INDIA IODINE SURVEY

2018-19

INDIA FACTSHEET

NUTRITION INTERNATIONAL
Nourish Life

ICCIDD

KANTAR

BACKGROUND

Iodine is an important micronutrient required for optimal mental and physical development in human beings. Iodine Deficiency Disorders (IDD) encompass a range of disabilities and disorders such as goitre, hypothyroidism, cretinism, abortion, still-birth, mental retardation and psychomotor defects. A majority of these consequences are invisible and irreversible, but can be prevented. Iodine deficiency is the single-largest cause of preventable brain damage globally. Children born in areas where the soil is deficient in iodine have 13.5 IQ points less than those in iodine sufficient areas. In India, since arable land is largely deficient in iodine, this has created a risk of IDD for the entire population.

Based on the results from a study conducted in Kangra (Himachal Pradesh)[1], India became the first country to initiate a National Goitre Control Program (NGCP), an iodisation program in 1962 which was renamed in 1996 as National Iodine Deficiency Disorders Control Program (NIDDCP). Universal Salt Iodisation (USI) was adopted as a strategy to ensure more than 90% of the population has iodised salt available at the household level. Nutrition International (NI) along with the All India Institute of Medical Sciences (AIIMS), New Delhi and Indian Coalition for the Control of Iodine Deficiency Disorders (ICCIDD) commissioned a first-of-its kind national level survey titled 'India Iodine Survey 2018-19' across all 29 states and 7 Union Territories (UTs) in India to estimate the household coverage of iodised salt and iodine status of the population, wherein women in the reproductive age (15-49 years) were considered as a proxy for the population. Kantar Public was chosen to conduct this survey.

---

[1] Sooch SS, Ramalingaswami V. Preliminary Report of An Experiment in the Kangra valley for The Prevention of Himalayan Endemic Goitre With Iodized Salt. Bull World Health Organ. 1965; (3):299–315. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2555234/

INDIA PROFILE

Total population[2]	1,210,854,977
Population in rural areas[2] (%)	68.8
Population in urban areas[2] (%)	31.2
Women in the reproductive age (15-49 years)[2] (%)	25.7
Female literacy rate[2] (%)	65.5
Total production of iodised salt in million metric tons (MMT), 2017-18[3]	6.8

KEY OBJECTIVES

The primary objective of the survey was to:

- Estimate the coverage of adequately iodised salt at the household level.

The secondary objectives of the survey were to:

- Assess the iodine status among pregnant women, lactating women with an infant less than 6 months, and non-pregnant non-lactating women of reproductive age (15 to 49 years) by measuring their median Urinary Iodine Concentration (UIC) levels;
- Assess knowledge and practices regarding IDD and iodised salt amongst respondents;
- Use the survey findings for strengthening the iodine deficiency disorder control program.

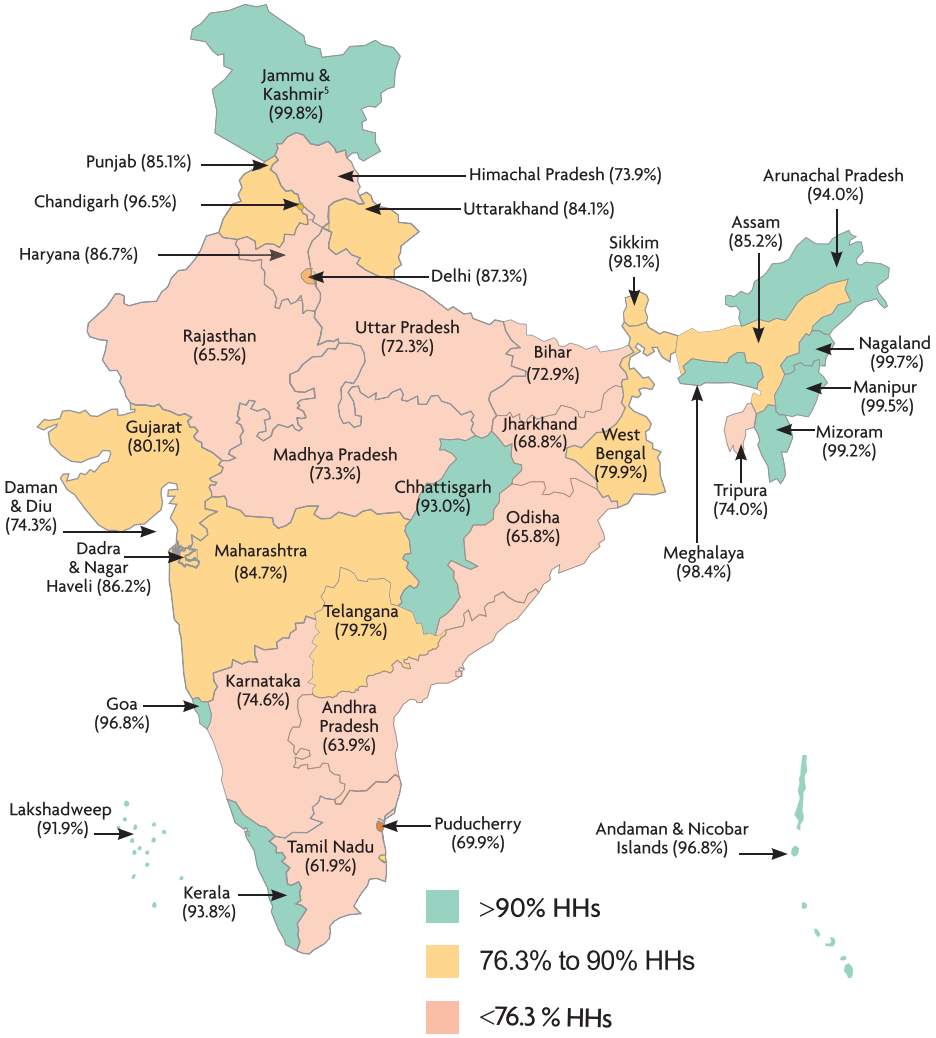
The survey covered a total of 21,406 households in 702 primary sampling units (PSUs) in 29 states and 7 UTs in India. The survey followed a multi-stage cluster sampling with clusters selected using a probability proportional to size (PPS) method. The fieldwork was undertaken between October, 2018 and March, 2019. Salt samples were collected to estimate the iodine content at the household level through iodimetric titration in the laboratory and urine samples were collected to estimate the status of urinary iodine concentration among pregnant, lactating and non-pregnant non-lactating women in the reproductive age of 15 to 49 years.

[2] Census 2011, Office of the Registrar General & Census Commissioner, GoI, India (http://censusindia.gov.in/)

[3] Annual Report of Salt Department 2017-18, GOI, India (http://www.saltcomindia.gov.in/salt-ar-2018.pdf)

HOUSEHOLD COVERAGE OF IODISED SALT

Figure 1: Household coverage of iodised salt (≥15 ppm)[4] by state/UTs (%)



KEY HIGHLIGHTS

- The household coverage of iodised salt (≥15 ppm) at the national level is 76.3%.
- The percentage of households consuming refined salt is 82.1%
- The median Urinary Iodine Concentration (UIC) (µg/L) for pregnant women is 173.4, lactating women is 172.8 and for non-pregnant non-lactating women it is 178.0 which is adequate as per WHO guidelines for all three categories

76.3% NATIONAL COVERAGE	Front runner states/UTs*	**Jammu & Kashmir, Manipur, Meghalaya, Mizoram and Nagaland**
	Aspirational states/UTs**	**Andhra Pradesh, Odisha, Puducherry, Rajasthan and Tamil Nadu**

[4] The recommended daily intake of iodine for adolescents (above 12 years) and adults is 150 µg. Considering an average per capita daily salt consumption of 10 grams, the salt standard is fixed at 15 parts per million (ppm) or 150 mg per 1 kg of iodised salt (https://www.who.int/nutrition/publications/en/idd_assessment_monitoring_elimininationation.pdf).

[5] Due to some unforeseen circumstances, beyond the control of the survey team, the data collection could only be completed in 12 out of 20 PSUs in Jammu & Kashmir state. These 12 PSUs belong to Kashmir area.

**States with highest coverage of iodised salt at household level are termed here as front runner states and are presented in alphabetical order.*

*** States with lowest coverage of iodised salt at household level are termed here as aspirational states and are presented in alphabetical order.*

Note : The N is based on unweighted cases and the results are weighted

HOUSEHOLD COVERAGE OF IODISED SALT

Figure 2: Household coverage of iodised salt at the national level (%)

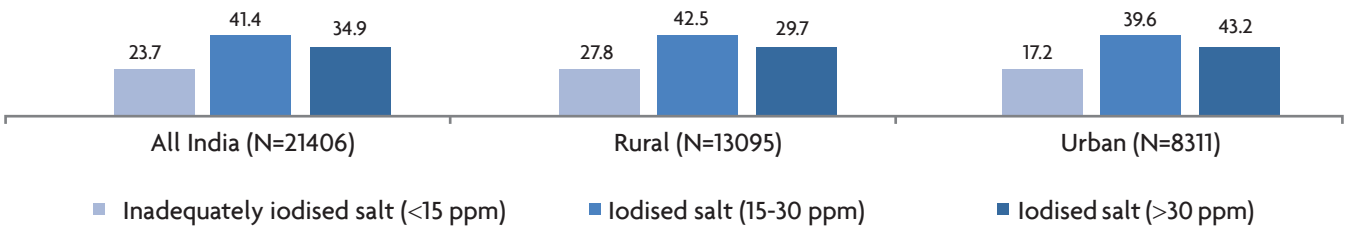


Figure 3: Household coverage of iodised salt across zones in India (%)

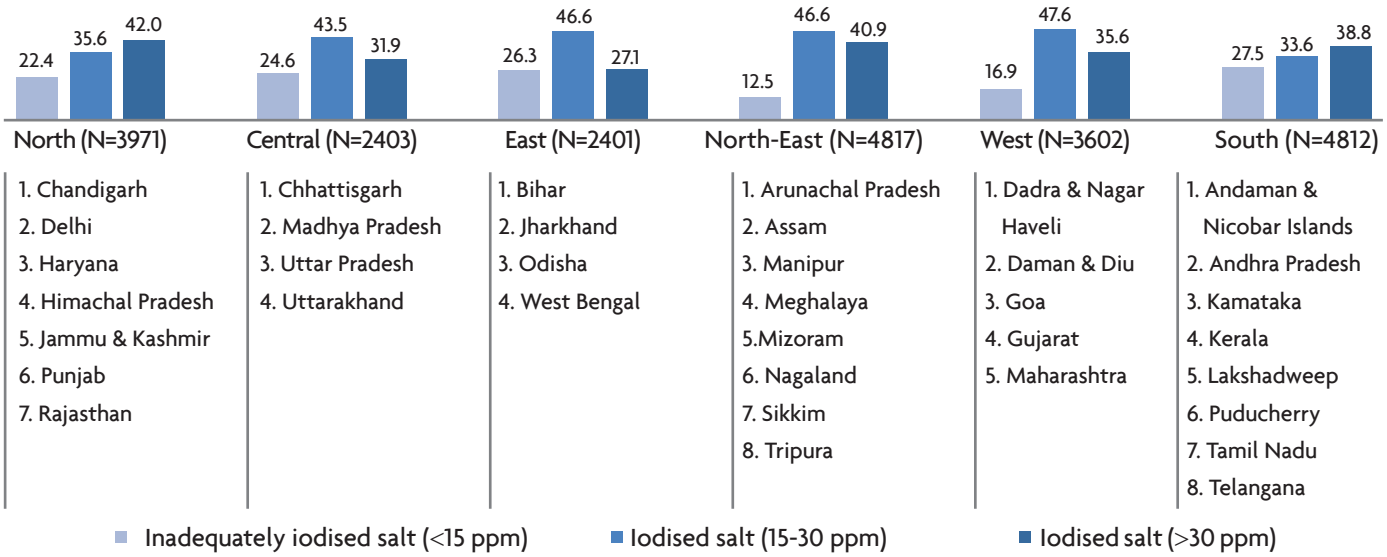
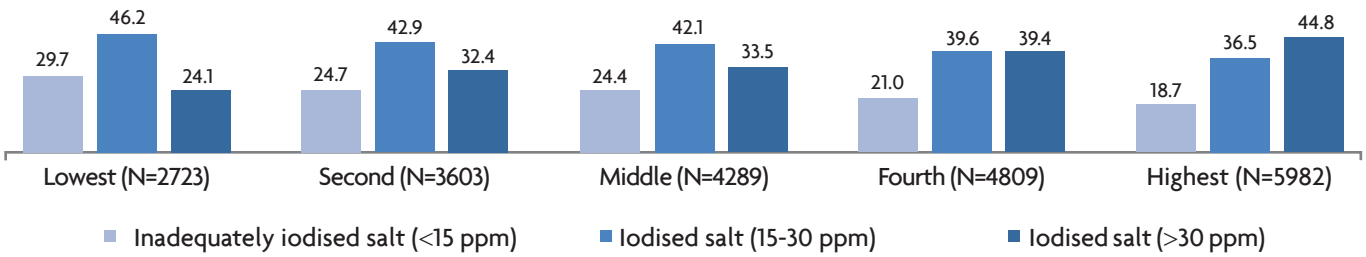


Figure 4: Household coverage of iodised salt by wealth quintile (%)

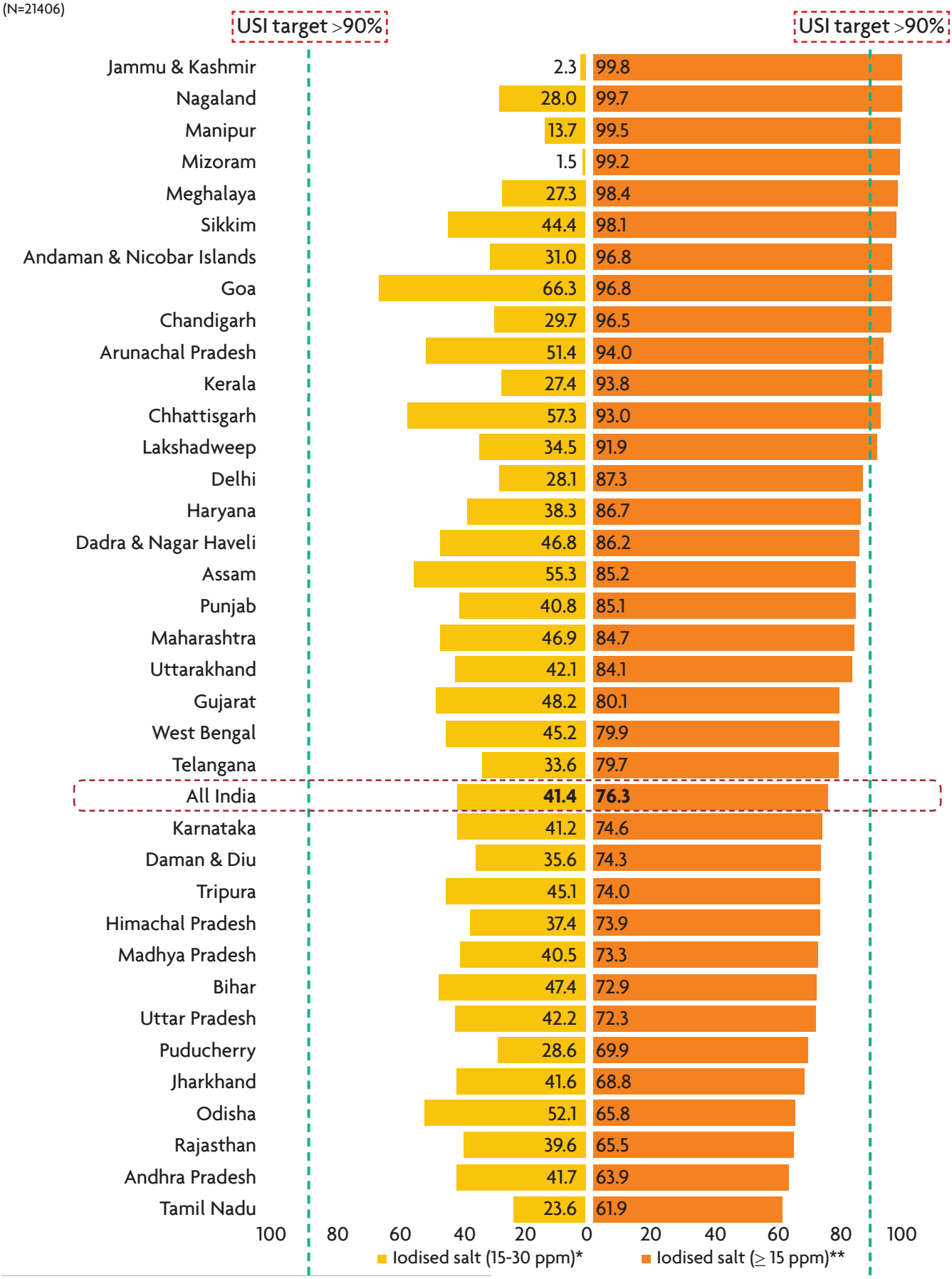


Note : The N is based on unweighted cases and the results are weighted

HOUSEHOLD COVERAGE OF IODISED SALT

Figure 5: Household coverage of iodised salt at national and state/UTs level (%)

(N=21406)



Note : Target for achievement of Universal Salt Iodisation (USI) is > 90%

*According to the gazette notification of Government of India, dated August 2, 2018, the standard is 20 to 30 parts per million (ppm) (dry weight basis) at manufacture level and 15 to 30 ppm (dry weight basis) in the distribution channel including the retail level.

**According to the Food Safety and Standards (Food products standards and food additives) regulations, 2011, the standard was not less than 30 ppm (dry weight basis) at the manufacture level and not less than 15 ppm (dry weight basis) in the distribution channel including the retail level.

Note : The N is based on unweighted cases and the results are weighted

MEDIAN URINARY IODINE CONCENTRATION (UIC)[6] (µg/L)

Figure 6a: Median UIC (µg/L) among pregnant women across place of residence and across zones in India

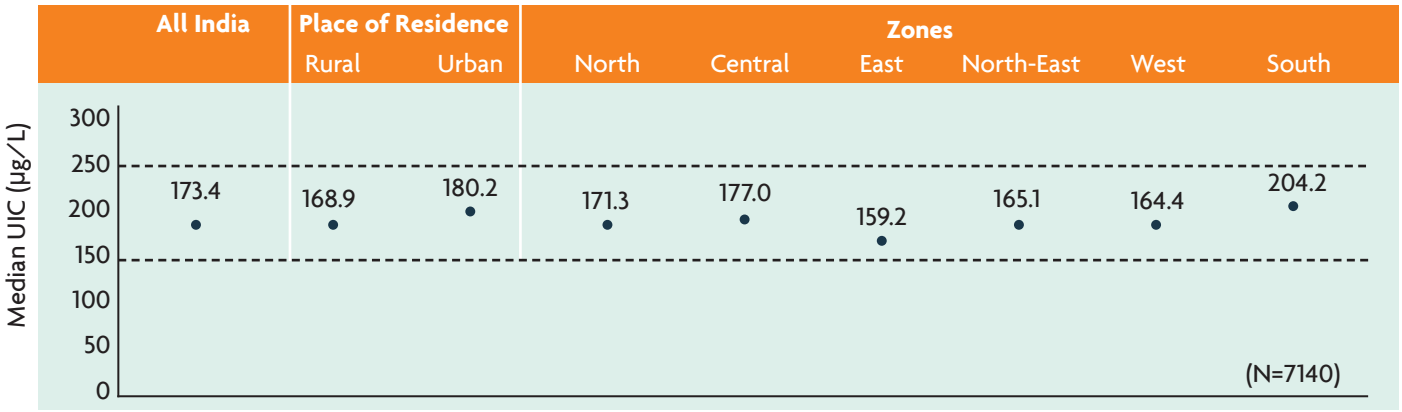


Figure 6b: Median UIC (µg/L) among lactating women across place of residence and across zones in India

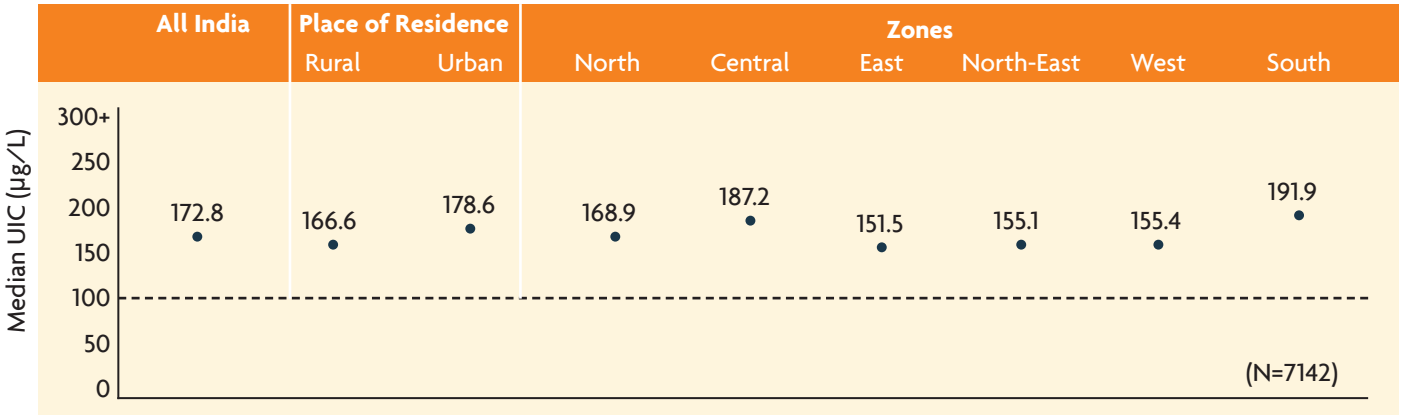
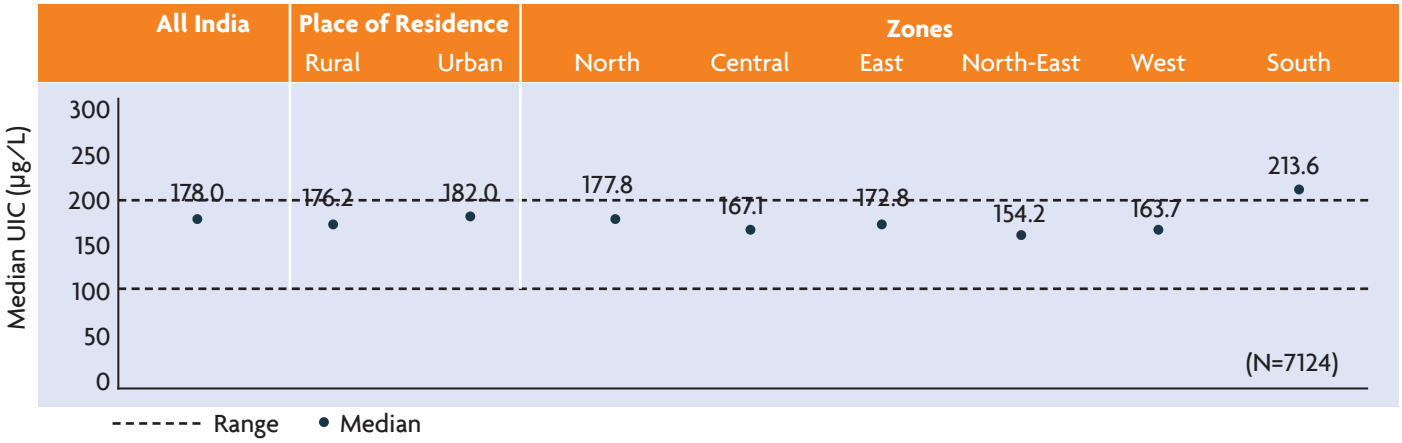


Figure 6c : Median UIC (µg/L) among non-pregnant non-lactating women across place of residence and across zones in India



Epidemiologic criteria for assessing iodine nutrition based on median urinary iodine concentrations (µg/L) in different target groups

Iodine Intake	Pregnant women	Lactating women	Non-pregnant non-lactating women
Insufficient	-	-	<20
Insufficient	-	-	20-49
Insufficient	<150	<100	50-99
Adequate	150-249	≥100	100-199
Above requirements	250-499	-	200-299
Excessive*	≥500	-	≥300

[6] *WHO/UNICEF/ICCIDD. Assessment of iodine deficiency disorders and monitoring their elimination: a guide for programme managers, 3rd ed. Geneva: World Health Organization; 2007. (http://whqlibdoc.who.int publications/2007/9789241595827_eng.pdf, accessed 20 August 2013)*

- Urinary iodine concentration is the prime indicator of nutritional iodine status and is used to evaluate population-based iodine supplementation. Urinary iodine values from populations are usually not normally distributed. Therefore, the median rather than the mean is the preferred measure of central tendency.

*The term excessive means in excess of the amount required to prevent and control iodine deficiency.

Note : The N is based on unweighted cases and the results are weighted

MEDIAN URINARY IODINE CONCENTRATION (UIC) (µg/L)

Figure 7a: Median UIC (µg/L) among pregnant women across wealth quintiles

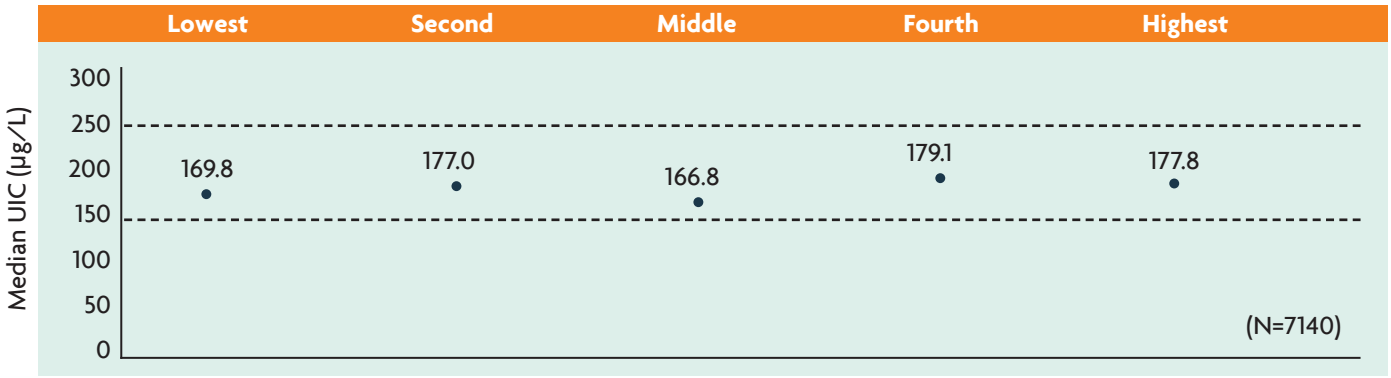


Figure 7b: Median UIC (µg/L) among lactating women across wealth quintiles

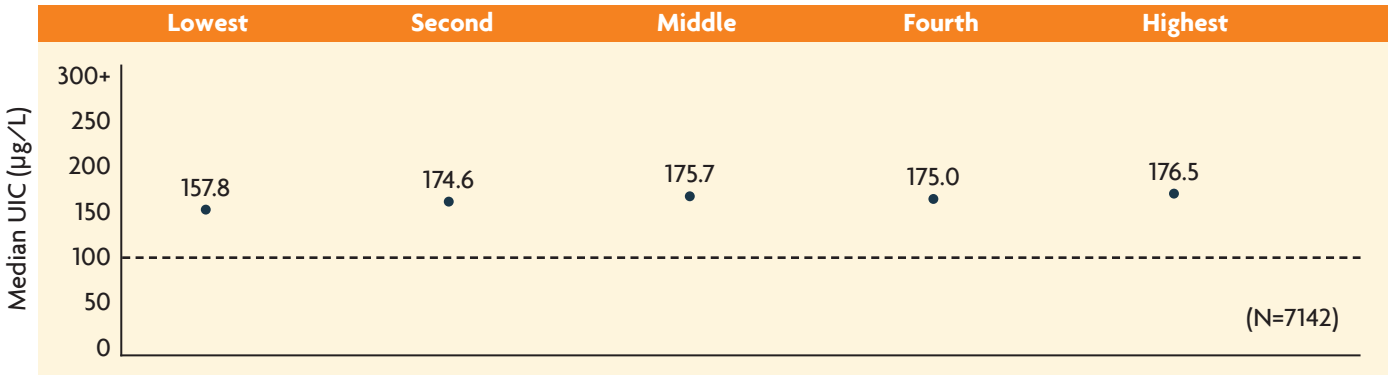
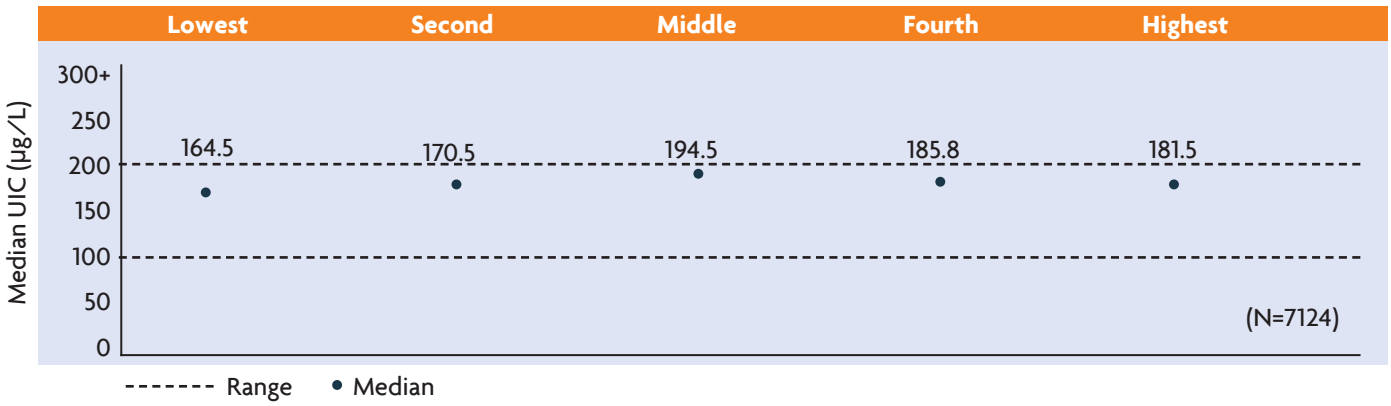


Figure 7c: Median UIC (µg/L) among non-pregnant non-lactating women across wealth quintiles



Epidemiologic criteria for assessing iodine nutrition based on median urinary iodine concentrations (µg/L) in different target groups

Iodine Intake	Pregnant women	Lactating women	Non-pregnant non-lactating women
Insufficient	-	-	<20
Insufficient	-	-	20-49
Insufficient	<150	<100	50-99
Adequate	150-249	≥100	100-199
Above requirements	250-499	-	200-299
Excessive*	≥500	-	≥300

[6] *WHO/UNICEF/ICCIDD. Assessment of iodine deficiency disorders and monitoring their elimination: a guide for programme managers, 3rd ed. Geneva: World Health Organization; 2007. (http://whqlibdoc.who.int publications/2007/9789241595827_eng.pdf, accessed 20 August 2013)*

- Urinary iodine concentration is the prime indicator of nutritional iodine status and is used to evaluate population-based iodine supplementation. Urinary iodine values from populations are usually not normally distributed. Therefore, the median rather than the mean is the preferred measure of central tendency.

**The term excessive means in excess of the amount required to prevent and control iodine deficiency.*

Note : The N is based on unweighted cases and the results are weighted

KNOWLEDGE, ATTITUDE AND PRACTICE

Figure 8: Respondents who have heard of iodised salt by place of residence (%)

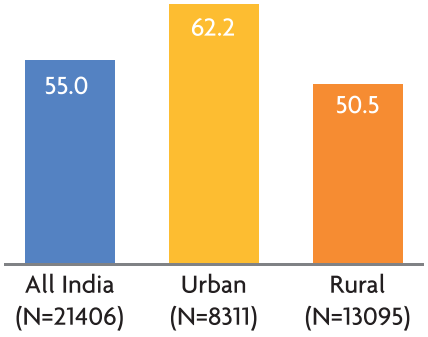


Figure 9: Top benefits of iodised salt as expressed by respondents (%)

*Multiple responses

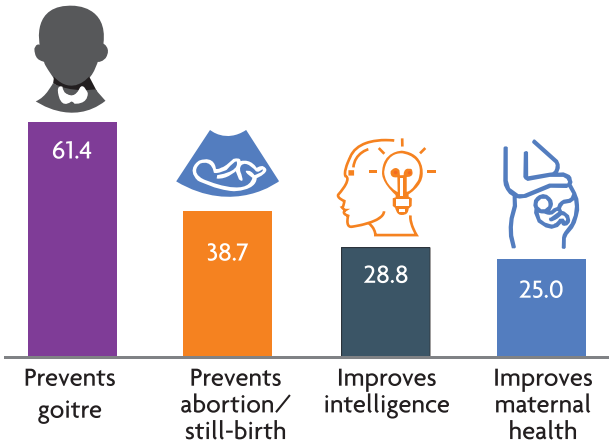
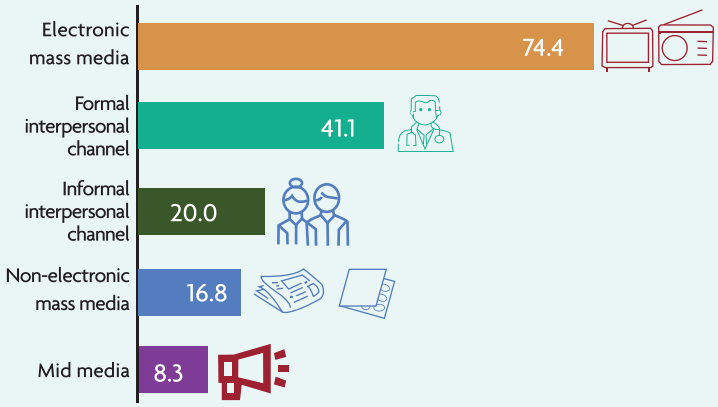


Figure 10: Source of information about iodised salt (%)

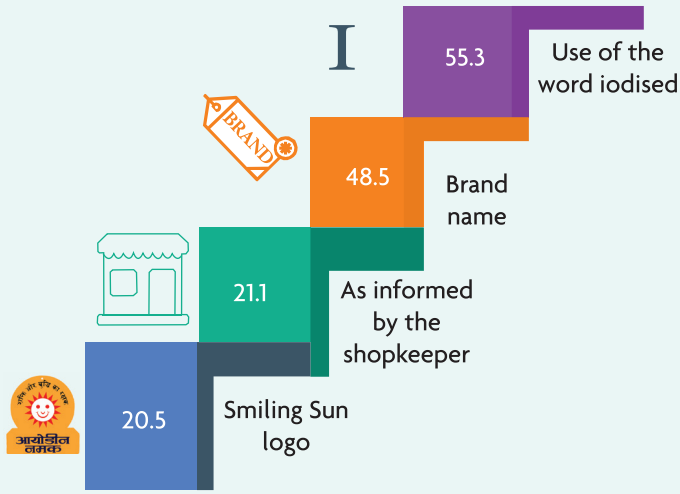
(N=9370)* *Multiple responses



**Only among those respondents who had heard of iodised salt, excluding respondents who did not report iodised salt as a good characteristic of cooking salt*

Figure 11: Identification of iodised salt (%)

(N=14151) *Multiple responses



Note : The N is based on unweighted cases and the results are weighted

KNOWLEDGE, ATTITUDE AND PRACTICE

Figure 12: Key factors determining the purchase of salt (%)

*Multiple responses

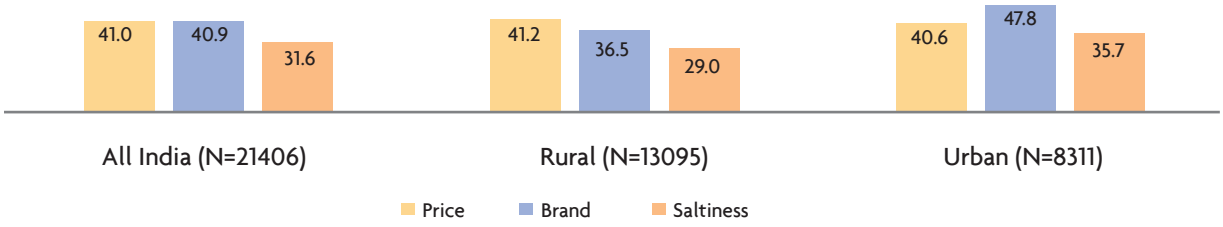


Figure 13: Decision maker for buying salt (%)

(N=21406)

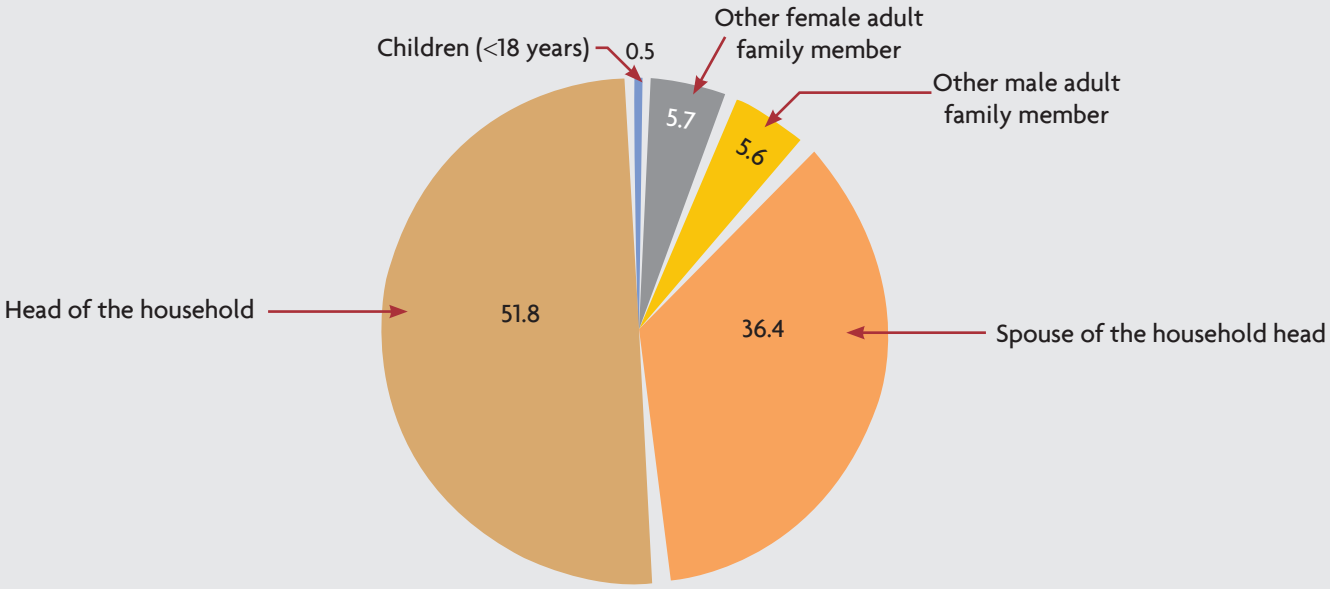


Figure 14: Types of salt available at household level (%)

(N=21406)

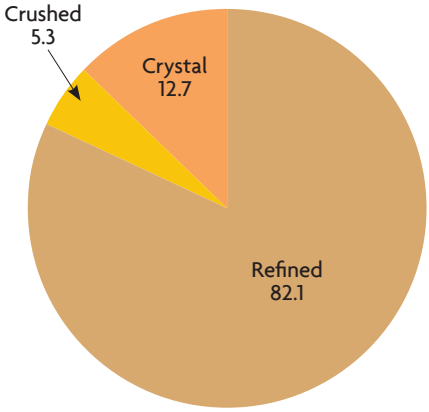
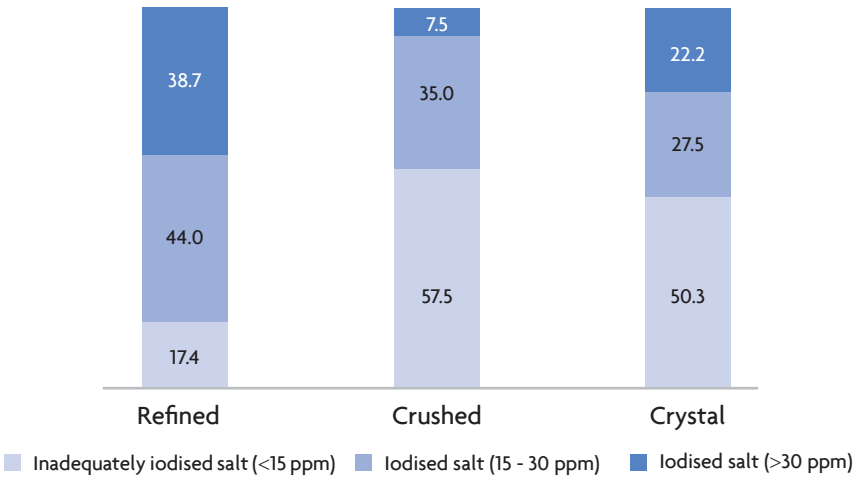


Figure 15: Iodisation level in different types of salt (%)

(N=21406)



Note : The N is based on unweighted cases and the results are weighted

SUMMARY

The household coverage of iodised salt (≥15ppm) at the national level is 76.3%.

Among 29 states and 7 UTs, the front runner states with the highest iodine consumption through salt (≥15 ppm) are Jammu & Kashmir (99.8%), Nagaland (99.7%), Manipur (99.5%), Mizoram (99.2%) and Meghalaya (98.4%).

The aspirational states and UTs with lowest household level coverage of iodised salt (≥ 15 ppm) are Tamil Nadu (61.9%), Andhra Pradesh (63.9%), Rajasthan (65.5%), Odisha (65.8%), Jharkhand (68.8%) and Puducherry (69.9%).

The median Urinary Iodine Concentration (UIC)(µg/L) for pregnant women was 173.4, for lactating women was 172.8 and for non-pregnant non-lactating women was 178.0 which was found to be adequate for all three respondent groups as per WHO guidelines.

55% of the respondents reportedly had heard about iodised salt and 61.4% of them mentioned prevention of goitre as the primary benefit.

Among 55% of the respondents who had heard about iodised salt, major identifiers reported by them were the word 'iodised' (55.3%), brand name (48.5%), information from the shopkeeper (21.1%) and the Smiling Sun logo (20.5%).

Awareness about iodised salt among urban respondents (62.2%) was higher than rural respondents (50.5%).

The household head (51.8%) was found to be the primary decision maker for purchasing cooking salt.

About 74.4% of the respondents found electronic mass media (TV and Radio) and 41.1% identified formal interpersonal communication channels as major sources of information on iodised salt.

Price (41%) and brand (40.9%) were found to be the two most important factors in decision making for purchase of cooking salt.

NUTRITION INTERNATIONAL
Nourish Life

B-28, 2nd Floor, Qutab Institutional Area, New Delhi – 110016, India
+91 11 46862000 +91 11 46862048
www.nutritionintl.org

Canada

Nutrition International's work is supported by the Government of Canada, through Global Affairs Canada and other generous donors.