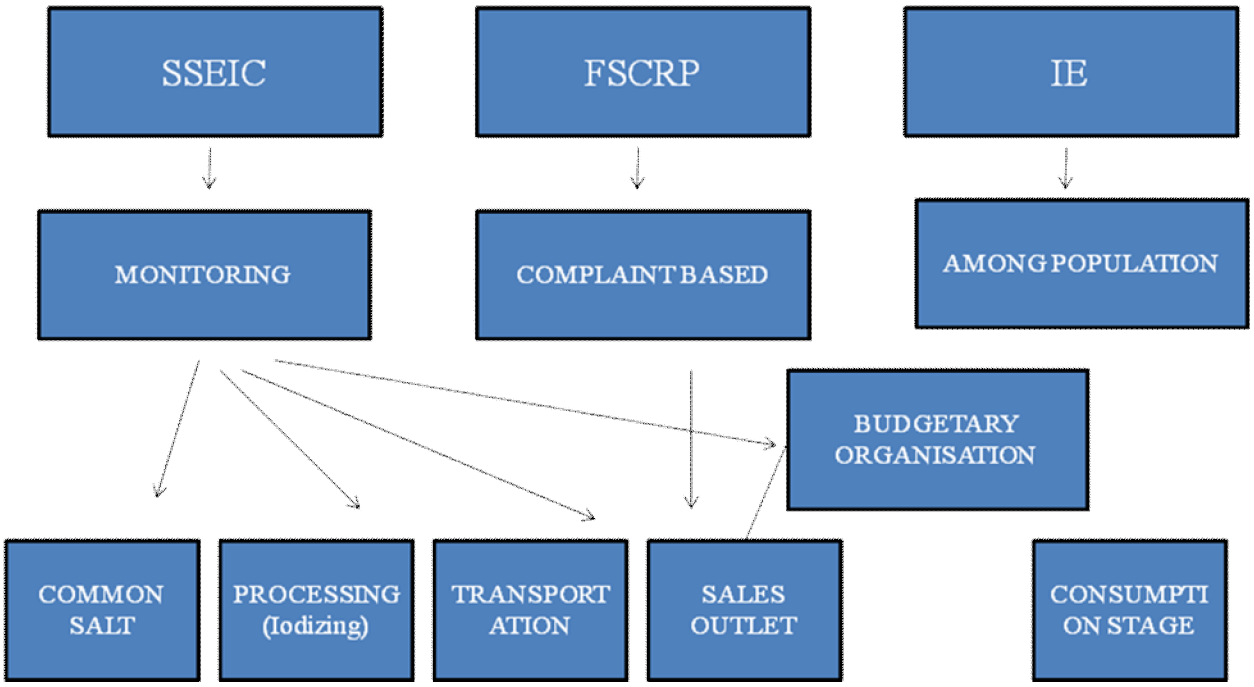
There are three organizations responsible for monitoring of iodine content at production, sales and consumer level (Figure 6). They are:

1. State Sanitary Epidemiology inspections Centre (SSEIC)
2. Federation of Societies of Consumer rights protection (FSCRP)
3. Institute of Endocrinology (IE)

The State Sanitary Epidemiology Centre is concerned with monitoring of iodized salt at production level. The Federation of Societies of Consumer Rights Protection is responsible

for both regular monitoring and complaint based inspection of salt at outlet level. In addition both the organization are responsible for monitoring of iodized salt in budgetary organizations like kindergarten, hospitals etc. The Institute of Endocrinology, Tashkant is responsible for monitoring at consumer level. The institutional organizations responsible for monitoring of salt are given in **Figure 6.**

Figure 6: Institutional organisations responsible for monitoring



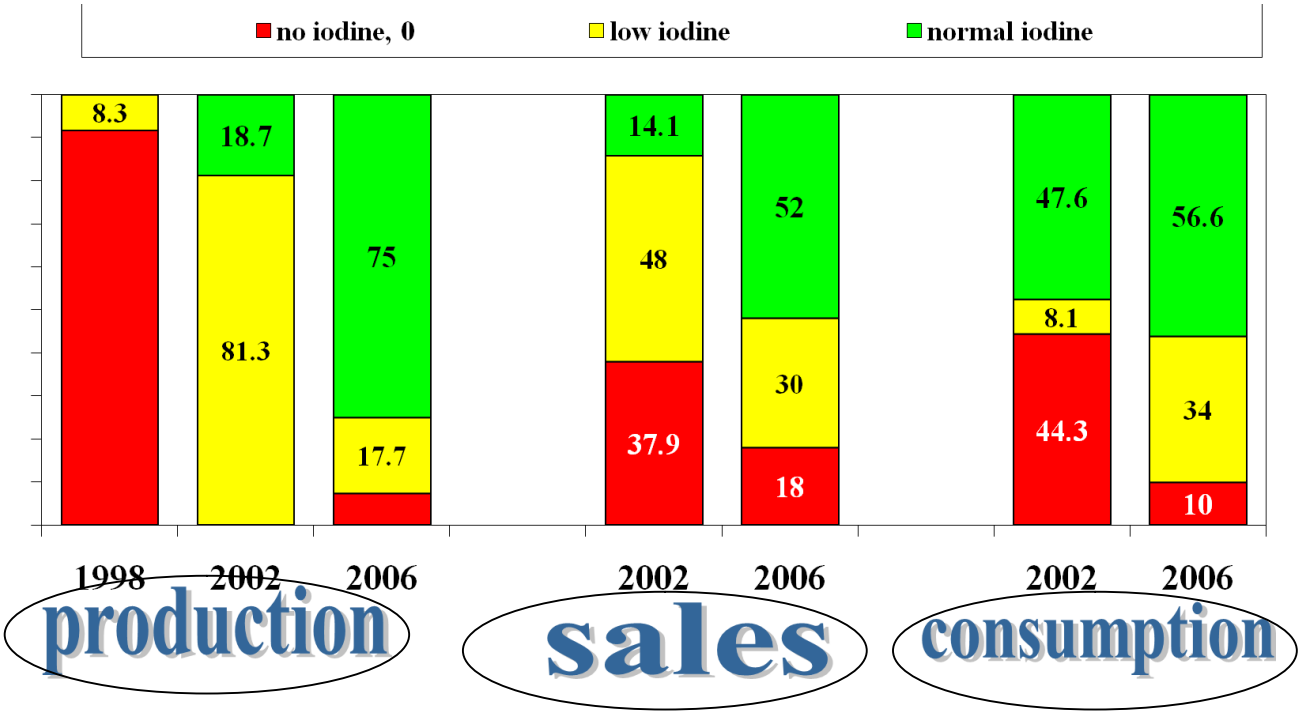
SSEIC-State Sanitary Epidemiology Inspections Center

FSCRP-Federation of Societies of Consumer Rights Protection

IE-Institute of Endocrinology

The three stage monitoring of iodine content of salt at production, sales and consumer level shows increase in proportion of adequately iodised salt over the years. But there is a decrease in normal level of iodization from stage of production to stage of consumption. The disparity at various levels may be due to the loss of iodine content during packing, storage and transport. The proportion of iodized salts at various levels in the past decade is
shown in **Figure 7**.

Figure 7: Three-stage monitoring of iodized salt, 1998-2006



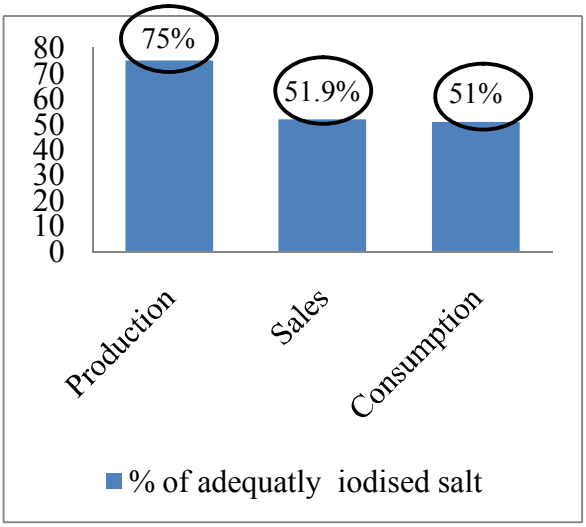
The three level monitoring carried out in 2008 showed that there was a decrease in normal level of iodization from stage of production (75%) to stage of consumption (51%).Thus ,there is a major loss of iodine during transport from stage of production (75%) to stage of sales (51.9%). While the loss of iodine from stage of sales (51.9%) to stage of consumption (51%) was minimal.[1] Data are given in **Table 2** and **Figure 8**.

Table 2: Level of iodization of table salt at three stages in Uzbekistan [1]

Level of monitoring	Number of samples - N	Including the number of samples in terms of percentage points (in brackets) on the level of iodization, element iodine mkg/g		
		Inadmissible level	Insufficient level	Normal level

Digital indicators of iodization levels at a stage of production		0 – 6.9	7.0 – 39.9	40.0 – 55.0
Stage of production	**96**	**7 (7.3%)**	**17 (17.7%)**	**(75%)**
Digital indicators of iodization at a stage of sale		0 – 6.9	7.0 – 24.9	25.0 – 55.0
Stage of sale	**420**	**73 (17.4%)**	**129 (30.7%)**	**218 (51.9%)**
Digital indicators of iodization at a stage of consumption		0 – 4.9	5.0 – 14.9	15.0 – 55.0
Stage of consumption	**2358**	**778 (33%)**	**377 (16%)**	**1202 (51%)**

Figure 8 - Percentage of adequately iodized salt at the stages of production, sales and consumption (2008)



The additional possible reason for the disparity between stage of production and sales may also be due to the mixing of iodized refined salt with non-iodized common salts which are then repacked and sold. The proportion of non iodised salts at production, sales and consumption levels were 7.3%, 17.4% and 33% respectively. The supply of adequately iodised salt at consumer level has declined from 56% in 2007 to 51% in year 2008.

4.1 Salt iodisation at sales level

Sale of adequately iodized salt is 51.9 % in Uzbekistan. Among all the Oblasts, sale of adequately iodized salt is highest in Kashkadarya (70%) and Navoi Oblast (63.3%)and is lowest in Samarkhand (36%) and Namangan Oblast (40%).[1] In Namangan Oblast, sale of adequately iodized salt is 40% only. It has no enterprise for salt production.

The geographical distribution of salt factories and procurement practices of the whole sellers/retailer could affect the iodine content of the salt at the stage of sales. The low level of sale of adequately iodized salt even in the capital city (Tashkent) shows the inadequacy of enforcement of salt iodization laws and political commitment of local governing bodies. **Table 3** and **Figure 9** shows the level of iodisation at sales level

Figure 9: Percentage of adequately iodized salt at the stage of sales in the various oblasts of Uzbekistan

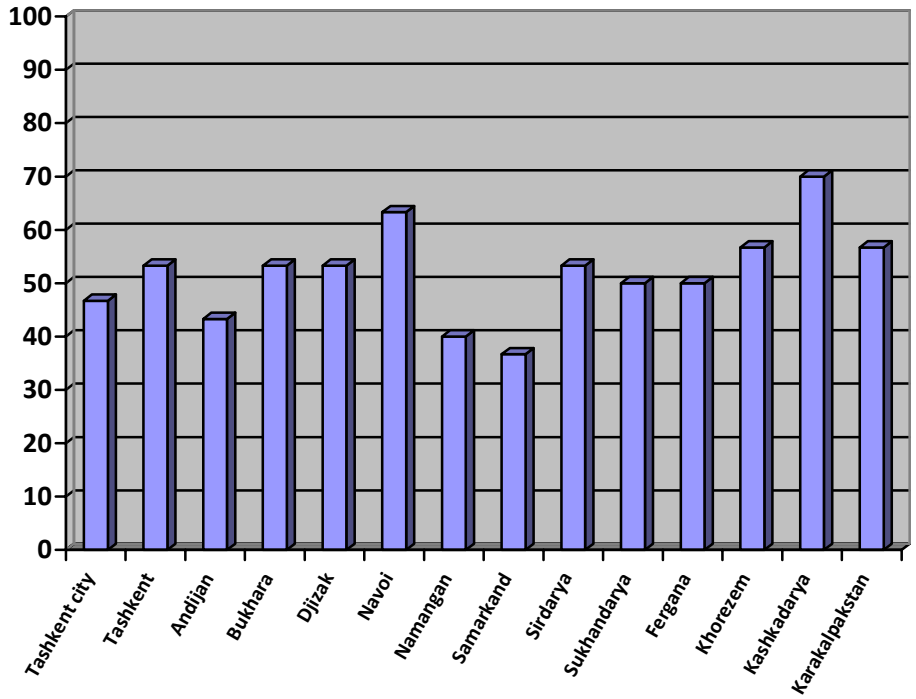


Table 3: The level of iodization of table salt at the stage of sales in the Oblast of Uzbekistan

Oblast of the republic of Uzbekistan	Number of studied samples	Including the number of samples in terms of percentage points (in brackets) on the level of iodization, element iodine mkg/g		
		Inadmissible level, n (%)	Insufficient level n (%)	Normal level n (%)
		0 – 6.9	7.0 – 24.9	25.0 – 55.0
1. Tashkent city	30	4 (13.3)	12 (40.0)	14 (46.7)
2. Tashkent oblast	30	5 (16.7)	9 (30.0)	16 (53.3)
3. Andijan oblast	30	7 (23.4)	10 (33.3)	13 (43.3)
4. Bukhara oblast	30	4 (13.4)	10 (33.3)	16 (53.3)
5. Djizak oblast	30	6 (20.0)	8 (26.7)	16 (53.3)
6. Navoi oblast	30	3 (10.0)	8 (26.7)	19 (63.3)
7. Namangan oblast	30	8 (26.7)	10 (33.3)	12 (40.0)
8. Samarkand oblast	30	8 (26.7)	11 (36.6)	11 (36.7)
9. Sirdarya oblast	30	4 (13.4)	10 (33.3)	16 (53.3)
10. Surkhandarya oblast	30	5 (16.7)	10 (33.3)	15 (50.0)
11. Fergana oblast	30	5 (16.7)	10 (33.3)	15 (50.0)
12. Khorezm oblast	30	4 (13.3)	9 (30.0)	17 (56.7)
13. Kashkadarya oblast	30	6 (20.0)	3 (10.0)	21 (70.0)
14. Republic of Karakalpakstan	30	4 (13.3)	8 (26.7)	17 (56.7)
Total in the Republic	**420**	**73 (17.4%)**	**129 (30.7%)**	**218 1.9%)**

4.2 Salt iodisation at consumer level

In 7 out of 14 oblast the consumption of adequately iodized was less than 50%.[1]The proportion of adequately iodised salt at consumer level across various oblasts is given in **Table 4** and **Figure 10**. Consumption of adequately iodized salt is highest in Bukhara Oblast (81%). Bukhara Oblast has 5 salt production enterprises but none have iodine feeders and laboratories. Sale of adequately iodized salt in Bukhara Oblast is low (53.3%). Irrespective of this, consumption of adequately iodized salt is high. Consumption of adequately iodized salt is least in Khorezm Oblast (9%). There is only one enterprise where both feeder and laboratory are available. Consumption of uniodized non refined common salt might be the major factor for increase proportion of noniodized salt at consumption level. Thus no oblasts are provided with high quality iodised salt at consumer level.

Figure 10 - Percentage of adequately iodized salt at the stage of consumption at various oblasts ,Uzbekistan.

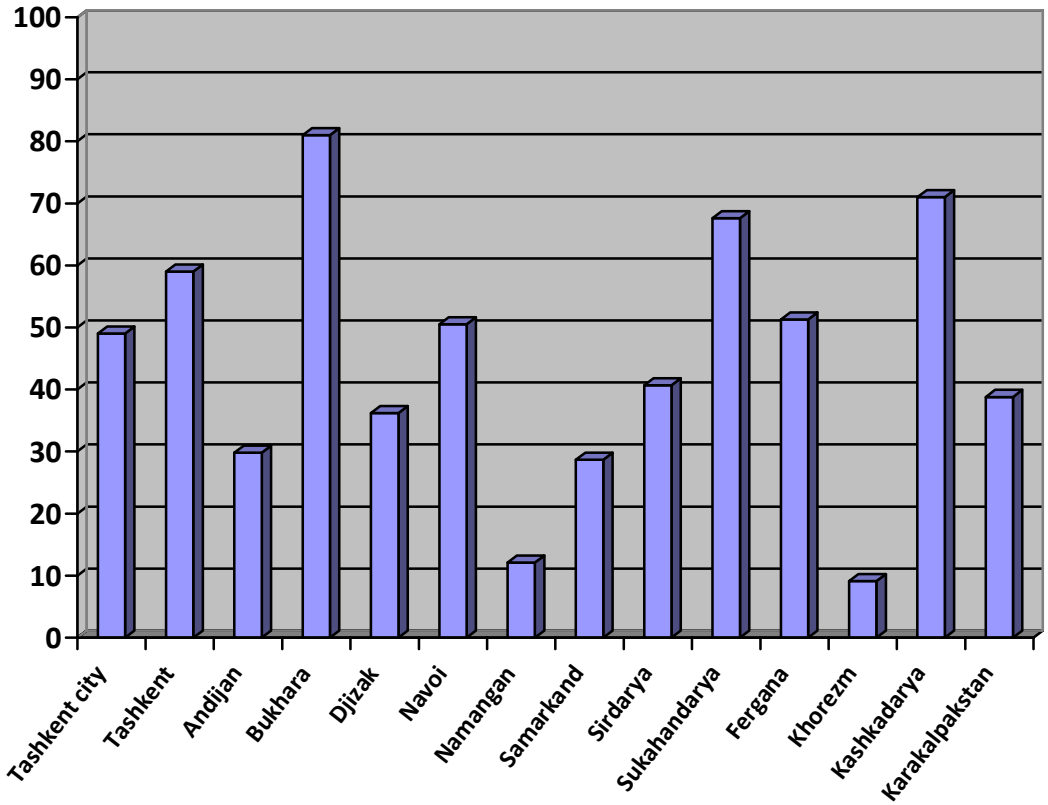


Table 4: Level of the iodization of table salt at a stage of consumption in various oblasts, Uzbekistan

Oblast of the republic of Uzbekistan	Including the number of samples in terms of percentage points (in brackets) on the level of iodization, element iodine mkg/g		
	Non iodized salt n (%)	**Insufficient level of salt iodization n (%)**	**Normal level of salt iodization, n (%)**
	0 – 4.9	**5.0 – 14.9**	**15.0 – 55.0**
1. Tashkent city	53 (24%)	58 (26.6%)	107 (49%)
2. Tashkent oblast	60 (20.0%)	63 (21.0%)	177 (59.0%)
3. Andijan oblast	37 (44%)	22 (26.2 %)	25 (29.8%)
4. Bukhara oblast	24 (8.0%)	32 (10%)	244 (81%)
5. Djizak oblast	52 (46%)	19 (17.2%)	40 (36.2%)
6. Navoi oblast	41 (34.5%)	18 (15.2%)	60 (50.5%)
7. Namangan oblast	87 (70%)	22 (17.7%)	15 (12.1%)
8. Samarkand oblast	59 (48.4%)	28 (22.9%)	35 (28.7%)
9. Sirdarya oblast	47 (45%)	13 (12.9%)	41 (40.7%)
10. Surkhandarya oblast	15 (22%)	7 (10.3%)	46 (67.6%)
11. Fergana oblast	82 (27.4%)	64 (21.3%)	154 (51.3%)
12. Khorezm oblast	101 (84%)	9 (7.4%)	11 (9.1%)
13. Kashkadarya oblast	84 (28.0%)	3 (1%)	213 (71 %)
14. Republic of Karakalpakstan	36 (40%)	19 (21.1%)	35 (38.9%)
Total in the Republic	**778 (33%)**	**377 (16%)**	**1202 (51%)**

4. Median urine iodine concentration

Median urine iodine level is used to assess the prevalence of iodine deficiency. In the last decade the percentage of people with severe iodine deficiency has decreased from 97.4% in 1998 to 0.85% in 2008 as shown in **Figure 11**. In 2008, 74% of population had urinary iodine level more that 100 µg/ml as shown in **Table 5**.

Figure 11: Monitoring of urine iodine in Uzbekistan 1998-2008

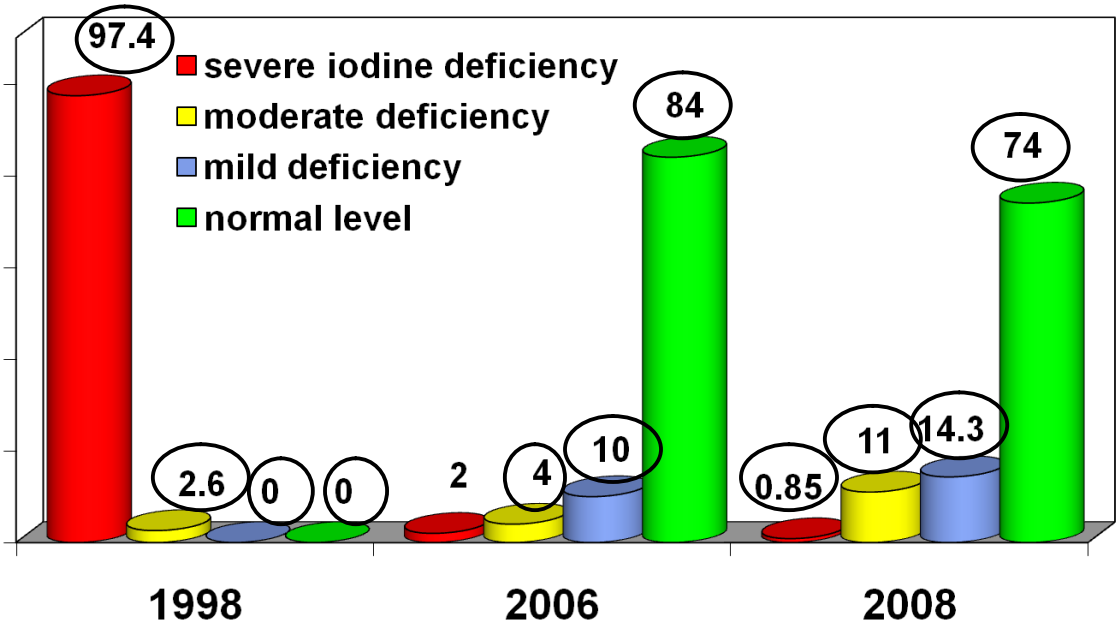


Table 5: Median urinary iodine concentration in Uzbekistan, 2008

Median urinary iodine concentration(µg/L)	Iodine nutrition	Percentage
<20	Severe iodine deficiency	0.85
20-49	Moderate iodine deficiency	11.00
50-99	Mild iodine deficiency	14.30
100-199	Optimal	74.00

6. WHO/UNICEF/ICCIDD criteria for assessment of Iodine Deficiency disorder and their monitoring [5]

The WHO/UNICEF/ICCIDD criteria for achieving sustainable elimination of iodine deficiency as public health problem is given in Table 6.

Table 6: Criteria for monitoring progress towards sustainable elimination of IDD as a public health problem[5]

INDICATORS	GOALS
Salt iodization Proportion of households using adequately iodized salt	> 90%
Urinary Iodine Median in the general population Median in pregnant	 100 – 199 ug/l 150 - 249ug/l
Programmatic indicators	Attainment of 8 out of 10 indicators (specified in Section 6.3)

Programme indicators for evaluation of IDD Elimination Programme.

1. Presence of National multi-sector coalition responsible to the government for the program for the elimination of IDD.
2. Demonstration of political commitment.
3. Enactment of legislations and supportive regulations on universal salt iodization.
4. Establishment of methods for assessment of elimination of Iodine Deficiency Disorders (IDD).
5. Access to laboratories as defined by laboratories able to provide accurate data on salt and urinary iodine levels and thyroid function.
6. Establishment of a program of education and social mobilization.
7. Routine availability of data on salt iodine content at factory level (monthly) at household level (5 yearly).
8. Routine availability of population based data on urinary iodine level (5 yearly).
9. Demonstration of ongoing cooperation from the salt industry as defined by maintenance of quality control measures and absorption of iodide/iodate.
10. Presence of the national database for recording of results of regular monitoring procedures.

7. Tracking progress towards sustainable Iodine Deficiency Disorders program in Uzbekistan

The observations and recommendations based on program indicators for IDD program is given below in table 7.

Program indicators	Observations	Recommendations
1) An effective, functional national body (council or committee) responsible to the government for the national program for the elimination of IDD	• Ministry of Health is responsible for conduct of the program • MOH involves other Ministries like Ministry of Public Education, Ministry of Finance and Tax committee in the program • Responsibility of procurement of imported Potassium Iodate along with distribution to salt producer was transferred to Uzmedexport under agreement of MOH and UNICEF **PARTIALY ATTAINED**	• The current council for USI should be expanded to include Oliy Majlis deputies, the Federation of Societies on Consumer Rights Protection of Uzbekistan, representatives of Associations of Common Salt Producers and Iodized Salt Producers, MFERIT (for KIO3) and Railways, media representatives, representatives from regional khokimiyats. • Chairman of the Committee for USI should be the Deputy Prime-Minister • Council should meet frequently, at least once in 6 months and report to the parliament every year
2)Evidence of political commitment to universal salt iodisation and the elimination of IDD	• IDD and Micronutrient disorders and nutrition issues mentioned by the Government • NIP –Nutrition Investment plan (April 2007 to Jan 2008) is planned to address issue of micronutrient deficiency including Iodine deficiency in the country by government • Adapted Nutrition Improvement strategy in 2009(Target Salt Iodization 85% of population) **PARTIALY ATTAINED**	• Political commitment to USI and IDD needs to be emphasized in political speeches, agendas, National goals and key National days regularly.

Program indicators	Observations	Recommendations
3)Appointment of a responsible executive officer for the IDD elimination programme	• Presently, there is NO exclusive executive program Officer for the IDD Program (Specialist officers are present at MOH) • **NOT ATTAINED**	• Need to have exclusive Executive Program Officer for the IDD Program
4)Legislation or regulations on universal salt iodisation	• In May, 2007 Formulation of Law on Iodine Deficiency Prevention under which chapter 4 deals with the Universal Salt Iodization.[6] **(Annexure 4)** **PARTIALY ATTAINED**	• Implementation plan should be defined for the law on universal salt iodisation. • Laws regarding prohibition of sales of non iodised salt should be considered. • Law doesn't include iodised salt for livestock and food industry.
5) Commitment to assessment and re-assessment of progress in the elimination of IDD, with access to laboratories able to provide accurate data on salt and urine iodine	• Training of regulatory personal is mentioned • Regular Inspection of salt producers and packers is mentioned • Quarterly Monitoring in market place • Modern monitoring system at all three levels i.e. Household, Sales and Production level according to WHO expert recommendation is established **ATTAINED**	• Information regarding regular inspection of salt producers like frequency of inspections, person who conduct inspections, focal person for inspections, data reporting , data analysis and feedback of the inspection is required • Working pattern functioning of regular monitoring system needs to be defined • Roles and responsibilities of Regulatory persons need to be defined

Program indicators	Observations	Recommendations
6)A programme of public education and social mobilisation on the importance of IDD and the consumption of iodised salt	• Public school based salt monitoring activities to raise public demand for iodized salt. Over 10,000 schools and 2 million children were covered. Copy of the letter written to schools with proforma is enclosed as **Annexure - 5** • Government in collaboration with UNICEF, Ministry of Education, Ministry of Health conducted series of health lessons on IDD • An information package: Iodized Salt – Healthy Choice, prepared by MOH and UNICEF (Microelements – Macro Consequences, Salt Iodization, For Decision Makers, For Mass Media, For Salt Producers)\ **(Annexure - 6)** • Workshops for national journalists were conducted • **PARTIALY ATTAINED**	• Need to have a Advocacy and Communication Strategy for next three years with details regarding focal point, frequency and type of communication material and target audience (Advocacy and Communication strategy prepared for India, as an illustrative example is included as **Annexure-7)** • Need to develop a National logo for Iodized Salt. The process of giving logo to manufacturers is given in **Annexure 8** • Need to have National IDD Day. • Need to introduce IDD in all curricula - school, college, university levels • Involvement of religious leaders in regular consumption of iodised salt, everyday. (Was done in Bangladesh) • Actively consider having a Brand Ambassador, for example: Rustam Kasimhodjaev – Chess Champion **Annexure - 9** • Promote use of salt –testing kit for iodine for community awareness and social mobilization • CDs of experiences of WHO SEARO Region and films made and examples of communication material in terms of booklet, pamphlets, posters, shared with stakeholders

Program indicators	Observations	Recommendations
7) Regular data on salt iodine at factory, retail and household level	• Data on salt iodine at factory, retail and household level is available for year 2002 to 2008 **PARTIALY ATTAINED**	• Information regarding persons responsible for data collection, data reporting, data analyzing needs to be regularly collected and disseminated. • Regular feedback to factories should be given so that they can take corrective action to improve quality of iodised salt.
8) Regular laboratory data on urine iodine in school aged children with appropriate sampling for higher risk areas	• Various Surveys carried out since 1998 and data regarding Urinary Iodine Level of school children, pregnant women are available. **ATTAINED**	• Recommendation to revise the sampling methodology and frequency of data collection. • The current WHO/UNICEF/ICCIDD recommendation for sampling methodology for estimating the salt iodization is given in **Annexure 10**

Program indicators	Observations	Recommendations
9)Quality assurance of laboratories	• The Institute of Endocrinology for iodine estimation in iodized Salt – YES • For iodine estimation in urine – YES • External quality assurance EQUIP, CDC Atlanta, USA • QA at salt iodisation plant- Does not exist **NOT ATTAINED**	• It is recommended that at three important salt producing centres, three laboratories should be established with trained laboratory personnel. • The laboratories at salt iodisation plant should be supervised and supported by the above three new laboratories. • At Salt Iodization Plant, it is vital to have procedure of Internal Quality Assurance (IQA) and External Quality Assurance (IQA)
10) Presence of national database for recording of results of regular monitoring procedure	• Data are available from different Sources such as the Institute of Endocrinology, MICS 2000 and 2006, Draft NIP 2008, and Uzmedexport. • Data on incidence of Congenital Hypothyroidism is available **PARTIALY ATTAINED**	• Need to have a central place where data from different sources is collected • Need to analyze and interpret the data • Need to link data with decision making process for taking prompt corrective action

The summary of criteria for monitoring progress towards sustainable elimination of IDD in Uzbekistan is shown in Table 8

Table 8: Summary of criteria for monitoring progress towards sustainable elimination of IDD in Uzbekistan.

INDICATORS	GOALS	STATUS IN UZBEKISTAN
Salt iodization Proportion of households using adequately iodized salt	> 90%	53 % (MICS 2006) 51 % (Institute of Endocrin, 2008)
Urinary Iodine Median in the general population Median in pregnant	100-199ug/l 150-249ug/l	70 % (Inst. Endocrin, 2008) No specific data
Programmatic indicators	Attainment of eight out of 10 indicators specified in Section 6.3	YES = 2 (indicators 5 and 8) PARTIAL = 6 (1, 2, 4, 6, 7 and 10) NO = 2 (3 and 9)

8. References

1. Results of monitoring the implementation of law of Republic of Uzbekistan “on preventing Iodine deficiency Disorders” in oblasts in 2008 carried out together with Oliy majlis, Majli deputies, Scientific Research Institute of endocrinology, Republican Center for State Sanitary and Epidemiological Surveillance and UNICEF,2008

2. National Nutritional Investment Plan. Economic consequences of malnutrition in Uzbekistan,2008

3. Multi Indicator Cluster Study,UNICEF,2006

4. Prevalence of Iodine Deficiency Diseases in Uzbekistan. Prof Ismailov S.I,2009

5. Chapter 6: Indicators of the sustainable elimination of IDD” Assessment of iodine deficiency disorders and monitoring their elimination – A guide for Programme Managers, Third Edition by WHO/UNICEF/ICCIDD-2007

6. Law of the Republic of Uzbekistan “about prevention of iodine deficiency diseases”,2007