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# INDIA IODINE SURVEY

## REPORT 2018-19

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## NATIONAL REPORT

SEPTEMBER 2019

# Suggested Citation:

Nutrition International, ICCIDD, and Kantar, 2019. India Iodine Survey 2018-19 National Report, New Delhi, India.

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# FOREWORD

A country is only as strong as her people – people need good nutrition to determine good public health, this, in turn, determines the overall economic development of the nation. Nutrition is only half-understood if not wholly neglected. Households comprehend the importance of macronutrients but micronutrients, the foot soldiers of nutrition that ensure protection against most illnesses and congenital problems, are overlooked.

Iodine is a micronutrient that is essential for optimal mental and physical development and is needed in daily doses throughout the life of an individual. Studies have shown that children born in areas where the soil is deficient in iodine have 13.5 IQ points less than those in iodine sufficient areas. Deficiency of iodine is also the single largest cause of preventable brain damage. Salt, with a uniform uptake amongst all income groups, including the poorest, serves as the most suitable vehicle to deliver iodine to an entire population. To address the Iodine Deficiency Disorders (IDD) in the population, the Government of India initiated National Goitre Control Program (NGCP) in 1962, which was renamed as National IDD Control Program (NIDDCP) in 1992. Significant progress has been made in improving the availability of adequately Iodized salt at the household level in all states and Union Territories (UTs).

Nutrition International (NI) along with the Association for Indian Coalition for the Control of Iodine Deficiency Disorders (ICCIDD) commissioned the 'India Iodine Survey 2018-19' across all 29 states and seven Union Territories (UTs) in India. The study provides state-level estimates of household coverage of iodised salt and estimates of urinary iodine status of the three major population groups – pregnant women, lactating mothers and non-pregnant and non-lactating women of reproductive age.

The survey findings provide significant insights that have the potential to impact policy and influence government programmes to reduce IDD across the country. We are certain that the results of this survey will be widely used for strengthening the salt iodisation programme in India and will reinforce the discussions and efforts among various stakeholders including government, academia, industry, development partners and media. We hope it will enable the scale-up of sustainable efforts to achieve Universal Salt Iodisation (USI), which will then lead to the reduction and elimination of IDD.

We would like take this opportunity to congratulate and thank all the stakeholders – national and state governments, development partners, academic experts, and researchers, who contributed towards making this survey a success. They have played a critical role in the development of this study and we look forward to continuing our collaboration with them to achieve and sustain USI and to shape the future of the IDD control program in the country. We are also thankful to all participants and respondents who have dedicated their time and consented to provide requisite details and samples for the successful completion of the study.

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# ACKNOWLEDGEMENTS

We are grateful to the Technical Advisory Group (TAG) members constituted for the 'India Iodine Survey 2018-19', who provided continuous methodological, technical, and analytical guidance through the TAG meetings and one-on-one discussions.

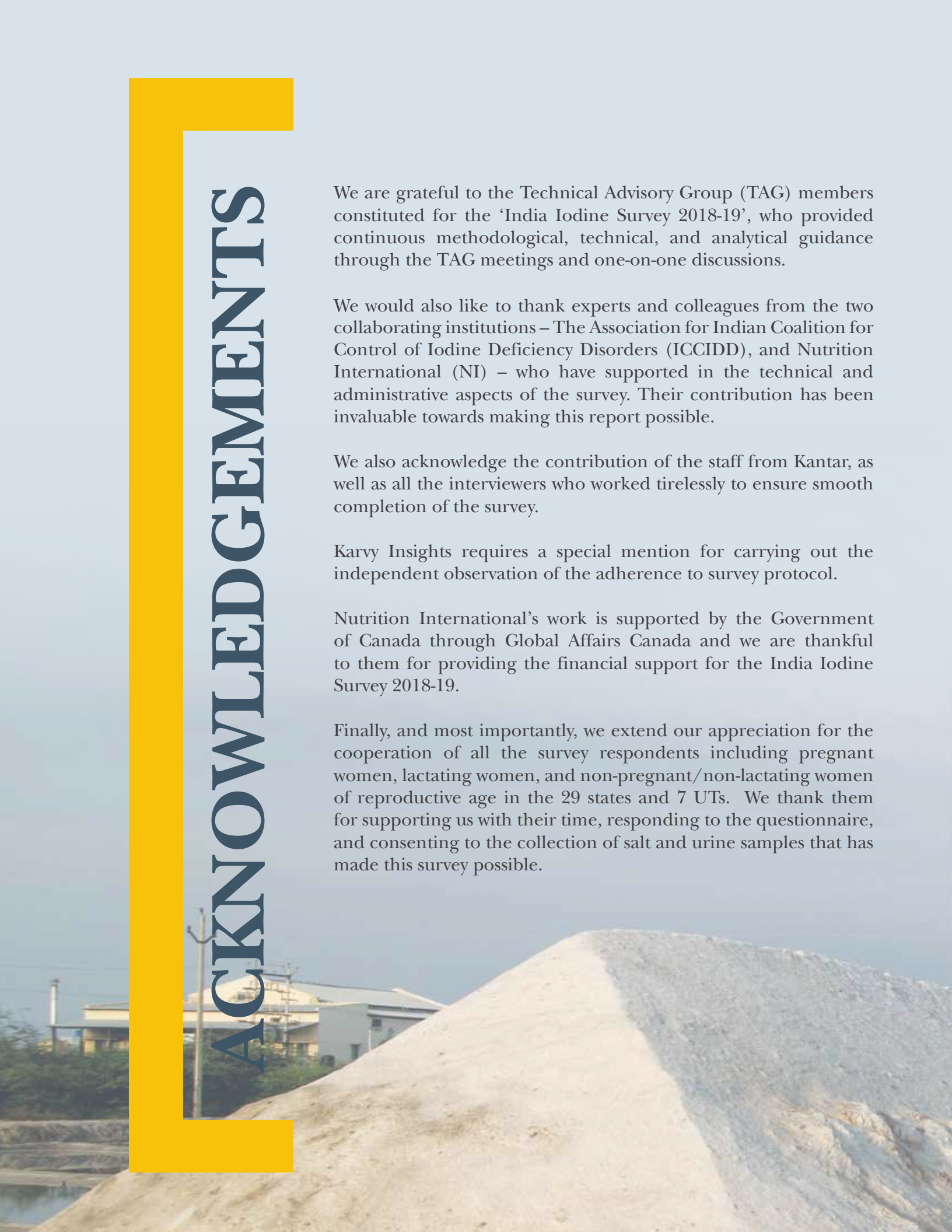
We would also like to thank experts and colleagues from the two collaborating institutions – The Association for Indian Coalition for Control of Iodine Deficiency Disorders (ICCIDD), and Nutrition International (NI) – who have supported in the technical and administrative aspects of the survey. Their contribution has been invaluable towards making this report possible.

We also acknowledge the contribution of the staff from Kantar, as well as all the interviewers who worked tirelessly to ensure smooth completion of the survey.

Karvy Insights requires a special mention for carrying out the independent observation of the adherence to survey protocol.

Nutrition International's work is supported by the Government of Canada through Global Affairs Canada and we are thankful to them for providing the financial support for the India Iodine Survey 2018-19.

Finally, and most importantly, we extend our appreciation for the cooperation of all the survey respondents including pregnant women, lactating women, and non-pregnant/non-lactating women of reproductive age in the 29 states and 7 UTs. We thank them for supporting us with their time, responding to the questionnaire, and consenting to the collection of salt and urine samples that has made this survey possible.



# ABBREVIATIONS

| | |
|---|---|
| AAY | Antyodaya Anna Yojana |
| ANM | Auxiliary Nurse Mid-Wife |
| APL | Above Poverty Line |
| ASHA | Accredited Social Health Activist |
| AWW | Anganwadi Worker |
| BPL | Below Poverty Line |
| CAPI | Computer Assisted Personal Interviewing |
| HH | Household |
| HoH | Head of the Household |
| ICCIDD | The Association for Indian Coalition for Control of Iodine Deficiency Disorders |
| ID | Identification Details |
| IDD | Iodine Deficiency Disorders |
| IQC | Internal Quality Control |
| LW | Lactating Women |
| MIS | Management Information System |
| NISI | National Iodine and Salt Intake Survey |
| NFHS | National Family Health Survey |
| NGCP | National Goitre Control Programme |
| NPNLW | Non-Pregnant Non-Lactating Women |
| PAPI | Pen and Paper Personal Assisted Interviewing |
| PSU | Primary Sampling Unit |
| PW | Pregnant Women |
| STK | Salt Test Kit |
| SSU | Secondary Sampling Unit |
| UIC | Urinary Iodine Concentration |
| UNICEF | United Nation's Children Fund |
| USI | Universal Salt Iodisation |
| WHO | World Health Organisation |
| WRA | Women of Reproductive Age |

# EXECUTIVE SUMMARY

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 are fully preventable.

Globally, iodine deficiency is the single-largest cause of preventable brain damage. Children born in areas where the soil is deficient in iodine have 13.5 IQ points less than those in iodine sufficient areas.

Based on the results from a study conducted in Kangra valley (Himachal Pradesh)[1], India became one of the first countries to initiate a National Goitre Control Program (NGCP), a public health program in 1962 which was renamed in 1992 as National Iodine Deficiency Disorders Control Program (NIDDCP). Universal Salt Iodisation (USI) was adopted as a strategy to ensure more than 90 per cent of the population has access to adequetely iodised salt available at the household level.

Nutrition International (NI) along with the Association for the Indian Coalition for the Control of Iodine Deficiency Disorders (ICCIDD) commissioned a first-of-its kind of 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 Indians, wherein women in the reproductive age (15-49 years) were considered as a proxy for the population. Kantar 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/*

## 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.

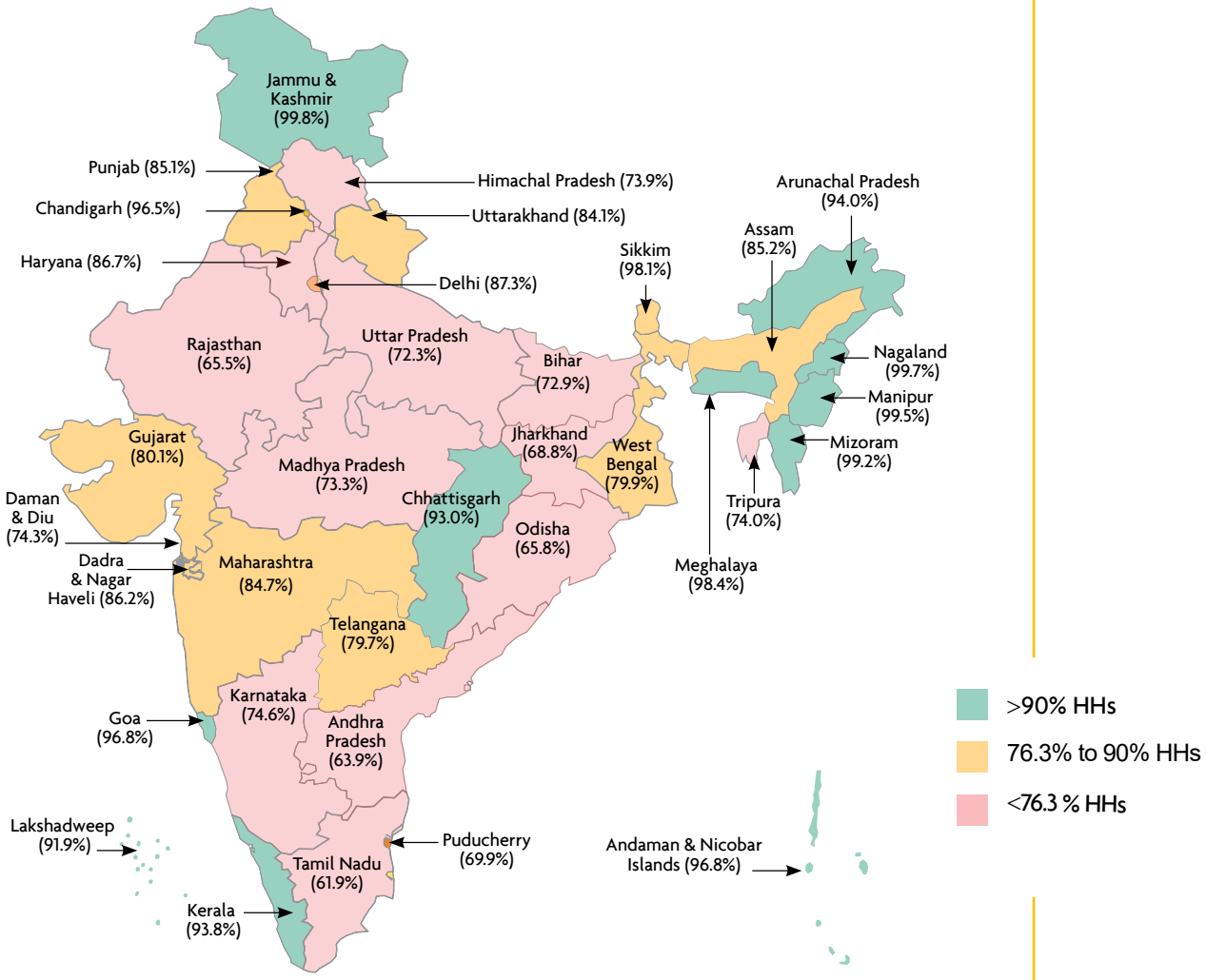
The survey covered a total of 21,406 households in 702 Primary Sampling Units (PSUs) across 29 states and 7 UTs in India. The survey followed a multi-stage cluster sampling with clusters selected using a probability proportional to size (PPS) method. The fieldwork was undertaken between October, 2018 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.

## Key findings

- At the national level, the household coverage with iodine content equal to or more than 15 Parts Per Million (ppm) was 76.3 per cent. Salt iodised with some iodine, equal to or more than 5 ppm at the household level was 92.4 per cent.
- Among 29 states and 7 UTs, the front runner states with the highest household coverage with iodine content more than and equal to 15 ppm were 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 coverage with iodine content more than and equal to 15 ppm were Tamil Nadu (61.9%), Andhra Pradesh (63.9%), Rajasthan (65.5%), Odisha (65.8%), Jharkhand (68.8%) and Puducherry (69.9%).
- The percentage of households consuming refined salt was 82.1.

The state and UT wise household coverage of iodised salt has been presented in the map below:

**Household coverage of iodised salt (≥15 ppm)[2] by state/UT (%)**




- At the national level, the median Urinary Iodine Concentration (UIC) for pregnant women was 173.4 µg/L, for lactating women was 172.8 µg/L and for non-pregnant non-lactating women it was 178.0 µg/L. Across place of residence, the median UIC in urban areas was slightly higher (180.2 µg/L) as compared to rural areas (168.9 µg/L).
- Across place of residence, the median UIC in urban areas for all three respondent groups was slightly higher as compared to rural areas.
- More than half of the respondents (55%) reportedly had heard about iodised salt and 61.4 per cent of them mentioned prevention of goitre as the primary benefit.
- Among 55 per cent of the respondents who had heard about iodised salt, major identifiers reported by them were the word 'iodised' (55.3%), brand

2. *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_eliminination.pdf).*

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

Based on this survey findings, the report suggests the following way forward:

- The data shows that 13 states/UTs have achieved USI and so it is recommended that the successful strategies from these states could be contextualized and replicated in the remaining states/UTs to achieve and sustain USI nationally.
- Enforcement and monitoring of iodised salt quality needs to prioritised by government agencies at state level.
- Inclusion of estimation Urinary Iodine Concentration (UIC) at national surveys, as an indicator to report the iodine status of the population along with household coverage of adequately iodised salt tested through iodometric titration could be consider by Ministry of Health and Family Welfare, GoI .
- The survey also reveals that a larger proportion of refined salt is adequately iodised and hence efforts are needed to promote production and consumption of refined iodised salt.

It is envisaged that this survey will be quite useful for researchers, programmers and policy makers to engage in further discussions to craft a road map to achieve universal salt iodisation. The evidence from this survey could be taken into consideration, while treading the path towards reaching the last mile to achieve and sustain USI in the country.

CHAPTER - 1

# INTRODUCTION

## Background of the survey

Vitamin and mineral deficiencies have a significant impact on human welfare and the economic development of communities and nations. These deficiencies can lead to serious health problems, including reduced resistance to infectious disease, blindness, lethargy, reduced learning capacity, mental retardation and, in some cases, to death. Globally, the three deficiencies of greatest public health significance are those of vitamin A, iron and iodine. These nutrients are referred to as micronutrients because the body needs them in minute quantities for growth, development and maintenance[3].

Iodine is an element that is needed for the production of thyroid hormone, which in turn regulates many functions in the body, including the development of the brain[4]. The body does not synthesis iodine, so it is an essential part of our diet. If we do not have enough iodine in our body, our body can not synthesis enough thyroid hormone. Thus, iodine deficiency can lead to enlargement of the thyroid glands (hypothyroidism) and mental retardation, especially in infants and children whose mothers were iodine deficient during pregnancy[5].

Iodine Deficiency Disorders (IDD) are due to deficiency in iodine in the soil. Many of consequences of IDD are invisible and irreversible but at the same time preventable. Worldwide, iodine deficiency is the single most important preventable cause of brain damage[6]. Iodine deficiency is a significant public health problem for many populations throughout the world, particularly for pregnant women and young children. Disorders caused by severe iodine deficiency before or during pregnancy, ranging from decreased fertility to trophoblastic or embryonic damage, miscarriage or increased infant mortality, cretinism, and psychomotor defects. Severe deficiency causes both maternal and foetal hypothyroidism and is associated with poor obstetric outcomes like spontaneous abortion, prematurity, stillbirth or congenital anomalies.

*3. http://www.fao.org/ag/agn/nutrition/household_micronutrients_en.stm*

*4. Institute of Medicine (US) Panel on Micronutrients. Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc. Washington (DC): National Academies Press (US); 2001. Chapter 8, Iodine. Available from: https://www.ncbi.nlm.nih.gov/books/NBK222323/*

*5. American Thyroid Association (2007) Retrieved on 15 July, 2011 from www.thyroid.org*

*6. Assessment of iodine deficiency disorders and monitoring their elimination: a guide for programme managers, World Health Organization; 2007. ICCIDD, UNICEF, WHO. Geneva.*

Globally two billion people are at risk of iodine deficiency disorders due to insufficient iodine intake[7]. WHO, UNICEF, and ICCIDD[8] recommend that the daily intake of iodine should be as follows:

**TABLE 1.1: WHO RECOMMENDED DAILY INTAKE OF IODINE**

| Population group | Daily dose of iodine intake (µg/day) |
|---|---|
| *Pregnant women* | 250 |
| *Lactating women* | 250 |
| *Women of reproductive age (15-49 years)* | 150 |
| *Children <2 years* | 90 |

Universal Salt Iodisation (USI) is the main strategy to eliminate iodine deficiency. Over the past decades, national salt iodisation programs have been introduced and scaled up in many countries.The basic concept of USI implies that all edible salt (all salt for human consumption and animal) should be iodised. However, to be fully effective in correcting iodine deficiency, salt must not only reach the entire affected population–in particular those groups that are the most susceptible; pregnant women and young children–but it also needs to be adequately iodised.

The programming and monitoring of iodine reach have focused mainly on iodised salt purchased and consumed within households and iodine status has been measured through urinary iodine concentration (UIC) in school-age children[9].

In India, according to NFHS-3, 2005-06, 76.1 per cent of households reported the availability of any iodised salt tested by using STKs. The National Iodine and Salt Intake (NISI), 2014-15 reported the household coverage of iodised salt (any iodine) was 92.0 per cent as tested by iodometric titration, while the coverage of households with adequately iodised salt (iodine ≥ 15 ppm) was 78.1 per cent. Fourteen per cent of households were using inadequately iodised salt (5 to 14.9 ppm), while the remaining 8.0 per cent of households were using salt that had no iodine (< 5 ppm). NFHS-4, 2015-16, revealed that 93.1 per cent of the households had the availability of iodised salt, tested through Spot Test Kits (STKs).

Realising the magnitude of the problem, India was among one of the first countries in the world to initiate a public health programme on salt iodisation

7. *de Benoist B, McLean E, Andersson M,Rogers L. Iodine deficiency in 2007:global progress since 2003. Food Nutr Bull.2008; 29:195–202*

8. *WHO, UNICEF, ICCIDD. Recommended iodine levels in salt and guidelines for monitoring their adequacy and effectiveness. Geneva, World Health Organization, 1996 (unpublished document WHO/NUT/96.13; available on request from Department of Nutrition for Health and Development, World Health Organization, 1211 Geneva 27,Switzerland)*

9. *http://ign.org/newsletter/idd_nov12_iodine_nutrition_landscape_analysis.pdf*

to address iodine deficiency disorders, which dates back to the '50s. As one of the most successful initiatives, the government of India established The National Goitre Control Programme (NGCP) in 1962 with the objectives to supplement the intake of iodine to the entire population. This program was revised to the National Iodine Deficiency Disorder Program (NIDDCP) in 1992. As per the surveys conducted by the Directorate General of Health Services, Indian Council of Medical Research, health institutions and the state health directorates, out of 414 districts surveyed in all the 29 states and 7 UTs, 337 districts are endemic, i.e. where the prevalence of IDD is more than 5.0 per cent[10]. There is an increased demand for iodine during pregnancy and lactation; thus, there is a need for additional iodine in these high-risk population to prevent iodine deficiency and its associated disorders. Hence, this survey was undertaken to determine the iodine status at the household level and especially among all women of reproductive age (15 to 49 years) including pregnant women, lactating women and non-pregnant non-lactating women in India at the state/UT level.

## The rationale of the survey

The rationale for this survey was to generate national and sub-national level representative data on iodine content in cooking salt and iodine status of the population as a measure of the performance of the salt iodisation programme in India and to ensure that the whole population in India is protected from IDD.

## Survey objectives[11]

### 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 (PW), lactating women (LW) with an infant less than six months, and non-pregnant non-lactating women (NPNLW) of reproductive age (15 to 49 years) by measuring their median UIC levels;
- Assess the knowledge and practices regarding IDD and iodised salt amongst respondents;
- Use the survey findings for improvement in iodine deficiency disorder control program.

*10.http://www.saltcomindia.gov.in/*

*11. At the time, the survey was conducted, India comprised of 29 states, one national capital territory of Delhi and six union territories. According to the Gazette of India notification dated, August 9, 2019 of The Jammu and Kashmir Reorganization Act, 2019, two union territories of Jammu and Kashmir and Ladakh have been formed, which makes the tally to 28 states, one national capital territory of Delhi and eight union territories.*

## Respondent groups

The urine sample was collected from women of reproductive age (15 to 49 years) as they were considered as a proxy for the population, with special focus on the pregnant and lactating women considering their additional requirement for iodine. Salt samples were collected from the household of the selected respondent group.

The target population groups are:
1. Pregnant women (PW)
2. Lactating women (LW) (with an infant less than six months)
3. Non-Pregnant Non-Lactating Women (NPNLW)

Information regarding demographic and socio-economic characteristics, knowledge about iodised salt and IDD were obtained in a structured questionnaire administrated to the adult member[12] of the target population households as per the following order of preferences:

1. ***Preference 1:*** Wife of the head of household or female head of the household
2. ***Preference 2:*** Other adult female member having decision making capacity
3. ***Preference 3:*** Any adult member in the household

## Geographic coverage

The survey covered all 29 states and 7 UTs in India (both rural and urban areas). All the states/UTs were categorised into 6 zones, i.e. South, West, Centre, North, East and North-East according to the state's reorganisation act, 1956.

*12. Adult member: Member of the HH who is 18 years of age and above*


## TABLE 1.2: ZONE[13] WISE LIST OF STATES/UTs

| Zones | North | Central | East | North-East | West | South |
|---|---|---|---|---|---|---|
| States/ UTs | 1. Chandigarh<br>2. Delhi<br>3. Haryana<br>4. Himachal Pradesh<br>5. Jammu & Kashmir<br>6. Punjab<br>7. Rajasthan | 1.Chhattisgarh<br>2. Madhya Pradesh<br>3. Uttar Pradesh<br>4.Uttarakhand | 1.Bihar<br>2. Jharkhand<br>3. Odisha<br>4.West Bengal | 1.Arunachal Pradesh<br>2. Assam<br>3. Manipur<br>4. Meghalaya<br>5. Mizoram<br>6. Nagaland<br>7. Sikkim<br>8.Tripura | 1. Dadra & Nagar Haveli<br>2.Daman & Diu<br>3.Goa<br>4. Gujarat<br>5.Maharashtra | 1.Andaman & Nicobar Islands<br>2. Andhra Pradesh<br>3. Karnataka<br>4. Kerala<br>5. Lakshadweep<br>6. Puducherry<br>7. Tamil Nadu<br>8. Telangana |

13. The states are categorized into zones according to the state Reorganisation Act, 1956 (https://mha.gov.in/zonal-council)

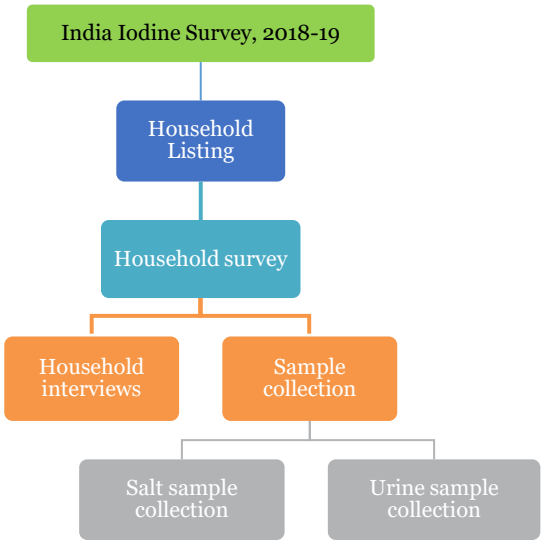
CHAPTER - 2

# METHODOLOGY

# Study design

A cross-sectional study design using quantitative data collection method was adopted to conduct the survey. The quantitative method comprised of (1) household listing exercise and (2) sample household survey which were conducted on Computer Assisted Personal Interviewing (CAPI) platform. In addition to the interview, salt samples were collected from the sampled households, and urine samples were collected from selected eligible women within the same household.

**Figure 2.1: Research components**




# Sample design

The current survey was designed to generate representative information on survey parameters at the state/ UT level, which includes both rural and urban areas within the state/UT.

## Sample size estimation

The sample size was estimated using the following formula:

$$N = Deff \times \frac{Z^2_{1-\alpha/2}}{d^2} \times p \times (1-p)$$

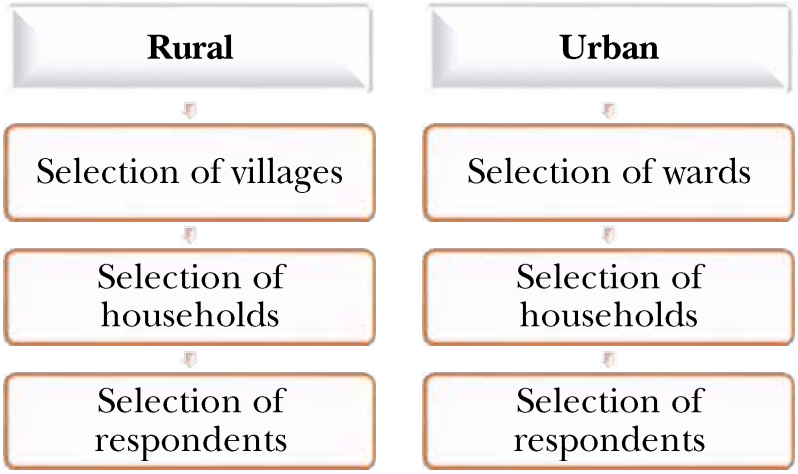
Where,

| | |
|---|---|
| N | refers to the minimum sample size |
| Deff | refers to design effect, considered to be 2.0 |
| $Z_{1-\alpha/2}$ | refers to the critical value of Z at the desired confidence level (at 95% confidence level the value is 1.96) |
| p | is the expected proportion of key indicator in the population (proportion of households with adequately iodised (≥15 ppm) salt measured at 0.781 as per the *National Iodine and Salt Intake (NISI) Survey, 2014-15* |
| d | refers to the absolute margin of error or precision, considered to be 0.05 |

By using the above assumptions and a probable response rate of 90% (considering a niche target group), the sample size comes out to be 584 which rounded up to 600 (for operational feasibility) in each state. In order to obtain adequate sample sizes of women at the national level for the three categories of women, from whom urine samples were collected, the sample size was allocated equally into three categories of women; namely, pregnant women (PW), lactating women (LW) (with an infant less than six months), and non-pregnant non-lactating women (NPNLW) (200 women in each category in each state/UT to allow for at least 900 women in a zone[14]) to be collected from across 20 primary sampling units in each state/UT and overall 21,600 women across all 29 states and 7 UTs in India.

## Sampling methodology

A multi-stage stratified cluster sampling methodology was used in rural and urban areas for all states/UTs. The census villages in rural areas and census wards in urban areas were considered as Primary Sampling Units (PSUs), and households constituted the Secondary Sampling Units (SSUs).




## Selection of wards and villages in rural and urban areas

In each of the 36 states/UTs, a separate sampling frame was constituted for rural and urban areas. The PSUs were selected using Probability Proportional to Size (PPS) sampling technique with in urban and rural areas separately. A minimum of 10per cent buffer was sampled in each state (both for rural and urban) except Lakshadweep[15] due to less than twenty clusters in this UT.

*14. For the secondary objective, to obtain a sample size for an assumed 50% women with urinary iodine below the median UIC of 158µg/l according to the National Iodine and Salt Intake Survey (NISI, 2014-15), a sample size of 854 rounded up to 900 per domain was estimated with a ±5% absolute precision, adjusted for a design effect of 2.0 to account for multi-stage cluster sampling design and incremented for a probable response rate of 90%. Hence, the data on median urinary iodine concentration (MUIC) are being presented at the zonal level and not at the state level.*

*15. In Lakshadweep, all the PSUs were sampled as the population size of PSUs with household equal to or less than 50 was very low*

## Selection of households

A complete listing of the entire PSU was conducted if the size of the PSU was ≤150 households. PSUs with more than 150 households were segmented into 2 or more segments of equal size, and one segment was randomly selected with the help of CAPI for listing. All of the households falling under the segment were listed using the right-hand approach starting from the north-east corner of the segment, in case of shortfall, listing was continued in another segment until the required sample was achieved. i.e. 12 households with PW, 12 households with LW, 12 households with NPNLW. Post which, 10 mutually exclusive households from each category were selected using systematic random sampling from the sampling frame of 12 households in each category.

A snapshot of the quantitative samples is presented in the table below:

**In total, 21,406 households were included across India covering interviews among 7,140 pregnant women, 7,142 lactating women and 7,124 non-pregnant non-lactating women.**

**Overall response rate was 83.3 per cent, which was found to be same for all three components of the survey i.e. respondent interviews, salt collection and urine collection because we had selected only those households who gave their consent for all three components.**

## TABLE 2.1: STATE-WISE NUMBER OF SAMPLES ACHIEVED AGAINST SAMPLES ALLOCATED

| Zone | State | Sample allocation | | | | |
|---|---|---|---|---|---|---|
| | | Rural PSU | Urban PSU | PSU per state | Sample size per state/ UT | PW |
| Zone-1 (North zone | Chandigarh | 1 | 19 | 20 | 600 | 200 |
| | Delhi | 1 | 19 | 20 | 600 | 200 |
| | Haryana | 13 | 7 | 20 | 600 | 200 |
| | Himachal Pradesh | 18 | 2 | 20 | 600 | 200 |
| | Jammu & Kashmir* | 15 | 5 | 20 | 600 | 200 |
| | Punjab | 12 | 8 | 20 | 600 | 200 |
| | Rajasthan | 15 | 5 | 20 | 600 | 200 |
| Zone-2 (Central zone) | Chhattisgarh | 15 | 5 | 20 | 600 | 200 |
| | Madhya Pradesh | 14 | 6 | 20 | 600 | 200 |
| | Uttar Pradesh | 16 | 4 | 20 | 600 | 200 |
| | Uttarakhand | 14 | 6 | 20 | 600 | 200 |
| Zone-3 (East zone) | Bihar | 18 | 2 | 20 | 600 | 200 |
| | Jharkhand | 15 | 5 | 20 | 600 | 200 |
| | Odisha | 17 | 3 | 20 | 600 | 200 |
| | West Bengal | 14 | 6 | 20 | 600 | 200 |
| Zone-4 (North-east zone) | Arunachal Pradesh | 15 | 5 | 20 | 600 | 200 |
| | Assam | 17 | 3 | 20 | 600 | 200 |
| | Manipur | 14 | 6 | 20 | 600 | 200 |
| | Meghalaya | 16 | 4 | 20 | 600 | 200 |
| | Mizoram | 10 | 10 | 20 | 600 | 200 |
| | Nagaland | 14 | 6 | 20 | 600 | 200 |
| | Sikkim | 15 | 5 | 20 | 600 | 200 |
| | Tripura | 15 | 5 | 20 | 600 | 200 |
| Zone-5 (West zone) | Dadra and Nagar Haveli | 11 | 9 | 20 | 600 | 200 |
| | Daman & Diu | 5 | 15 | 20 | 600 | 200 |
| | Goa | 8 | 12 | 20 | 600 | 200 |
| | Gujarat | 11 | 9 | 20 | 600 | 200 |
| | Maharashtra | 11 | 9 | 20 | 600 | 200 |
| Zone-6 (South zone) | Andaman & Nicobar Islands | 12 | 8 | 20 | 600 | 200 |
| | Andhra Pradesh | 14 | 6 | 20 | 600 | 200 |
| | Karnataka | 12 | 8 | 20 | 600 | 200 |
| | Kerala | 10 | 10 | 20 | 600 | 200 |
| | Lakshadweep | 4 | 6 | 10 | 600 | 200 |
| | Puducherry | 6 | 14 | 20 | 600 | 200 |
| | Tamil Nadu | 10 | 10 | 20 | 600 | 200 |
| | Telangana | 12 | 8 | 20 | 600 | 200 |
| **All Zone** | **All India** | **440** | **270** | **710** | **21600** | **7200** |

*Note:* 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.*

| | | Sample achieved | | | | | | |
|---|---|---|---|---|---|---|---|---|
| LW | NPNLW | Rural PSU | Urban PSU | PSU per state | Sample size per state/ UT | PW | LW | NPNLW |
| 200 | 200 | 1 | 19 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 1 | 19 | 20 | 611 | 200 | 210 | 201 |
| 200 | 200 | 13 | 7 | 20 | 601 | 201 | 200 | 200 |
| 200 | 200 | 18 | 2 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 8 | 4 | 12 | 355 | 120 | 117 | 118 |
| 200 | 200 | 12 | 8 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 15 | 5 | 20 | 604 | 200 | 204 | 200 |
| 200 | 200 | 15 | 5 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 14 | 6 | 20 | 603 | 202 | 201 | 200 |
| 200 | 200 | 16 | 4 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 14 | 6 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 18 | 2 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 15 | 5 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 17 | 3 | 20 | 601 | 201 | 200 | 200 |
| 200 | 200 | 14 | 6 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 15 | 5 | 20 | 603 | 202 | 200 | 201 |
| 200 | 200 | 17 | 3 | 20 | 601 | 200 | 200 | 201 |
| 200 | 200 | 14 | 6 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 16 | 4 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 10 | 10 | 20 | 605 | 202 | 203 | 200 |
| 200 | 200 | 14 | 6 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 15 | 5 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 15 | 5 | 20 | 608 | 202 | 204 | 202 |
| 200 | 200 | 11 | 9 | 20 | 601 | 200 | 201 | 200 |
| 200 | 200 | 5 | 15 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 8 | 12 | 20 | 601 | 200 | 201 | 200 |
| 200 | 200 | 11 | 9 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 11 | 9 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 12 | 8 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 14 | 6 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 12 | 8 | 20 | 601 | 201 | 200 | 200 |
| 200 | 200 | 10 | 10 | 20 | 601 | 201 | 200 | 200 |
| 200 | 200 | 4 | 6 | 10 | 600 | 200 | 200 | 200 |
| 200 | 200 | 6 | 14 | 20 | 600 | 200 | 200 | 200 |
| 200 | 200 | 10 | 10 | 20 | 610 | 208 | 201 | 201 |
| 200 | 200 | 12 | 8 | 20 | 600 | 200 | 200 | 200 |
| **7200** | **7200** | **433** | **269** | **702** | **21406** | **7140** | **7142** | **7124** |

## Selection of respondents

The survey questionnaire was administrated to any adult member of the target household and data were collected using the following tools.

| Survey component | Tools for data collection | Target respondent |
|---|---|---|
| Household Listing | Household listing tool | Any adult member of the household |
| Main survey | 1. Structured household questionnaire<br>2. Consent forms for questionnaire | **Preference 1:** Wife of the head of household (HoH) or female head of the household<br><br>**Preference 2:** Other adult female member having decision making capacity<br><br>**Preference 3:** Any adult member in the household |
| Sample collection | 1. Consent forms for salt and urine samples<br>2. Transmittal sheets for salt and urine sample | 1. Salt sample collection from household<br>2. Urine sample collection from women in the age group of 15 to 49 years and with below mentioned status<br>I. Pregnant Women (PW)<br>II. Lactating Women (LW) (with infant less than six months)<br>III. Non-Pregnant and Non-Lactating Women (NPNLW) |

In case there were more-than-one eligible women in the same category (PW, LW or NPNLW) available in the household, the interviewer used a Kish Grid table to choose only one eligible woman for urine sample collection.

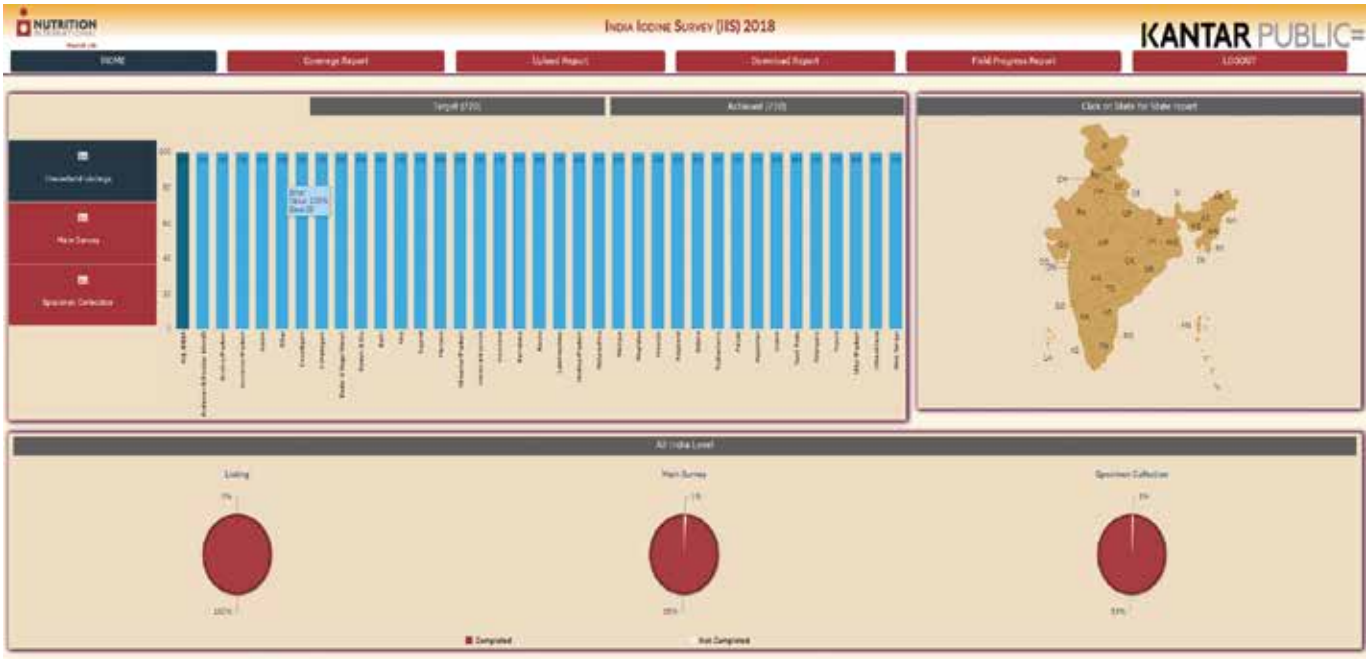
# Implementation of the survey

## Preparatory activities

All the research tools, including questionnaire, consent forms, transmittal sheet and unique ID stickers for salt and urine samples, were developed by Kantar in consultation with Nutrition International. These tools were pre-tested in one PSU in Hindi speaking state (Haryana) using Pen and Paper Assisted Personal Interviewing (PAPI) platform as per complete process planned for the original fieldwork to check the correctness of survey tools. Based on the feedback received from the pre-test, modifications were made in the tools. The finalised tools were then translated into the local vernaculars for the respective state and were independently back translated.

Post finalisation of the tools, the CAPI programming was initiated. Post-development of tools in CAPI, a pre-test was then conducted in one PSU in the non-Hindi speaking state (West Bengal) on CAPI to ensure the feasibility of the platform. In parallel, during the process of CAPI development, a dashboard was developed to monitor real-time survey progress through a dedicated server as shown in Figure 2.2.

**Figure 2.2: Snapshot of India Iodine Survey dashboard**




## Data collection and management

Both listing and main survey were conducted using CAPI to ensure real-time data access and data quality. Data for survey was collected in two steps, first was the household listing exercise, and the second was the main survey. During main survey first, the target respondents for both the components, i.e. household questionnaire and sample collection were identified, and consent was obtained separately, and the interview was conducted followed by the collection of salt and urine samples. Fieldwork was conducted in two phases, wherein Phase I, complete fieldwork was executed in Haryana as a pilot state and in Phase II, fieldwork was initiated in all remaining 28 states and 7 UTs.

## Iodine estimation from salt and urine sample

In each surveyed household, at least 50 gm of cooking salt was collected along with 20-25 ml urine sample from either PW, LW or NPNLW for which the particular household was sampled.

The following steps were carried out for the purpose of sample collection:

### Salt sample collection:

- Requesting the respondent to bring salt which was used for cooking the last meal and to avoid touching the inside of the zip pouch to decrease the risk of unrecognized iodine contamination.
- Pouring the salt in sterile dry zipped pouch using a dry spoon.
- Label the specimen packet properly with the unique identification code allotted to that respondent.

## Urine sample collection

- The urine sample donors were requested to collect 20-25 ml urine (half-filled container) in a sterile plastic graduated container with air tight lid (50 ml) by directing the donor to pass urine for a few seconds, and then to hold the cup in the urine stream for a few seconds to catch a midstream urine sample to decrease the risk of contamination from organisms living in the urethra;
- The donor was directed to avoid touching the inside or rim of the plastic cup with the skin of the hands, legs or external genitalia to decrease the risk of contamination from skin organisms;
- After receiving urine sample from the donor, sample collector added few drops (2ml per container) of Toluene (A.R. Grade) in the specimen wearing gloves, the container was then placed in a zippered bag, which was labelled properly with the unique identification code allotted to that respondent.

Further, the salt and urine samples were transported to ICCIDD laboratory in Delhi for testing the iodine content in salt and urine samples from each PSU from each state/UT.

The iodine content of iodised salt samples was measured through iodometric titration, as described by DeMaeyer, Lowenstein, and Thilly, (1979). Urinary iodine was measured using the Sandell-Kolthoff reaction. Details for each are included in Appendix 3.

## Data reporting

Real-time progress of fieldwork along with the sample achievement status, was monitored through the designated dashboard. In addition to monitoring, from the designated dashboard, both listing and main survey raw data was available for download on real-time basis. Post completion of fieldwork raw data was then checked for outliers, which was validated with the field teams, and necessary cleaning was done through a systematic process. Unique ID (UID) codes were used to identify and map the household in the survey with the labelled salt and urine sample results. Status of samples collected, dispatched and received by laboratory, was also monitored through the dashboard.

## Data analysis

As a part of data analysis, post completion of data collection, the complete data set was downloaded from the server and checked and cleaned for key indicators and the final cleaned data set was used for analysis. A detailed chapter and analysis plan were further developed and finalised. The complete data set was converted into SPSS format (version 23.0) with variables labels and value labels as per questionnaire, which was further used to populate the tables specified in the analysis plan. The data was analysed using SPSS software. SPSS syntax was developed to generate the tables by creating a separate syntax file for each tab in the analysis plan.

In order to account for clustering, weighting, the Complex Samples (CS) Module in SPSS was used to calculate 95% confidence intervals of percentages for the weighted data of iodine level in salt. The CSA (Complex Samples Analysis) plan file was developed to include the strata, the PSU, the probability of selection for the PSU, the probability of selection for a household within the PSU, and the weights adjusted for non-response. Using complex samples procedure, 95% confidence intervals were computed for varying levels of iodine in salt samples. The sampling errors for selected indicated were also computed and presented.

All results produced were based on weighted data. Cross-tabulations and frequencies were also generated. The median was calculated for the urinary iodine concentration. When presenting results, cells where the un-weighted count was less than 25 responses were presented by an asterisk (*); cells where

the un-weighted count was between 25 and 49 were presented in parenthesis, e.g. ( ) following the Demographic and Health Surveys convention.

### Ethical consideration, Institutional Review Board (IRB) and informed consent

Ethical clearance for the survey was obtained from the SRI-IRB (Institutional Review Board of Social Research Institute). Written/informed consents were obtained from all the participants in the local language. Participation of respondents was limited to answering a set of standardised questions, and to providing salt samples and urine samples only upon providing their voluntary consent. Survey and sample collection were done only from consenting respondents. Ethical clearance for third party monitoring was also obtained by Kantar, where in Karvy Insights had been selected as third party for the survey monitoring.

No respondent at any level was exposed to any risk, and no direct benefits were provided to the respondents. However, in lieu of collecting more than 50 grams of the salt sample, a compensation of INR 10/- was provided to all respondents as cost of salt which they would have paid at the time of purchase of salt from the retailer.

It was ensured that the information obtained was kept confidential for which all personal identifiers were removed from survey and biological data. The data was analysed at the administrative unit level (state and union territory) only. No personal identifiers were used for mapping sample result with data; instead unique ID was used for this purpose. No personal identification details were shared with Karvy Insights for third party monitoring. It was ensured that respondents were not re-contacted, post-interview and sample collection either for internal or external validation, as data quality was ensured during data collection process.

## Quality and reliability of data

Quality assurance was a proactive and continuous process of systematic monitoring and evaluation of the various aspects of a project to maximise the standards of quality attained by the survey process. Quality checks were carried out on all the key-activities of the project-recruitments, field training, data collection, team movement, data compilation etc.

### Internal monitoring mechanism

A three-tier monitoring structure was followed throughout the survey. The quality control plan envisaged quality check mechanisms at the following stages:

### a. Inputs stage

Quality check mechanisms were placed right from recruitment to CAPI application testing followed by trainings by ensuring the standardisation and consistency during the field trainings.

### b. Data collection stage

The quality at the data collection stage was primarily determined by coverage of PSU, comprehensiveness of coverage, the correctness of information and adherence to protocol in each of the phases of data collection. .

- Supervisors conducted accompaniment/spot checks in 15 per cent of the interviews covering all interviewers;
- State field controllers conducted targeted backchecks and accompanied checks in 5 per cent of the PSUs;
- In case any issue was observed during supervisory accompaniment/spot checks related to data quality, immediately a debriefing session was organised, and all the doubts were clarified.

The dashboard developed for the survey helped maintain transparency of the data collection process monitoring.

### c. Data validation

A robust data monitoring and validation system were placed at various levels to ensure the quality of data being collected throughout the survey.

- IT manager ensured that a backup of the uploaded data was taken regularly
- IT manager maintained a clean copy of all raw data uploaded in case of need to return after cleaning
- Server team cleaned the data/outlier based on variance report and converted it into SPSS.

## External monitoring mechanism

The external monitoring mechanism is a process by which the quality of data is ensured by an external independent agency. Karvy Insights was appointed as an external independent agency for this study to independently validate the reliability of data collected within the lines of ethical considerations, where the team observed the data collection process in about 86.0 per cent of all PSUs covered without interfering the interview process.

## Challenges faced during data collection

1. During the early stages of the survey, post-selection of households for the main survey within a PSU, teams faced difficulty in conducting interviews, due to unavailability of either the respondent or the sample donor and/or refusals. Therefore, during phase I and phase II fieldwork, in case of shortfall/unavailability/refusal in any target category, field teams continued the listing exercise in the adjacent segment or in linking village till the shortfall was covered which further lead to change in the listing method which required an additional 20 per cent households to be covered with eligible respondents and advance appointment/intimation was taken with households for main survey.

2. In phase I, the team-maintained log sheets in hardcopies to record eligible household and manually checked whether or not these households were mutually exclusive. Since it was a manual process, there were chances of calculation errors while calculating mutually exclusive households. Hence in phase II, the calculation was made available in the CAPI application and was done with no human intervention. An automated programme was used at the backend for a sampling of household and data was pushed back for the main survey teams from the server itself.

3. The problem of attrition was faced during phase I fieldwork in Haryana due to which the duration of actual fieldwork increased than planned. Therefore, while planning fieldwork for phase II, additional teams were recruited and trained in each state to take care of dropouts and avoid any delay in fieldwork caused by it.

4. All salt and urine samples were tested in Delhi based laboratory- Association for Indian Coalition for the Control of Iodine Deficiency Disorders (ICCIDD). Therefore, both salt and urine samples from each state/UT had to be submitted to the laboratory within a week from the date of collection. This resulted in logistic constraints, which led to some delay in sample submission.

CHAPTER - 3

# DEMOGRAPHIC AND SOCIO-ECONOMIC PROFILE

This chapter presents information on the demographic and socio-economic characteristics of the survey respondent and household covered in this survey.

The sampled household population covered in this survey was proportionate to the rural and urban population of the respective states and UTs. 61.3 per cent were from rural areas, while 38.7 per cent were from urban areas across India. In total 21,406, households were covered across all 29 states, and 7 UTs. Among the surveyed households in urban areas, 62.8 per cent households were from the two highest (fourth and highest) wealth quintiles. Whereas, more than half of the rural households (53.3%), by contrast, were from the two lowest (second and lowest) wealth quintiles.

# Demographic and socio-economic characteristics of the survey respondents

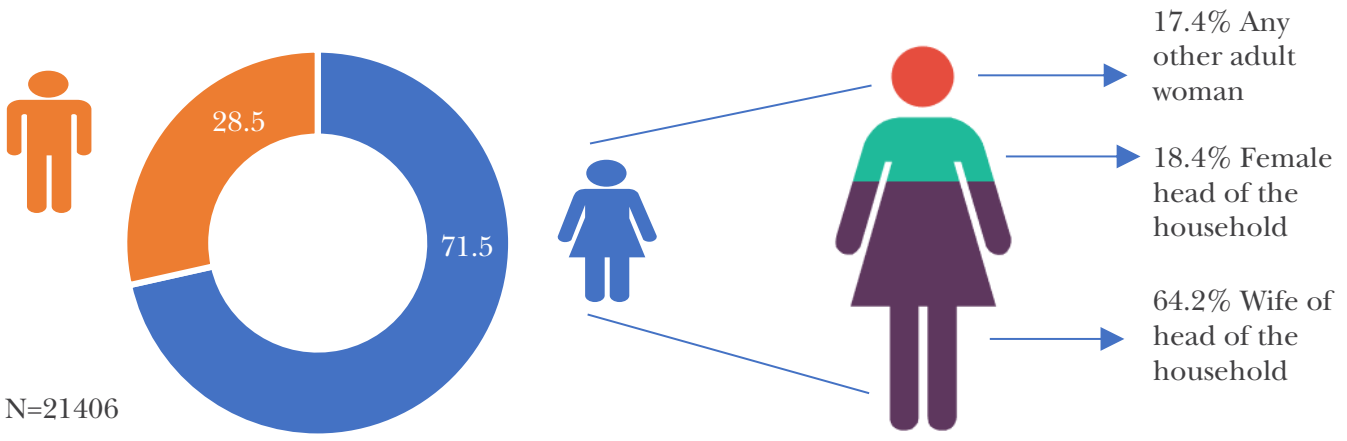
As mentioned in earlier chapters, as per the protocol of the survey the respondent in a selected household was to be the person, most likely to know about the demographic, socio-economic characteristics of the households. They would also have knowledge pertaining to iodised salt and the type of salt used for cooking, hence priority was given to the female adult member of the household.

As depicted in figure 3.1, out of the total households surveyed, 71.5 per cent of the respondents were female adult member (either wife of the head of household (HoH) or, female head of the household or any other adult female member having decision making capacity) and 28.5 per cent were an adult member of the household (i.e. male member). The distribution of respondents was similar across rural and urban areas across all states/UTs. While the urine sample across all households were collected from women of reproductive age (15 to 49 years), which was then further classified into households with pregnant women (PW), lactating women (LW) (with an infant less than six months) and non-pregnant non-lactating women (NPNLW).

## Age Distribution

The age distribution shows the majority of the respondents (62.7%) covered in the survey were from the age group of 18- 24 years. The age distribution of the respondents was similar in the rural and urban areas across all states/UTs.

**Figure 3.1: Sex of the respondent and type of respondent (%)**



Similarly, in the case of the sample donor (i.e. women in the reproductive ages 15-49 years) majority (61.1%) were covered from the age group of 18-24 years.

## Marital status of the respondent

Overall, 90.9 per cent of the respondents were married at the time of the survey, while only 9.1 per cent of the respondents were unmarried.

## Education status of the respondent

The education status was determined for all the respondents covered in the survey. Across all states/ UTs, nearly 75.1 per cent of the respondents (rural 70.9% and urban 81.7%) had received formal education, i.e. attended schooling. The percentage of respondents who received no schooling was 24.9 per cent at the national level, while the percentage of respondents with no schooling was significantly higher in rural (29.1%) than the urban (18.2%) areas. Among the respondents covered in the survey, 34.9 per cent completed schooling up to 10th class; 22.9 per cent received ≥12 years of formal education. The proportion of respondents who have completed formal education of ≥12 years of schooling and above were found to be higher in the urban areas (27.9%) as compared to the rural areas (19.7%).

**Figure 3.2: Age distribution of the respondent (%)**

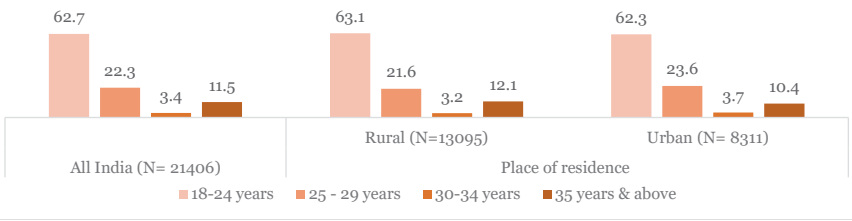



**Figure 3.3: Age distribution of the urine sample donor (%)**

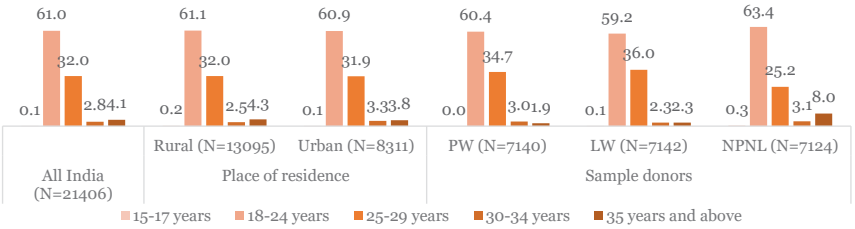



**Figure 3.4: Marital status of the respondent (%)**

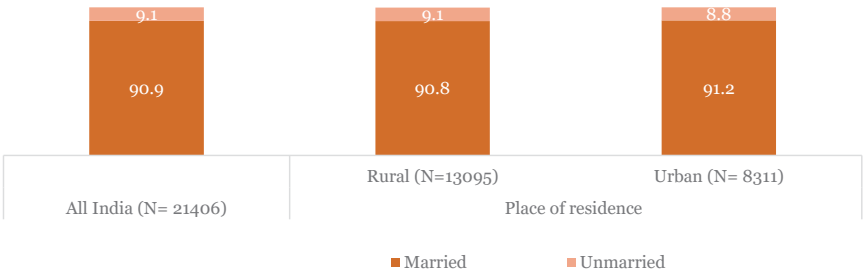
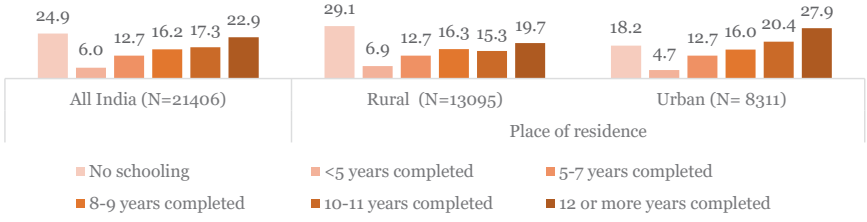



**Figure 3.5: Education status of the respondent (%)**




# Household profile

## Wealth quintile

To compute the wealth quintile, households were given scores based on the number and kinds of household amenities they own, ranging from a television to a bicycle or car, and household characteristics such as source of drinking water, toilet facilities, and flooring materials. These scores were derived using principal component factor analysis. National wealth quintiles were compiled by assigning the household score and then dividing the distribution into five equal categories, each with 20 per cent of the population, which is similar to how it has been calculated in National Family Health Survey (NFHS).

Among the surveyed households, the highest quintile households were concentrated in urban areas. 62.8 per cent of the urban households were in the two highest wealth quintiles, while just 5.6 per cent of the households fall under the lowest quintile. By contrast, more than half of the rural population (53.3%) was from the two lowest wealth quintiles, and only 26.4 per cent of the households fall under the two highest wealth quintiles.

## Access to improved drinking water sources and various sources of drinking water

It was observed that across all states/UTs almost all urban households (96.5%) and rural households (94.0%) have access to improved drinking water sources which includes piped water, public taps, standpipes, tube wells, boreholes, protected dug wells and springs, rainwater, and community reverse osmosis (RO) plants.

The main sources of drinking water for urban households were water piped into their dwelling (40.9%), tube wells or boreholes (21.1%) and public taps or standpipes (17.1%). More than one-third of the rural households rely on tube wells or boreholes (35.8%), followed by public taps or standpipes (23.5%) and water piped into their dwelling (18.9%). In rural areas, 62.2 per cent of households have a water source located in their dwelling/yard/plot, compared with 75.2 per cent in urban areas.

## Usage of improved sanitation and various types of toilets

More than two-third of the households (76.0%) across all states/ UTs were using improved sanitation (i.e. toilet of the following types: flush/pour flush toilets to piped sewer systems, septic tanks, and pit latrines; ventilated improved pit (VIP)/biogas latrines; pit latrines with slabs; and twin pit/ composting toilets), as depicted in figure 3.8, the proportion of households using improved sanitation in urban areas was higher than rural areas.

Among households using improved sanitation, only 14.6 per cent of the households were found to be sharing the toilet facility with others, while the rest 85.4 per cent of the households do not share the toilet facility with others. One-sixth (16.8%)of the total households do not use any toilet facility.

## Access to health facilities

The survey also tried to understand household's access to the health facility. The below graph depicts that overall, 56.1 per cent of the households usually visit a public health facility while 43.9 per cent visit a private health facility. It was found to be similar across rural and urban at the national level, as shown in figure 3.9.

## Health schemes/ insurance coverage

Less than one-sixth (13.6%) of the households have at least one usual member (i.e. any member who has been living in the household for the past 30 days), who was covered under health

**Figure 3.6: Household wealth quintile by residence (%)**

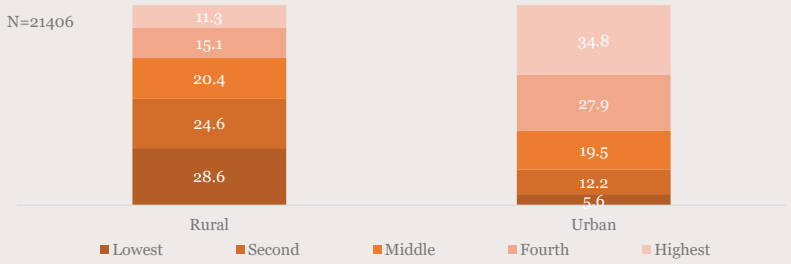



**Figure 3.7: Access to improved drinking water by residence (%)**

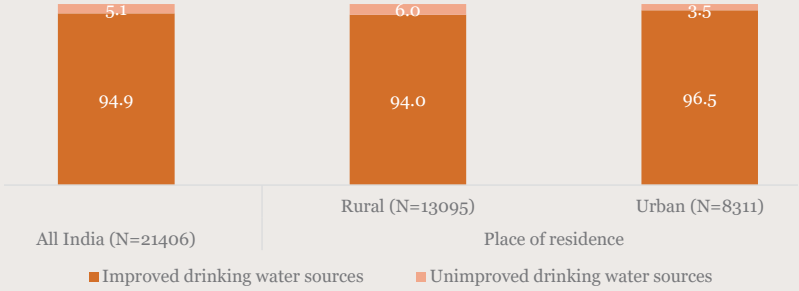



**Figure 3.8: Access to improved sanitation by residence (%)**

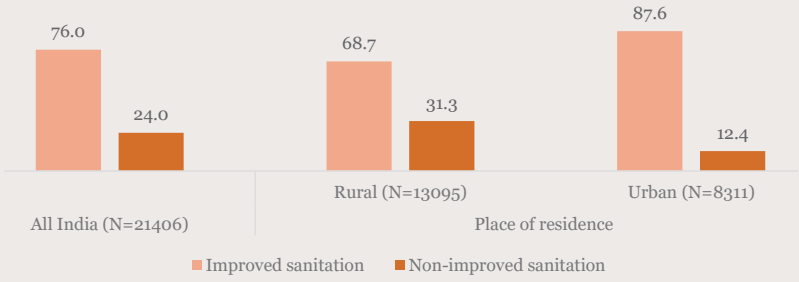



**Figure 3.9: Access to health facilities by residence (%)**

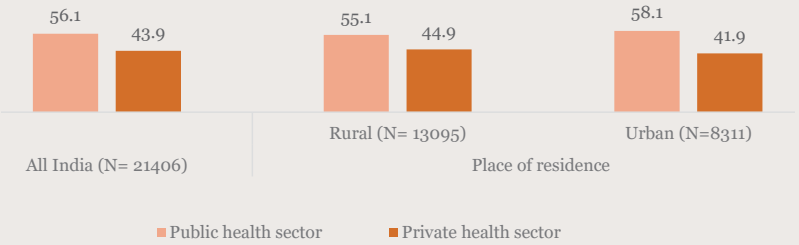



**Figure 3.10: Household covered under any health Insurance/scheme (%)**

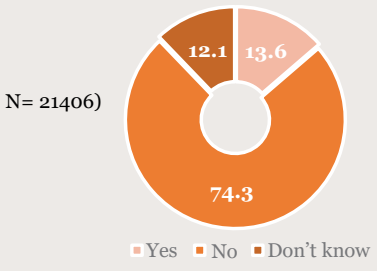


**Figure 3.11: Access to health scheme or health insurance by residence (%)**

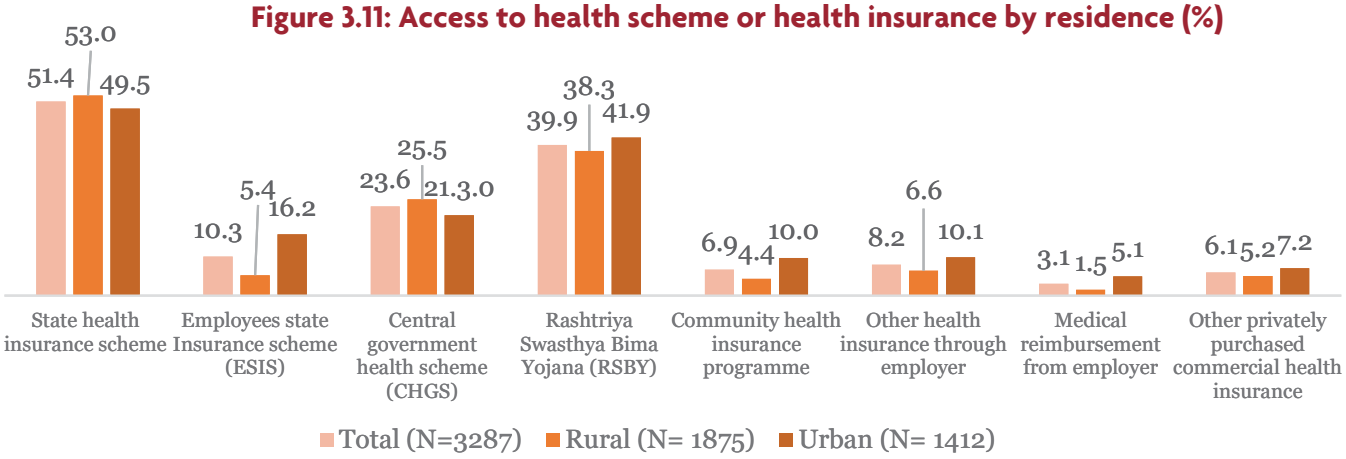



**Figure 3.12: Households having ration card (%)**

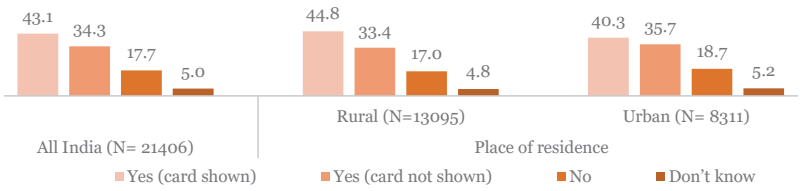



**Figure 3.13: Category of ration card (%)**

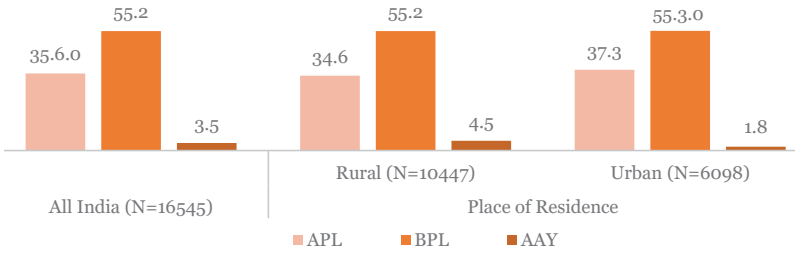
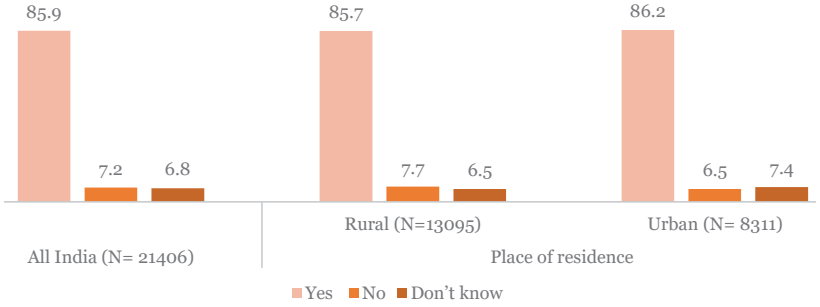



**Figure 3.14: Households having a bank /post office account (%)**




insurance or health scheme across all states/UTs, while it was slightly higher among urban households (15.7%) compare to rural households (12.2%).

Overall, among those households having some coverage under health insurance or health scheme, the most availed one was state health insurance scheme (51.4%) followed by Rashtriya Swasthya Bima Yojana (RSBY) at 39.9 per cent.

## Availability of ration card

More than three fourth of the surveyed households (77.4%) have a ration card. Among the households having ration cards, more than half (55.2%) of those have BPL ration card, 35.6 per cent of the households have APL ration card while only 3.5 per cent have AAY ration card.

## Access to bank account / Post office account

Majority of the surveyed households (85.9%) have at least one usual member having a bank account or a post office account. More than half (55.0%) of the households where both male and female members had a bank or post

office account, while about  a quarter of the households had only the male member with a bank or post office account and close to one-tenth household had only female member as a primary bank or post account holder.

## Summary

Overall, 61.3 per cent rural and 38.7 per cent urban households were covered across India, in this survey.

The age distribution shows that more than three-fifth respondents and sample donor were from the age group of 18-24 years, with 90.0 per cent being married at the time of the survey. It was observed that respondents in urban areas (81.7%) were more likely to attend school as the level of illiteracy observed in rural areas (29.1%) was higher than urban areas (18.2%).

In India, almost all households (96.5 per cent urban households and 94 per cent rural households) have access to improved drinking water sources. More than two-third of all the households (76.0%) across all states/UTs use improved toilet facilities, among whom almost two-third households do not share their toilet facility with other households.

More than three-fourths of the surveyed households (77.4%) have a ration card. More than half (55.2%) of the households have a BPL ration card. More than out of eight households (85.9%) have at least one usual member having a bank account or a post office account. More households in rural areas (60.3%) were found to have both male and female members having a bank account or a post office account.

# Annexures for Chapter 3

## TABLE 3.1: TYPE OF RESIDENCE

| Per cent distribution of type of residence across all India, wealth quintile and states across all zones | | | |
|---|---|---|---|
| | **Unweighted N** | **Rural** | **Urban** |
| Unweighted N | 21406 | 13095 | 8311 |
| **All India Wealth quintile** | **21406** | **61.3** | **38.7** |
| Lowest | 2692 | 89.0 | 11.0 |
| Second | 3657 | 76.1 | 23.9 |
| Middle | 4271 | 62.4 | 37.6 |
| Fourth | 5112 | 46.2 | 53.8 |
| Highest | 5674 | 33.9 | 66.1 |
| **North zone** | **3971** | **58.5** | **41.5** |
| Chandigarh | 600 | 2.9 | 97.1 |
| Delhi | 611 | 1.4 | 98.6 |
| Haryana | 601 | 51.1 | 48.9 |
| Himachal Pradesh | 600 | 86.3 | 13.7 |
| Jammu & Kashmir | 355 | 56.3 | 43.7 |
| Punjab | 600 | 47.7 | 52.3 |
| Rajasthan | 604 | 76.5 | 23.5 |
| **Central zone** | **2403** | **72.4** | **27.6** |
| Chhattisgarh | 600 | 70.0 | 30.0 |
| Madhya Pradesh | 603 | 70.5 | 29.5 |
| Uttarakhand | 600 | 62.9 | 37.1 |
| Uttar Pradesh | 600 | 74.3 | 25.7 |
| **East zone** | **2401** | **72.9** | **27.1** |
| Bihar | 600 | 86.0 | 14.0 |
| Jharkhand | 600 | 76.9 | 23.1 |
| Odisha | 601 | 71.0 | 29.0 |
| West Bengal | 600 | 58.8 | 41.2 |
| **North-East zone** | **4817** | **77.0** | **23.0** |
| Arunachal Pradesh | 603 | 71.4 | 28.6 |
| Assam | 601 | 81.1 | 18.9 |
| Manipur | 600 | 61.1 | 38.9 |
| Meghalaya | 600 | 86.1 | 13.9 |
| Mizoram | 605 | 48.7 | 51.3 |
| Nagaland | 600 | 67.0 | 33.0 |
| Sikkim | 600 | 70.0 | 30.0 |
| Tripura | 608 | 68.6 | 31.4 |
| **West zone** | **3002** | **48.8** | **51.2** |
| Dadra & Nagar Haveli | 601 | 33.3 | 66.7 |
| Daman & Diu | 600 | 16.4 | 83.6 |
| Goa | 601 | 32.1 | 67.9 |

| Per cent distribution of type of residence across all India, wealth quintile and states across all zones | | | |
|---|---|---|---|
| | Unweighted N | Rural | Urban |
| Maharashtra | 600 | 50.5 | 49.5 |
| **South zone** | **4812** | **49.4** | **50.6** |
| Andaman & Nicobar Island | 600 | 57.3 | 42.7 |
| Andhra Pradesh | 600 | 63.5 | 36.5 |
| Karnataka | 601 | 57.7 | 42.3 |
| Kerala | 601 | 40.2 | 59.8 |
| Lakshadweep | 600 | 21.4 | 78.6 |
| Puducherry | 600 | 24.5 | 75.5 |
| Tamil Nadu | 610 | 37.8 | 62.2 |
| Telangana | 600 | 45.1 | 54.9 |

## TABLE 3.2: TYPE OF RESPONDENTS

| Per cent distribution of type of respondents across all India, type of residence and states across all zones | | | | | |
|---|---|---|---|---|---|
| | Unweighted N | Head of the household (in case of female) | Wife of the head of the household | Any other adult woman who has been living continuously for the past months in the household | Any other adult member in the household who has been living continuously for the past 3 months |
| Unweighted N | 21406 | 1783 | 10861 | 2630 | 6132 |
| **All India Type of residence** | **21406** | **13.2** | **45.9** | **12.4** | **28.5** |
| Rural | 13095 | 13.3 | 43.9 | 13.5 | 29.4 |
| Urban | 8311 | 13.0 | 49.2 | 10.7 | 27.1 |
| **North zone** | **3971** | **10.0** | **49.4** | **14.4** | **26.2** |
| Chandigarh | 600 | 2.0 | 60.7 | 11.6 | 25.8 |
| Delhi | 611 | 2.6 | 64.4 | 5.8 | 27.1 |
| Haryana | 601 | 8.0 | 59.0 | 19.1 | 13.8 |
| Himachal Pradesh | 600 | 3.9 | 52.9 | 6.3 | 36.9 |
| Jammu & Kashmir | 355 | 0.6 | 34.2 | 43.3 | 21.8 |
| Punjab | 600 | 11.6 | 47.9 | 6.3 | 34.1 |
| Rajasthan | 604 | 13.9 | 45.2 | 14.0 | 26.9 |
| **Central zone** | **2403** | **7.1** | **42.0** | **16.4** | **34.5** |
| Chhattisgarh | 600 | 24.7 | 40.0 | 11.4 | 23.9 |
| Madhya Pradesh | 603 | 0.5 | 50.3 | 19.7 | 29.5 |
| Uttarakhand | 600 | 2.1 | 48.7 | 14.5 | 34.7 |
| Uttar Pradesh | 600 | 7.1 | 38.2 | 16.0 | 38.8 |
| **East zone** | **2401** | **4.1** | **47.0** | **17.8** | **31.1** |
| Bihar | 600 | 6.3 | 46.1 | 19.4 | 28.2 |
| Jharkhand | 600 | 0.8 | 53.8 | 15.9 | 29.6 |

| Per cent distribution of type of respondents across all India, type of residence and states across all zones | | | | | |
|---|---|---|---|---|---|
| | Unweighted N | Head of the household (in case of female) | Wife of the head of the household | Any other adult woman who has been living continuously for the past months in the household | Any other adult member in the household who has been living continuously for the past 3 months |
| West Bengal | 600 | 3.8 | 46.6 | 17.0 | 32.7 |
| **North-East zone** | **4817** | **4.6** | **46.7** | **18.0** | **30.7** |
| Arunachal Pradesh | 603 | 5.0 | 43.3 | 17.6 | 34.1 |
| Assam | 601 | 3.8 | 42.6 | 21.7 | 31.8 |
| Manipur | 600 | 1.8 | 53.6 | 16.7 | 27.9 |
| Meghalaya | 600 | 9.5 | 54.6 | 1.0 | 34.9 |
| Mizoram | 605 | 5.1 | 48.7 | 18.5 | 27.7 |
| Nagaland | 600 | 7.8 | 66.1 | 0.6 | 25.5 |
| Sikkim | 600 | 4.1 | 66.2 | 3.6 | 26.0 |
| Tripura | 608 | 6.1 | 51.8 | 17.1 | 25.0 |
| **West zone** | **3002** | **41.3** | **32.9** | **3.0** | **22.8** |
| Dadra & Nagar Haveli | 601 | 5.3 | 73.3 | 1.6 | 19.9 |
| Daman & Diu | 600 | 4.2 | 60.3 | 4.4 | 31.1 |
| Goa | 601 | 1.7 | 71.7 | - | 26.6 |
| Gujarat | 600 | 12.6 | 49.9 | 3.4 | 34.1 |
| Maharashtra | 600 | 59.7 | 21.6 | 2.8 | 15.9 |
| **South zone** | **4812** | **10.3** | **55.2** | **8.8** | **25.7** |
| Andaman & Nicobar Island | 600 | 2.6 | 51.3 | 15.3 | 30.9 |
| Andhra Pradesh | 600 | 10.9 | 60.2 | 4.4 | 24.5 |
| Karnataka | 601 | 9.8 | 54.3 | 10.2 | 25.6 |
| Kerala | 601 | 11.3 | 35.9 | 22.2 | 30.7 |
| Lakshadweep | 600 | 14.7 | 21.3 | 35.4 | 28.7 |
| Puducherry | 600 | 1.0 | 64.7 | 4.6 | 29.7 |
| Tamil Nadu | 610 | 5.4 | 59.9 | 7.9 | 26.8 |
| Telangana | 600 | 19.4 | 58.2 | 1.4 | 20.9 |

## TABLE 3.3: AGE GROUP OF RESPONDENTS

| Per cent distribution of type of respondents across all India, type of residence and states across all zones | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 18-19 years | 20-24 years | 25-29 years | 30-34 years | 35-39 years | 40-49 years | >50 Years | >50 Years |
| Unweighted N | 21406 | 131 | 12499 | 5255 | 892 | 706 | 877 | 1046 |
| **All India Type of Residence** | **21406** | **0.5** | **62.2** | **22.3** | **3.4** | **2.9** | **3.4** | **5.2** |
| Rural | 13095 | 0.6 | 62.5 | 21.6 | 3.2 | 3.0 | 3.7 | 5.4 |
| Urban | 8311 | 0.4 | 61.9 | 23.6 | 3.7 | 2.7 | 3.0 | 4.8 |

## TABLE 3.4: AGE GROUP OF SAMPLE DONOR

| Per cent distribution of age of sample donor across all India and type of residence | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Unweighted N** | **15-19 years** | **20-24 years** | **25-29 years** | **30-34 years** | **35-39 years** | **40-49 years** |
| Unweighted N | 21406 | 245 | 12521 | 6589 | 828 | 604 | 619 |
| **All India Type of Residence** | **21406** | **1.2** | **59.9** | **32.0** | **2.8** | **2.0** | **2.1** |
| Rural | 13095 | 1.5 | 59.8 | 32.0 | 2.5 | 2.1 | 2.1 |
| Urban | 8311 | 0.8 | 60.2 | 31.9 | 3.3 | 1.8 | 2.0 |

## TABLE 3.5: MARITAL STATUS OF RESPONDENTS

| Per cent distribution of marital status of respondents across all India and type of residence | | | |
|---|---|---|---|
| | **Unweighted N** | **Married** | **Unmarried** |
| Unweighted N | 21406 | 19345 | 2036 |
| **All India Type of Residence** | **21406** | **90.9** | **9.1** |
| Rural | 13095 | 90.8 | 9.2 |
| Urban | 8311 | 91.2 | 8.8 |

**Married:** Currently married
**Unmarried:** Married but Gauna not performed, widowed, divorced, separated, deserted, never married
Don't know
( ) Based on 25-49 unweighted cases

## 3.6 EDUCATION OF RESPONDENTS

| Per cent distribution of education of respondents across all India and type of residence | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Unweighted N** | **No schooling** | **<5 years complete** | **5-7 years complete** | **8-9 years complete** | **10-11 years complete** | **≥12 years complete** |
| Unweighted N | 21406 | 4121 | 1386 | 2764 | 3372 | 3934 | 5829 |
| **All India Type of Residence** | **21406** | **24.9** | **6.0** | **12.7** | **16.2** | **17.3** | **22.9** |
| Rural | 13095 | 29.1 | 6.9 | 12.7 | 16.3 | 15.3 | 19.7 |
| Urban | 8311 | 18.2 | 4.7 | 12.7 | 16.0 | 20.4 | 27.9 |

## TABLE 3.7: WEALTH QUINTILE

| Per cent distribution of wealth quintile across all India, type of residence and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Lowest** | **Second** | **Middle** | **Fourth** | **Highest** |
| Unweighted N | 21406 | 2692 | 3657 | 4271 | 5112 | 5674 |
| **All India Type of residence** | **21406** | **19.7** | **19.8** | **20.0** | **20.0** | **20.4** |
| Rural | 13095 | 28.7 | 24.6 | 20.4 | 15.1 | 11.3 |
| Urban | 8311 | 5.6 | 12.2 | 19.5 | 27.9 | 34.9 |
| **North zone** | **3971** | **7.0** | **8.5** | **17.4** | **26.7** | **40.4** |
| Chandigarh | 600 | 1.1 | 8.7 | 14.0 | 26.7 | 49.4 |
| Delhi | 611 | 2.2 | 11.6 | 27.2 | 26.8 | 32.2 |
| Haryana | 601 | 2.6 | 12.0 | 20.7 | 24.9 | 39.7 |
| Himachal Pradesh | 600 | 1.3 | 6.1 | 16.8 | 30.5 | 45.3 |
| Jammu & Kashmir | 355 | 0.2 | 1.4 | 15.8 | 25.1 | 57.5 |
| Punjab | 600 | 0.3 | 1.7 | 6.6 | 19.4 | 72.1 |
| Rajasthan | 604 | 14.3 | 10.9 | 18.9 | 30.2 | 25.7 |
| **Central zone** | **2403** | **27.4** | **24.3** | **16.6** | **14.6** | **17.2** |
| Chhattisgarh | 600 | 19.0 | 32.7 | 20.9 | 14.0 | 13.5 |
| Madhya Pradesh | 603 | 37.9 | 22.4 | 11.8 | 12.9 | 14.9 |
| Uttarakhand | 600 | 4.7 | 13.9 | 16.8 | 17.6 | 47.0 |
| Uttar Pradesh | 600 | 25.5 | 24.1 | 17.9 | 15.4 | 17.1 |
| **East zone** | **2401** | **40.1** | **27.3** | **14.1** | **12.3** | **6.1** |
| Bihar | 600 | 50.1 | 26.2 | 10.1 | 9.9 | 3.7 |
| Jharkhand | 600 | 52.3 | 24.4 | 11.5 | 7.9 | 3.9 |
| Odisha | 601 | 44.5 | 21.4 | 16.9 | 10.6 | 6.6 |
| West Bengal | 600 | 23.2 | 32.2 | 18.0 | 17.3 | 9.2 |
| **North-East zone** | **4817** | **14.4** | **30.8** | **23.4** | **18.7** | **12.7** |
| Arunachal Pradesh | 603 | 12.5 | 26.6 | 23.3 | 21.9 | 15.7 |
| Assam | 601 | 13.7 | 31.9 | 23.0 | 20.2 | 11.3 |
| Manipur | 600 | 2.7 | 18.5 | 34.7 | 22.5 | 21.6 |
| Meghalaya | 600 | 28.8 | 41.8 | 19.6 | 5.3 | 4.6 |
| Mizoram | 605 | 0.1 | 0.6 | 7.1 | 26.8 | 65.4 |
| Nagaland | 600 | 4.4 | 27.5 | 38.6 | 14.3 | 15.2 |
| Sikkim | 600 | 1.6 | 4.9 | 36.5 | 52.6 | 4.3 |
| Tripura | 608 | 26.2 | 37.4 | 18.8 | 11.8 | 5.8 |
| **West zone** | **3002** | **13.1** | **17.6** | **28.8** | **23.1** | **17.5** |
| Dadra & Nagar Haveli | 601 | 6.3 | 11.4 | 19.7 | 46.4 | 16.2 |
| Daman & Diu | 600 | 1.0 | 10.0 | 18.0 | 46.7 | 24.3 |
| Goa | 601 | 0.1 | 1.2 | 10.7 | 38.1 | 49.9 |
| Gujarat | 600 | 17.8 | 13.7 | 24.1 | 23.1 | 21.2 |
| Maharashtra | 600 | 10.5 | 20.3 | 32.0 | 22.7 | 14.6 |

| South zone | 4812 | 8.6 | 15.8 | 23.0 | 25.7 | 27.0 |
|---|---|---|---|---|---|---|
| Andaman & Nicobar Island | 600 | 0.6 | 6.9 | 12.5 | 35.7 | 44.4 |
| Andhra Pradesh | 600 | 8.3 | 16.5 | 35.3 | 25.0 | 14.9 |
| Karnataka | 601 | 19.2 | 16.4 | 22.9 | 28.7 | 12.7 |
| Kerala | 601 | 0.3 | 3.7 | 6.7 | 30.6 | 58.7 |
| Lakshadweep | 600 | 1.0 | 5.8 | 11.0 | 22.5 | 59.7 |
| Puducherry | 600 | 2.4 | 11.0 | 25.1 | 34.3 | 27.3 |
| Tamil Nadu | 610 | 4.3 | 23.4 | 26.9 | 24.2 | 21.2 |
| Telangana | 600 | 2.8 | 10.0 | 15.1 | 18.5 | 53.7 |

## TABLE 3.8: DRINKING WATER SOURCES

| Per cent distribution of drinking water sources across all India, type of residence, wealth quintile, states across all zone | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Improved drinking water sources | | | | | |
| | | Piped | | | | | |
| | Unweighted N | Into dwelling | Into yard | Public tap | Tube well | Well | |
| Unweighted N | 21406 | 7617 | 1893 | 4147 | 3870 | 1698 | |
| **All India Type of residence** | **21406** | **27.4** | **6.2** | **21.1** | **30.1** | **6.8** | |
| Rural | 13095 | 18.9 | 4.9 | 23.5 | 35.8 | 6.8 | |
| Urban | 8311 | 40.9 | 8.4 | 17.1 | 21.1 | 6.7 | |
| **Wealth quintile** | | | | | | | |
| Lowest | 2692 | 7.1 | 4.3 | 26.7 | 45.8 | 4.1 | |
| Second | 3657 | 15.1 | 3.8 | 30.1 | 38 | 4.6 | |
| Middle | 4271 | 29.5 | 7.3 | 23.2 | 23.8 | 8.1 | |
| Fourth | 5112 | 36.3 | 8.0 | 14.7 | 24.3 | 9.0 | |
| Highest | 5674 | 48.3 | 7.7 | 10.9 | 19.3 | 8.1 | |
| **North zone** | **3971** | **60.1** | **1.7** | **14.7** | **11.2** | **5.4** | |
| Chandigarh | 600 | 80.5 | 1.8 | 15.8 | 1.5 | - | |
| Delhi | 611 | 83.3 | 1.8 | 10.3 | 4.5 | - | |
| Haryana | 601 | 36.9 | 1.1 | 20.1 | 34.3 | 0.5 | |
| Himachal Pradesh | 600 | 48.9 | 4.5 | 27.6 | 7.0 | 0.1 | |
| Jammu & Kashmir | 355 | 97.8 | 0.8 | 0.2 | 0.2 | 0.4 | |
| Punjab | 600 | 56.8 | 3.1 | 19.2 | 20.7 | 0.1 | |
| Rajasthan | 604 | 59.4 | 1.2 | 12.8 | 2.7 | 12.1 | |
| **Central zone** | **2403** | **12.4** | **3.1** | **30.3** | **48.7** | **0.5** | |
| Chhattisgarh | 600 | 36.3 | 5.5 | 44.2 | 10.3 | 0.6 | |
| Madhya Pradesh | 603 | 11.4 | 4.8 | 25.1 | 42.6 | 1.5 | |
| Uttarakhand | 600 | 36.0 | 21.1 | 13.3 | 25.3 | 0.6 | |
| Uttar Pradesh | 600 | 6.8 | 0.8 | 30.9 | 60.5 | - | |
| **East zone** | **2401** | **7.0** | **2.0** | **18.9** | **62.8** | **1.7** | |
| Bihar | 600 | 0.1 | 0.7 | 1.2 | 97.1 | - | |
| Jharkhand | 600 | 4.0 | 2.3 | 36.5 | 23.2 | 0.o | |
| Odisha | 601 | 4.0 | 2.8 | 24.5 | 52.5 | 6.8 | |
| West Bengal | 600 | 16.6 | 2.8 | 28.1 | 46.8 | 1.8 | |
| **North-East zone** | **4817** | **7.7** | **6.2** | **12.0** | **47.4** | **11.8** | |
| Arunachal Pradesh | 603 | 37.1 | 20.5 | 8.6 | 18.9 | 8.9 | |
| Assam | 601 | 3.0 | 5.3 | 3.0 | 64.5 | 14.1 | |
| Manipur | 600 | 5.8 | 19.5 | 9.5 | 4.3 | - | |
| Meghalaya | 600 | 7.6 | 2.0 | 65.6 | 8.0 | 3.3 | |
| Mizoram | 605 | 18.8 | 6.3 | 9.1 | 1.2 | - | |
| Nagaland | 600 | 15.7 | 10.2 | 29.9 | 6.1 | 30.2 | |

| Non-improved drinking water sources | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Protected | | | | Unprotected | | | | |
| Spring | Rain wate | Community RO plant | Well | Spring | Tanker truck | Cart with small tank | Surface water | Bottled water |
| 114 | 40 | 673 | 564 | 192 | 204 | 27 | 127 | 227 |
| **0.2** | **0.4** | **2.6** | **2.7** | **0.2** | **0.4** | **0.2** | **0.3** | **1.3** |
| 0.3 | 0.6 | 3.1 | 4.1 | 0.2 | 0.4 | 0.2 | 0.5 | 0.5 |
| 0.2 | 0.1 | 1.9 | 0.5 | - | 0.3 | 0.1 | 0.1 | 2.5 |
| | | | | | | | | |
| 0.3 | 0.8 | 0.9 | 8.5 | 0.1 | 0.2 | 0.2 | 0.8 | 0.3 |
| 0.3 | 1.1 | 1.6 | 3.1 | 0.2 | 0.6 | 0.2 | 0.4 | 0.8 |
| 0.4 | 0.2 | 4.3 | 1.5 | 0.3 | 0.3 | 0.2 | 0.1 | 0.8 |
| 0.1 | - | 4.2 | 0.6 | 0.1 | 0.3 | 0.1 | 0.2 | 2.0 |
| 0.1 | 0.1 | 2.3 | 0.2 | 0.1 | 0.4 | 0.1 | 0.1 | 2.4 |
| **0.1** | **0.8** | **1.2** | **1.8** | **0.5** | **0.8** | **0.5** | **0.1** | **1.2** |
| - | - | 0.5 | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - |
| - | - | 0.3 | - | - | - | - | - | 6.8 |
| 2.6 | - | 0.2 | 0.4 | 8.1 | - | - | 0.8 | - |
| 0.2 | 0.2 | - | 0.2 | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - |
| - | 1.7 | 2.6 | 4.1 | 0.3 | 1.7 | 1.1 | 0.1 | 0.3 |
| **0.2** | **0.1** | **0.4** | **4.1** | **-** | **-** | **-** | **0.2** | **-** |
| 0.5 | - | 1.1 | 1.2 | - | - | - | 0.3 | - |
| - | 0.3 | - | 13.6 | - | 0.2 | - | 0.5 | 0.2 |
| 3.6 | - | - | - | - | - | - | 0.2 | - |
| - | - | 0.4 | 0.6 | - | - | - | - | - |
| **-** | **-** | **0.2** | **5.9** | **0.1** | **0.1** | **0.1** | **0.2** | **1.0** |
| - | - | 0.3 | 0.4 | - | - | 0.2 | - | 0.1 |
| - | - | - | 32.7 | 0.2 | - | - | 0.4 | 0.2 |
| - | - | 0.8 | 7.3 | 0.2 | - | 0.1 | 0.6 | - |
| - | - | - | 1.0 | - | 0.4 | - | - | 2.6 |
| **0.9** | **-** | **2.3** | **4.8** | **1.6** | **1.4** | **-** | **3.6** | **0.3** |
| 0.2 | - | - | 4.5 | 0.8 | - | - | 0.5 | - |
| 0.4 | - | - | 4.7 | 0.1 | - | - | 4.6 | 0.3 |
| 6.4 | - | - | 0.5 | 24.3 | 21.6 | 0.7 | 7.4 | - |
| 3.4 | - | 1.3 | 7.0 | 0.6 | 0.3 | - | 0.9 | - |
| 0.2 | 0.1 | 62.6 | - | - | 1.7 | - | - | - |
| - | 0.4 | 0.2 | 5.6 | - | 0.7 | - | - | 0.9 |

| Per cent distribution of drinking water sources across all India, type of residence, wealth quintile, states across all zone | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Improved drinking water sources | | | | | |
| | | Piped | | | | | |
| | Unweighted N | Into dwelling | Into yard | Public tap | Tube well | Well | |
| **West zone** | **3002** | **38.8** | **19.3** | **11.6** | **11.1** | **16.2** | |
| Dadra & Nagar Haveli | 601 | 35.4 | 45.5 | 12.8 | 3.9 | 0.1 | |
| Daman & Diu | 600 | 31.2 | 34.3 | 19.3 | 2.4 | - | |
| Goa | 601 | 81.5 | 12.5 | 0.5 | 0.4 | 0.1 | |
| Gujarat | 600 | 21.5 | 50.1 | 15.9 | 1.3 | 5.8 | |
| Maharashtra | 600 | 48.6 | 0.6 | 9.0 | 17.3 | 22.9 | |
| **South zone** | **4812** | **34.9** | **6.2** | **25.8** | **7.6** | **10.2** | |
| Andaman & Nicobar Island | 600 | 89.4 | 6.8 | 3.4 | - | - | |
| Andhra Pradesh | 600 | 28.6 | 5.6 | 34.4 | 17.0 | 0.2 | |
| Karnataka | 601 | 24.6 | 6.6 | 13.8 | 12.5 | 3.9 | |
| Kerala | 601 | 17.3 | 2.9 | 4.4 | 3.1 | 71.8 | |
| Lakshadweep | 600 | 6.1 | - | 6.1 | - | 87.1 | |
| Puducherry | 600 | 58.1 | 4.1 | 37.8 | - | - | |
| Tamil Nadu | 610 | 31.2 | 8.7 | 53.4 | 2.5 | 0.8 | |
| Telangana | 600 | 82.9 | 4.6 | 5.9 | 0.4 | 0.6 | |
| -Based on 0 percentage | | | | | | | |

| Non-improved drinking water sources | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Protected | | | | Unprotected | | | | |
| Spring | Rain wate | Community RO plant | Well | Spring | Tanker truck | Cart with small tank | Surface water | Bottled water |
| **-** | **0.3** | **0.7** | **0.4** | **-** | **0.2** | **0.1** | **0.2** | **0.8** |
| - | - | 0.2 | - | - | - | - | - | 2.2 |
| - | - | 1.5 | - | - | 0.1 | - | 0.1 | 10.5 |
| - | - | - | - | - | 3.5 | 1.2 | 0.2 | - |
| - | 0.8 | 1.1 | 0.7 | - | 0.4 | 0.3 | - | 2.1 |
| - | - | 0.4 | 0.3 | - | - | - | 0.4 | - |
| **0.6** | **1.1** | **8.8** | **0.7** | **0.1** | **0.6** | **0.2** | **0.2** | **3.1** |
| - | - | - | - | - | - | - | - | 0.4 |
| 0.2 | 0.1 | 4.2 | 0.4 | - | 0.1 | - | 0.3 | 8.7 |
| 1.6 | 3.6 | 27.0 | 1.6 | 0.3 | 1.8 | 0.6 | 0.5 | 1.6 |
| - | - | 0.1 | 0.4 | - | - | - | - | - |
| 0.2 | 0.5 | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - |
| 0.1 | - | - | - | - | 0.2 | - | - | 3.1 |
| 0.2 | 0.2 | 1.9 | 0.6 | - | - | 0.4 | 0.3 | 2.1 |

## TABLE 3.9: TOILET FACILITIES

| Per cent distribution of toilet facilities across all India, type of residence, wealth quintile, states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Flush to a piped sewer** | **Flush to a septic tank** | **Flush to a pit latrine** | **Flush to somewhere else** | |
| Unweighted N | 21406 | 3370 | 8562 | 3551 | 184 | |
| **All India Type of residence** | **21406** | **15.4** | **32.1** | **15.5** | **0.8** | |
| Rural | 13095 | 11.2 | 27.2 | 15.9 | 0.8 | |
| Urban | 8311 | 22.1 | 39.8 | 14.9 | 0.6 | |
| **Wealth quintile** | | | | | | |
| Lowest | 2692 | 3.2 | 11.9 | 14.2 | 1.2 | |
| Second | 3657 | 8.7 | 25.5 | 18.4 | 1.1 | |
| Middle | 4271 | 18.5 | 30.7 | 15.6 | 0.8 | |
| Fourth | 5112 | 23.9 | 41.2 | 15.1 | 0.4 | |
| Highest | 5674 | 22.3 | 50.3 | 14.3 | 0.3 | |
| **North zone** | **3971** | **50.3** | **29.0** | **10.6** | **1.1** | |
| Chandigarh | 600 | 62.9 | 19.6 | 9.8 | 5.4 | |
| Delhi | 611 | 82.1 | 10.9 | 1.1 | 3.2 | |
| Haryana | 601 | 42.6 | 43.4 | 10.8 | 0.5 | |
| Himachal Pradesh | 600 | 25.1 | 26.3 | 30.8 | 5.3 | |
| Jammu & Kashmir | 355 | 80.4 | 0.4 | 18.0 | 0.6 | |
| Punjab | 600 | 34.7 | 38.1 | 24.3 | 0.5 | |
| Rajasthan | 604 | 50.2 | 29.0 | 3.6 | 0.6 | |
| **Central zone** | **2403** | **3.9** | **31.1** | **16.3** | **0.5** | |
| Chhattisgarh | 600 | 11.1 | 34.5 | 35.3 | 2.4 | |
| Madhya Pradesh | 603 | 2.9 | 33.4 | 29.5 | 0.7 | |
| Uttarakhand | 600 | 12.8 | 40.0 | 43.6 | 1.3 | |
| Uttar Pradesh | 600 | 2.4 | 28.9 | 4.9 | - | |
| **East zone** | **2401** | **2.8** | **27.7** | **20.9** | **0.3** | |
| Bihar | 600 | 0.2 | 40.0 | 7.2 | - | |
| Jharkhand | 600 | - | 27.8 | 12.2 | 1.0 | |
| Odisha | 601 | 1.1 | 8.1 | - | - | |
| West Bengal | 600 | 7.3 | 24.0 | 48.0 | 0.3 | |
| **North-East zone** | **4817** | **2.5** | **33.8** | **15.7** | **2.3** | |
| Arunachal Pradesh | 603 | 1.0 | 42.3 | 16.9 | 0.1 | |
| Assam | 601 | 2.6 | 24.4 | 16.4 | 3.4 | |
| Manipur | 600 | 1.4 | 48.0 | 24.2 | - | |
| Meghalaya | 600 | 0.3 | 67.6 | 12.1 | - | |
| Mizoram | 605 | - | 99.7 | 0.1 | - | |
| Nagaland | 600 | 15.7 | 10.2 | 29.9 | 6.1 | |
| Nagaland | 600 | 2.3 | 73.4 | 21.5 | 0.1 | |

| Flush don't know where | Ventilated improved | Pit (VIP) / | Community RO plant | Well | Spring | Tanker truck | Cart with small tank |
|---|---|---|---|---|---|---|---|
| 369 | 164 | 172 | 1744 | 190 | 486 | 670 | 1909 |
| **3.7** | **0.9** | **0.9** | **7.1** | **0.6** | **4.1** | **2.0** | **16.8** |
| 3.8 | 0.8 | 1.2 | 7.2 | 0.7 | 5.2 | 2.1 | 23.9 |
| 3.6 | 1.1 | 0.4 | 6.9 | 0.5 | 2.3 | 1.9 | 5.6 |
| | | | | | | | |
| 1.9 | 0.3 | 0.5 | 5.1 | 0.7 | 3.0 | 3.4 | 54.4 |
| 3.4 | 0.5 | 1.4 | 8.9 | 0.9 | 5.9 | 2.6 | 22.6 |
| 7.5 | 1.0 | 1.1 | 10.6 | 0.4 | 5.4 | 1.0 | 7.4 |
| 4.9 | 1.0 | 1.2 | 7.1 | 0.4 | 3.5 | 0.4 | 0.7 |
| 0.9 | 1.8 | 0.4 | 3.8 | 0.6 | 2.5 | 2.8 | - |
| **1.0** | **-** | **0.1** | **0.3** | **0.5** | **0.5** | **1.9** | **4.7** |
| 2.1 | - | - | - | - | - | - | 0.2 |
| 0.3 | - | - | - | - | - | - | 2.4 |
| 0.4 | - | 0.2 | 0.1 | - | 0.9 | - | 1.1 |
| 7.9 | 0.3 | 0.2 | 0.4 | 1.1 | 0.3 | 0.4 | 1.9 |
| 0.2 | - | - | 0.2 | - | - | 0.2 | - |
| 0.2 | - | 0.3 | 0.6 | 1.3 | - | - | - |
| 1.0 | - | 0.1 | 0.4 | 0.5 | 0.7 | 4.2 | 9.6 |
| **1.0** | **1.6** | **1.7** | **0.5** | **0.1** | **15.0** | **0.5** | **27.7** |
| 6.0 | 0.3 | 0.5 | 0.1 | 0.1 | 1.5 | 2.6 | 5.5 |
| - | - | 0.2 | 1.3 | - | 4.6 | 0.7 | 26.7 |
| - | - | - | - | - | 0.1 | - | 2.3 |
| 0.6 | 2.7 | 2.7 | 0.3 | 0.2 | 23.4 | - | 34.0 |
| **0.1** | **-** | **1.6** | **10.5** | **0.4** | **0.2** | **1.7** | **33.8** |
| - | - | 0.1 | - | - | 0.3 | 2.8 | 49.2 |
| 0.4 | - | 0.3 | 5.2 | 1.0 | 0.2 | 4.0 | 47.7 |
| - | - | 9.2 | 31.0 | 0.3 | 0.4 | - | 49.9 |
| - | - | - | 13.8 | 0.7 | - | 0.4 | 5.2 |
| **3.4** | **1.4** | **3.2** | **23.8** | **4.3** | **7.4** | **0.2** | **1.5** |
| 0.9 | 2.8 | 0.3 | 24.7 | 2.2 | 6.3 | - | 2.4 |
| 5.1 | 1.7 | 4.5 | 24.0 | 5.0 | 10.8 | 0.3 | 1.6 |
| - | - | - | 25.5 | 0.4 | 0.5 | - | - |
| - | - | 1.5 | 12.4 | 2.6 | 2.0 | - | 1.4 |
| - | - | - | - | 0.2 | - | 0.1 | - |
| 30.2 | - | 0.4 | 0.2 | 5.6 | - | 0.7 | - |
| - | - | 0.2 | 2.3 | - | 0.1 | - | - |

| Per cent distribution of toilet facilities across all India, type of residence, wealth quintile, states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Flush to a piped sewer** | **Flush to a septic tank** | **Flush to a pit latrine** | **Flush to somewhere else** | |
| Sikkim | 600 | 27.7 | 60.2 | 11.1 | - | |
| Tripura | 608 | 1.7 | 15.7 | 11.6 | 0.3 | |
| **West zone** | **3002** | **13.4** | **22.4** | **12.1** | **0.2** | |
| Dadra & Nagar Haveli | 601 | 3.8 | 34.1 | 27.6 | - | |
| Daman & Diu | 600 | 10.2 | 26.3 | 24.6 | - | |
| Goa | 601 | 7.3 | 11.1 | - | - | |
| Gujarat | 600 | 29.2 | 11.6 | 27.2 | 0.6 | |
| Maharashtra | 600 | 3.9 | 29.0 | 3.1 | - | |
| **South zone** | **4812** | **20.0** | **44.3** | **15.3** | **1.3** | |
| Andaman & Nicobar Island | 600 | 0.3 | 94.3 | 4.9 | - | |
| Andhra Pradesh | 600 | 4.6 | 56.9 | 12.8 | 0.8 | |
| Karnataka | 601 | 51.7 | 11.2 | 14.9 | 2.5 | |
| Kerala | 601 | 1.0 | 63.5 | 30.9 | 0.1 | |
| Lakshadweep | 600 | 0.4 | 84.6 | 14.6 | - | |
| Puducherry | 600 | 31.4 | 59.1 | 3.6 | 0.2 | |
| Tamil Nadu | 610 | 10.6 | 54.7 | 3.2 | 1.0 | |
| Telangana | 600 | 7.7 | 59.4 | 29.3 | 1.2 | |

| Flush don't know where | Ventilated improved | Pit (VIP) / | Community RO plant | Well | Spring | Tanker truck | Cart with small tank |
|---|---|---|---|---|---|---|---|
| - | - | - | 1.0 | - | - | - | - |
| 0.8 | 1.6 | 1.2 | 50.9 | 7.7 | 0.1 | - | 3.0 |
| **17.7** | **2.1** | **0.1** | **16.7** | **1.2** | **0.6** | **4.7** | **8.9** |
| - | 1.9 | 0.4 | 17.2 | 1.8 | 4.4 | - | 8.8 |
| - | 5.7 | 4.1 | 13.3 | 0.7 | 13.9 | 0.2 | 1.0 |
| - | - | 0.5 | - | - | 0.8 | 80.0 | 0.2 |
| 0.8 | 1.7 | 0.2 | 11.5 | 2.2 | 1.4 | 0.4 | 13.2 |
| 28.4 | 2.3 | - | 20.2 | 0.6 | - | 6.0 | 6.4 |
| **1.4** | **0.8** | **0.3** | **4.9** | **0.3** | **1.2** | **2.3** | **7.7** |
| - | - | - | - | - | - | - | 0.5 |
| 0.2 | 0.5 | 0.8 | 20.2 | 0.4 | 0.3 | 0.3 | 2.3 |
| 3.5 | 1.6 | 0.4 | 3.3 | 0.5 | 1.5 | 7.6 | 1.3 |
| 0.3 | 1.2 | - | 2.7 | 0.1 | 0.3 | - | - |
| - | - | - | - | - | - | 0.4 | - |
| 0.2 | 0.7 | 0.1 | 0.7 | 0.5 | 0.8 | 0.3 | 2.3 |
| 1.1 | 0.4 | - | 0.4 | 0.2 | 2.1 | 0.2 | 25.5 |
| 0.1 | - | 0.3 | 0.9 | 0.2 | 0.8 | 0.1 | 0.1 |

## TABLE 3.10: ACCESS TO THE HEALTH FACILITY

| Per cent distribution of access to health facility across all India, type of residence, wealth quintile, states across all zones | | | | |
|---|---|---|---|---|
| | **Unweighted N** | **Public health sector** | **Private health sector** | **Others** |
| Unweighted N | 21406 | 13742 | 7457 | 207 |
| **All India Wealth quintile** | **21406** | **56.1** | **43.0** | **0.9** |
| Rural | 13095 | 55.0 | 43.8 | 1.2 |
| Urban | 8311 | 57.9 | 41.7 | 0.4 |
| **Wealth quintile** | | | | |
| Lowest | 2692 | 54.4 | 44.0 | 1.6 |
| Second | 3657 | 57.3 | 41.6 | 1.1 |
| Middle | 4271 | 61.2 | 38.2 | 0.6 |
| Fourth | 5112 | 56.8 | 42.6 | 0.7 |
| Highest | 5674 | 51.1 | 48.2 | 0.7 |
| **North zone** | **3971** | **29.5** | **48.2** | **2.0** |
| Chandigarh | 600 | 4.4 | 95.3 | 0.2 |
| Delhi | 611 | 33.8 | 63.7 | 2.5 |
| Haryana | 601 | 16.7 | 79.3 | 4.0 |
| Himachal Pradesh | 600 | 37.7 | 53.5 | 8.8 |
| Jammu & Kashmir | 355 | 85.2 | 13.5 | 1.3 |
| Punjab | 600 | 34.6 | 63.0 | 2.4 |
| Rajasthan | 604 | 67.0 | 32.5 | 0.5 |
| **Central zone** | **2403** | **26.6** | **72.3** | **1.1** |
| Chhattisgarh | 600 | 68.7 | 29.7 | 1.5 |
| Madhya Pradesh | 603 | 34.1 | 65.0 | 0.8 |
| Uttarakhand | 600 | 8.6 | 91.4 | - |
| Uttar Pradesh | 600 | 15.9 | 82.9 | 1.3 |
| **East zone** | **2401** | **49.1** | **49.9** | **1.0** |
| Bihar | 600 | 20.8 | 79.2 | - |
| Jharkhand | 600 | 39.8 | 58.6 | 1.6 |
| Odisha | 601 | 93.2 | 4.5 | 2.3 |
| West Bengal | 600 | 61.4 | 37.5 | 1.1 |
| **North-East zone** | **4817** | **82.3** | **17.6** | **0.1** |
| Arunachal Pradesh | 603 | 92.8 | 7.2 | - |
| Assam | 601 | 83.5 | 16.4 | 0.1 |
| Manipur | 600 | 84.0 | 16.0 | - |
| Meghalaya | 600 | 73.1 | 26.5 | 0.4 |
| Mizoram | 605 | 71.2 | 28.8 | - |
| Nagaland | 600 | 87.6 | 12.4 | - |
| Sikkim | 600 | 71.8 | 28.2 | - |
| Tripura | 608 | 80.5 | 19.5 | - |

| | | | | |
|---|---|---|---|---|
| **West zone** | **3002** | **67.0** | **33.0** | **0.1** |
| Dadra & Nagar Haveli | 601 | 72.6 | 27.4 | - |
| Daman & Diu | 600 | 73.5 | 26.2 | 0.3 |
| Goa | 601 | 88.4 | 11.6 | - |
| Gujarat | 600 | 77.9 | 22.1 | - |
| Maharashtra | 600 | 59.9 | 40.0 | 0.1 |
| **South zone** | **4812** | **80.6** | **18.7** | **0.7** |
| Andaman & Nicobar Island | 600 | 87.6 | 12.4 | - |
| Andhra Pradesh | 600 | 80.6 | 19.4 | - |
| Karnataka | 601 | 77.8 | 20.2 | 2.0 |
| Kerala | 601 | 88.0 | 11.7 | 0.3 |
| Lakshadweep | 600 | 99.9 | - | 0.1 |
| Puducherry | 600 | 89.1 | 10.8 | 0.1 |
| Tamil Nadu | 610 | 75.6 | 24.2 | 0.2 |
| Telangana | 600 | 88.8 | 10.8 | 0.4 |
| **Public Health Sector:** Govt./municipal hospital, Govt. dispensary, UHC / UHP/UFWC, CHC/rural hospital/block PHC, PHC / additional PHC, Sub-Centre, Vaidya/hakim/homeopath (AYUSH), Anganwadi/ICDS centre, Asha, Govt. Mobile clinic, other public sector, health facility, NGO or trust hospital/clinic<br>**Private Health sector:** Private hospital, Private doctor/clinic, Private paramedic, Vaidya/hakim/homoeopath (AYUSH), traditional healer, pharmacy/drugstore, Dai (TBA), other private sector, health facility<br>**Others:** Shop, home treatment, others | | | | |
| -Based on 0 percentage | | | | |

## TABLE 3.11: ACCESS TO HEALTH SCHEMES

| **Per cent distribution of access to health scheme across all India, type of residence, wealth quintile, states across all zones** | | | | |
|---|---|---|---|---|
| | **Unweighted N** | **Yes** | **No** | **Don't know** |
| Unweighted N | 21406 | 3287 | 16327 | 1792 |
| **All India**<br>**Type of residence** | **21406** | **13.6** | **74.3** | **12.1** |
| Rural | 13095 | 12.2 | 75.2 | 12.5 |
| Urban | 8311 | 15.7 | 72.7 | 11.5 |
| **Wealth quintile** | | | | |
| Lowest | 2692 | 9.1 | 75.6 | 15.2 |
| Second | 3657 | 12.7 | 75.9 | 11.4 |
| Middle | 4271 | 17.2 | 69.0 | 13.8 |
| Fourth | 5112 | 12.7 | 75.2 | 12.1 |
| Highest | 5674 | 16.1 | 75.6 | 8.3 |
| **North zone** | **3971** | **5.4** | **85.2** | **9.4** |
| Chandigarh | 600 | 8.1 | 90.1 | 1.8 |
| Delhi | 611 | 2.3 | 82.0 | 15.7 |
| Haryana | 601 | 2.2 | 72.5 | 25.3 |

| Per cent distribution of access to health scheme across all India, type of residence, wealth quintile, states across all zones | | | | |
|---|---|---|---|---|
| | **Unweighted N** | **Yes** | **No** | **Don't know** |
| Himachal Pradesh | 600 | 21.6 | 71.4 | 7.1 |
| Jammu & Kashmir | 355 | 0.9 | 88.3 | 10.8 |
| Punjab | 600 | 15.9 | 82.9 | 1.2 |
| Rajasthan | 604 | 1.8 | 92.2 | 5.9 |
| **Central zone** | **2403** | **3.9** | **90.7** | **5.4** |
| Chhattisgarh | 600 | 13.6 | 71.0 | 15.5 |
| Madhya Pradesh | 603 | 2.2 | 96.2 | 1.6 |
| Uttarakhand | 600 | 3.5 | 89.8 | 6.7 |
| Uttar Pradesh | 600 | 2.8 | 92.0 | 5.2 |
| **East zone** | **2401** | **15.3** | **79.8** | **5.0** |
| Bihar | 600 | 2.7 | 90.7 | 6.6 |
| Jharkhand | 600 | 22.7 | 70.0 | 7.3 |
| Odisha | 601 | 47.9 | 43.4 | 8.8 |
| West Bengal | 600 | 10.3 | 89.0 | 0.7 |
| **North-East zone** | **4817** | **16.9** | **80.7** | **2.5** |
| Arunachal Pradesh | 603 | 5.4 | 94.1 | 0.5 |
| Assam | 601 | 18.1 | 79.5 | 2.3 |
| Manipur | 600 | 3.6 | 94.8 | 1.6 |
| Meghalaya | 600 | 18.6 | 80.6 | 0.8 |
| Mizoram | 605 | 35.5 | 61.7 | 2.8 |
| Nagaland | 600 | 1.0 | 91.6 | 7.4 |
| Sikkim | 600 | 7.0 | 92.9 | 0.1 |
| Tripura | 608 | 21.2 | 75.3 | 3.5 |
| **West zone** | **3002** | **14.9** | **62.2** | **22.9** |
| Dadra & Nagar Haveli | 601 | 34.1 | 60.8 | 5.1 |
| Daman & Diu | 600 | 14.5 | 83.3 | 2.2 |
| Goa | 601 | 32.6 | 47.0 | 20.5 |
| Gujarat | 600 | 37.6 | 50.8 | 11.7 |
| Maharashtra | 600 | 0.7 | 69.4 | 29.9 |
| **South zone** | **4812** | **24.0** | **56.2** | **19.8** |
| Andaman & Nicobar Island | 600 | 10.5 | 88.6 | 0.9 |
| Andhra Pradesh | 600 | 40.3 | 49.6 | 10.1 |
| Karnataka | 601 | 15.1 | 27.7 | 57.2 |
| Kerala | 601 | 32.2 | 61.2 | 6.6 |
| Lakshadweep | 600 | 12.8 | 69.2 | 18.0 |
| Puducherry | 600 | 11.0 | 88.5 | 0.5 |
| Tamil Nadu | 610 | 20.7 | 78.5 | 0.8 |
| Telangana | 600 | 22.9 | 73.3 | 3.8 |

## TABLE 3.12: TYPE OF HEALTH SCHEMES

| Per cent distribution of access to health scheme across all India, type of residence, wealth quintile, states across all zones | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Unweighted N** | **ESIS** | **CGHS** | **SHIS** | **RSBY** | **CHIP** | **OHITE** | **MRE** | **OPCHI** |
| Unweighted N | 3287 | 272 | 641 | 1207 | 1228 | 174 | 247 | 112 | 403 |
| **All India** | **3287** | **10.3** | **23.6** | **51.4** | **39.9** | **6.9** | **8.2** | **3.1** | **6.1** |
| **Type of residence** | | | | | | | | | |
| Rural | 1875 | 5.4 | 25.5 | 53.0 | 38.3 | 4.4 | 6.6 | 1.5 | 5.2 |
| Urban | 1412 | 16.2 | 21.3 | 49.5 | 41.9 | 10.0 | 10.1 | 5.1 | 7.2 |
| **Wealth quintile** | | | | | | | | | |
| Lowest | 343 | 2.7 | 23.1 | 37.3 | 50.7 | 0.4 | 2.5 | 1.1 | 0.4 |
| Second | 534 | 6.3 | 23.9 | 52.5 | 30.5 | 3.0 | 9.1 | 0.3 | 1.3 |
| Middle | 663 | 7.5 | 24.9 | 57.4 | 46.2 | 3.8 | 5.9 | 0.3 | 3.0 |
| Fourth | 702 | 10.8 | 23.9 | 51.1 | 45.9 | 6.9 | 8.7 | 2.9 | 6.2 |
| Highest | 1045 | 19.9 | 22.2 | 52.3 | 29.9 | 16.7 | 12.4 | 9.6 | 16.1 |
| **North zone** | **315** | **15.1** | **15.7** | **36.7** | **12.8** | **12.6** | **20.5** | **16.9** | **33.5** |
| Chandigarh | 55 | 21.2 | 4.8 | - | 1.9 | 2.1 | 7.9 | 5.2 | 56.9 |
| Delhi | 14 | 23.2 | 5.4 | 36.8 | 14.5 | 5.4 | 45.7 | - | 5.3 |
| Haryana | 13 | 14.9 | 32.7 | 36.5 | 15.9 | - | - | - | - |
| Himachal Pradesh | 132 | 10.3 | 13.1 | 22.6 | 17.6 | 11.5 | 14.1 | 17.1 | 63.3 |
| Jammu & Kashmir | 2 | 100.0 | 100.0 | 74.4 | - | 74.4 | 100.0 | 25.6 | - |
| Punjab | 87 | 18.4 | 16.4 | 37.8 | 14.8 | 17.4 | 21.9 | 24.8 | 38.3 |
| Rajasthan | 12 | - | 6.0 | 48.9 | - | - | 19.7 | - | 4.1 |
| **Central zone** | **132** | **7.6** | **16.3** | **23.1** | **30.1** | **6.3** | **1.7** | **0.4** | **14.5** |
| Chhattisgarh | 77 | 3.4 | 1.8 | 22.9 | 57.9 | 3.0 | 1.7 | 1.0 | 4.2 |
| Madhya Pradesh | 14 | - | 42.7 | 28.6 | 7.1 | 4.2 | 7.1 | - | 10.6 |
| Uttarakhand | 24 | 13.8 | 35.6 | 27.4 | 7.1 | 6.9 | - | - | 8.3 |
| Uttar Pradesh | 17 | 13.7 | 19.2 | 21.0 | 13.8 | 10.0 | - | - | 26.0 |
| **East zone** | **514** | **2.3** | **18.6** | **33.4** | **44.1** | **2.3** | **1.2** | **0.2** | **1.1** |
| Bihar | 19 | - | - | 45.5 | 50.9 | - | - | - | - |
| Jharkhand | 150 | 6.0 | 63.8 | 1.4 | 18.8 | - | 2.4 | 1.2 | 1.0 |
| Odisha | 280 | 1.5 | 7.3 | 52.3 | 46.1 | 0.8 | - | - | - |
| West Bengal | 65 | 1.5 | 10.9 | 15.7 | 59.1 | 8.1 | 3.3 | - | 3.8 |
| **North-East zone** | **648** | **1.3** | **43.4** | **37.0** | **15.5** | **1.5** | **0.8** | **0.4** | **5.5** |
| Arunachal Pradesh | 29 | - | 13.2 | 4.1 | - | 3.3 | 69.0 | 5.8 | 14.5 |
| Assam | 106 | 0.9 | 54.4 | 40.2 | 1.1 | 2.0 | - | - | 7.1 |
| Manipur | 22 | 22.3 | 9.3 | 28.3 | 27.0 | - | 9.4 | 18.0 | 9.8 |
| Meghalaya | 102 | - | 9.4 | 79.7 | 9.1 | 0.6 | - | 0.6 | 1.5 |
| Mizoram | 204 | 3.3 | 24.4 | 20.0 | 58.7 | - | - | 0.4 | 0.6 |
| Nagaland | 4 | - | 88.6 | - | - | - | - | - | - |
| Sikkim | 42 | 8.1 | 59.5 | 4.6 | 49.0 | - | 17.7 | 4.3 | 2.8 |

| Per cent distribution of access to health scheme across all India, type of residence, wealth quintile, states across all zones | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Unweighted N | ESIS | CGHS | SHIS | RSBY | CHIP | OHITE | MRE | OPCHI |
| Tripura | 139 | 0.6 | 17.5 | 3.6 | 78.3 | - | - | - | 1.0 |
| **West zone** | **693** | **17.0** | **34.7** | **33.4** | **84.4** | **4.5** | **3.6** | **2.5** | **4.1** |
| Dadra & Nagar Haveli | 199 | 1.0 | 2.2 | 8.9 | 88.8 | 0.5 | 14.8 | 1.2 | 0.3 |
| Daman & Diu | 91 | 0.9 | 13.2 | 14.9 | 64.7 | - | 4.0 | 2.6 | 6.0 |
| Goa | 183 | 8.7 | 7.7 | 24.9 | 9.0 | 10.4 | 4.9 | 5.3 | 69.2 |
| Gujarat | 216 | 17.0 | 34.8 | 32.8 | 87.9 | 3.7 | 2.8 | 1.8 | 1.9 |
| Maharashtra | 4 | 26.5 | 62.5 | 64.0 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 |
| **South zone** | **985** | **12.4** | **21.6** | **75.6** | **26.8** | **10.2** | **13.8** | **3.9** | **5.0** |
| Andaman & Nicobar Island | 61 | - | 18.3 | 1.7 | 83.1 | - | - | - | - |
| Andhra Pradesh | 250 | 0.7 | 1.6 | 90.9 | 15.7 | - | 21.2 | - | - |
| Karnataka | 92 | 7.9 | 81.1 | 87.0 | 81.3 | 14.7 | 9.4 | 2.5 | - |
| Kerala | 185 | 21.7 | 5.2 | 50.1 | 11.1 | 20.6 | 9.9 | 2.2 | 6.0 |
| Lakshadweep | 77 | 25.1 | 30.3 | 38.3 | 7.4 | 9.5 | 0.9 | - | - |
| Puducherry | 65 | 12.7 | 8.9 | 32.1 | - | 4.2 | 5.6 | 10.8 | 49.9 |
| Tamil Nadu | 118 | 7.1 | 4.8 | 79.7 | 0.9 | 3.7 | 6.5 | - | 5.5 |
| Telangana | 137 | 40.1 | 32.1 | 53.1 | 40.4 | 24.3 | 21.5 | 22.0 | 19.1 |

**ESIS:** Employees State Insurance Scheme, **CGHS:** Central Government Health Scheme, **SHIS:** State Health Insurance Scheme,
**RSBY:** Rashtriya Swasthya Bima Yojana, **CHIP:** Community health insurance programme, **OHIP:** Other health insurance through employer, **MRE:** Medical reimbursement from employer, **OPCHI:** Other privately purchased commercial health insurance

## TABLE 3.13: ACCESS TO RATION CARD

| Per cent distribution of access to ration card across all India, type of residence, wealth quintile, states across all zones | | | | | |
|---|---|---|---|---|---|
| | **Unweighted N** | **Yes (card shown)** | **Yes (card not shown)** | **No** | **Don't know** |
| Unweighted N | 21406 | 8998 | 7547 | 4206 | 655 |
| **All India** | **21406** | **43.1** | **34.3** | **17.7** | **5.0** |
| **Type of residence** | | | | | |
| Rural | 13095 | 44.8 | 33.4 | 17.0 | 4.8 |
| Urban | 8311 | 40.3 | 35.7 | 18.7 | 5.2 |
| **Wealth quintile** | | | | | |
| Lowest | 2692 | 35.5 | 32.4 | 25.1 | 7.0 |
| Second | 3657 | 43.6 | 32.8 | 19.1 | 4.5 |
| Middle | 4271 | 47.8 | 30.7 | 15.2 | 6.2 |
| Fourth | 5112 | 42.5 | 39.7 | 13.6 | 4.2 |
| Highest | 5674 | 45.6 | 35.9 | 15.5 | 3.0 |
| **North zone** | **3971** | **55.2** | **27.7** | **14.1** | **3.0** |
| Chandigarh | 600 | 9.2 | 17.1 | 70.5 | 3.3 |
| Delhi | 611 | 14.3 | 36.9 | 40.9 | 7.9 |
| Haryana | 601 | 41.1 | 39.2 | 17.0 | 2.7 |
| Himachal Pradesh | 600 | 41.0 | 40.6 | 11.9 | 6.6 |
| Jammu & Kashmir | 355 | 21.8 | 69.0 | 2.4 | 6.9 |
| Punjab | 600 | 54.5 | 21.1 | 20.2 | 4.2 |
| Rajasthan | 604 | 77.1 | 16.4 | 5.9 | 0.6 |
| **Central zone** | **2403** | **36.6** | **35.9** | **25.5** | **2.0** |
| Chhattisgarh | 600 | 46.2 | 33.5 | 18.3 | 2.0 |
| Madhya Pradesh | 603 | 33.3 | 32.8 | 33.4 | 0.4 |
| Uttarakhand | 600 | 32.8 | 33.2 | 32.9 | 1.1 |
| Uttar Pradesh | 600 | 36.4 | 38.0 | 22.9 | 2.7 |
| **East zone** | **2401** | **39.8** | **40.2** | **19.9** | **0.1** |
| Bihar | 600 | 10.1 | 53.5 | 36.3 | - |
| Jharkhand | 600 | 30.2 | 47.6 | 21.9 | 0.3 |
| Odisha | 601 | 60.4 | 27.1 | 12.2 | 0.3 |
| West Bengal | 600 | 64.7 | 29.6 | 5.8 | - |
| **North-East zone** | **4817** | **27.8** | **38.3** | **33.6** | **0.3** |
| Arunachal Pradesh | 603 | 26.8 | 33.5 | 37.1 | 2.6 |
| Assam | 601 | 18.2 | 44.0 | 37.7 | 0.1 |
| Manipur | 600 | 42.7 | 17.2 | 39.4 | 0.7 |
| Meghalaya | 600 | 11.8 | 46.0 | 42.0 | 0.2 |
| Mizoram | 605 | 64.8 | 32.4 | 2.7 | - |
| Nagaland | 600 | 33.4 | 33.1 | 31.6 | 1.9 |
| Sikkim | 600 | 3.9 | 62.2 | 33.6 | 0.3 |

| Per cent distribution of access to ration card across all India, type of residence, wealth quintile, states across all zones | | | | | |
|---|---|---|---|---|---|
| | Unweighted N | Yes (card shown) | Yes (card not shown) | No | Don't know |
| Tripura | 608 | 84.8 | 9.2 | 5.6 | 0.3 |
| **West zone** | **3002** | **49.7** | **24.5** | **15.0** | **10.9** |
| Dadra & Nagar Haveli | 601 | 51.1 | 31.0 | 14.2 | 3.7 |
| Daman & Diu | 600 | 38.3 | 35.9 | 20.4 | 5.4 |
| Goa | 601 | 53.6 | 37.0 | 2.3 | 7.0 |
| Gujarat | 600 | 54.8 | 30.7 | 12.4 | 2.1 |
| Maharashtra | 600 | 46.5 | 20.4 | 16.8 | 16.3 |
| **South zone** | **4812** | **42.7** | **37.7** | **10.1** | **9.5** |
| Andaman & Nicobar Island | 600 | 48.2 | 47.4 | 4.2 | 0.1 |
| Andhra Pradesh | 600 | 56.9 | 25.2 | 12.7 | 5.2 |
| Karnataka | 601 | 34.4 | 30.7 | 5.6 | 29.2 |
| Kerala | 601 | 34.8 | 63.4 | 1.6 | 0.2 |
| Lakshadweep | 600 | 76.8 | 18.3 | 0.7 | 4.2 |
| Puducherry | 600 | 38.2 | 54.8 | 6.7 | 0.2 |
| Tamil Nadu | 610 | 46.4 | 42.5 | 11.1 | - |
| Telangana | 600 | 42.4 | 34.7 | 21.6 | 1.3 |

## TABLE 3.14: ACCESS TO BANK ACCOUNT

| Per cent distribution of access to bank account across all India, type of residence, wealth quintile, states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | Unweighted N | Male member | Female member | Both male and female members | No | Don't |
| Unweighted N | 21406 | 4558 | 1706 | 13362 | 1157 | 623 |
| All India<br>Type of residence | 21406 | 21.3 | 9.6 | 55.0 | 7.2 | 6.8 |
| Rural | 13095 | 21.2 | 10.4 | 54.1 | 7.7 | 6.5 |
| Urban | 8311 | 21.5 | 8.3 | 56.4 | 6.5 | 7.4 |
| **Wealth quintile** | | | | | | |
| Lowest | 2692 | 16.3 | 17.1 | 47.1 | 10.6 | 9.0 |
| Second | 3657 | 23.7 | 12.3 | 48.7 | 8.1 | 7.2 |
| Middle | 4271 | 23.5 | 8.6 | 50.9 | 7.8 | 9.2 |
| Fourth | 5112 | 21.3 | 6.3 | 60.0 | 6.1 | 6.3 |
| Highest | 5674 | 21.8 | 4.1 | 67.8 | 3.7 | 2.6 |
| **North zone** | **3971** | **25.3** | **3.8** | **57.3** | **11.4** | **2.2** |
| Chandigarh | 600 | 16.8 | 5.6 | 70.0 | 6.5 | 1.1 |
| Delhi | 611 | 22.2 | 6.3 | 61.1 | 9.5 | 0.8 |
| Haryana | 601 | 23.5 | 8.2 | 54.4 | 9.5 | 4.4 |

| Per cent distribution of access to bank account across all India, type of residence, wealth quintile, states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | Unweighted N | Male member | Female member | Both male and female members | No | Don't know |
| Himachal Pradesh | 600 | 20.8 | 4.8 | 68.2 | 4.9 | 1.3 |
| Jammu & Kashmir | 355 | 48.1 | 3.8 | 32.3 | 5.1 | 10.6 |
| Punjab | 600 | 22.9 | 1.9 | 72.2 | 3.1 | - |
| Rajasthan | 604 | 24.5 | 2.3 | 54.1 | 17.8 | 1.3 |
| **Central zone** | **2403** | **17.6** | **8.8** | **63.0** | **9.6** | **1.1** |
| Chhattisgarh | 600 | 43.0 | 6.2 | 33.2 | 12.7 | 4.9 |
| Madhya Pradesh | 603 | 10.9 | 11.5 | 72.9 | 4.3 | 0.5 |
| Uttarakhand | 600 | 6.3 | 1.0 | 88.7 | 4.0 | - |
| Uttar Pradesh | 600 | 16.4 | 8.5 | 62.8 | 11.7 | 0.6 |
| **East zone** | **2401** | **14.0** | **17.4** | **65.2** | **3.3** | **0.2** |
| Bihar | 600 | 4.9 | 21.5 | 70.9 | 2.7 | - |
| Jharkhand | 600 | 19.1 | 17.1 | 59.2 | 4.3 | 0.4 |
| Odisha | 601 | 4.9 | 21.1 | 71.8 | 2.2 | - |
| West Bengal | 600 | 25.7 | 11.5 | 58.4 | 4.0 | 0.4 |
| **North-East zone** | **4817** | **15.2** | **10.8** | **69.5** | **4.5** | **-** |
| Arunachal Pradesh | 603 | 27.2 | 3.7 | 66.9 | 2.0 | 0.2 |
| Assam | 601 | 14.1 | 12.5 | 69.4 | 4.0 | - |
| Manipur | 600 | 9.4 | 6.9 | 82.1 | 1.4 | 0.2 |
| Meghalaya | 600 | 8.0 | 10.0 | 80.3 | 1.6 | - |
| Mizoram | 605 | 4.0 | 8.5 | 86.9 | 0.6 | - |
| Nagaland | 600 | 48.3 | 2.4 | 34.4 | 14.9 | - |
| Sikkim | 600 | 23.7 | 3.0 | 67.6 | 5.7 | - |
| Tripura | 608 | 15.0 | 9.6 | 66.9 | 8.3 | 0.3 |
| **West zone** | **3002** | **42.9** | **2.8** | **23.3** | **9.3** | **21.6** |
| Dadra & Nagar Haveli | 601 | 31.8 | 3.7 | 58.6 | 5.9 | - |
| Daman & Diu | 600 | 25.2 | 14.3 | 55.5 | 5.1 | - |
| Goa | 601 | 17.3 | 3.2 | 67.5 | 6.0 | 5.9 |
| Gujarat | 600 | 28.4 | 1.7 | 52.1 | 12.0 | 5.9 |
| Maharashtra | 600 | 52.3 | 3.4 | 4.9 | 7.8 | 31.7 |
| **South zone** | **4812** | **15.0** | **11.6** | **57.1** | **5.1** | **11.2** |
| Andaman & Nicobar Island | 600 | 13.1 | 1.3 | 85.3 | - | 0.3 |
| Andhra Pradesh | 600 | 7.1 | 6.5 | 76.7 | 6.8 | 3.0 |
| Karnataka | 601 | 16.9 | 1.1 | 43.5 | 2.2 | 36.3 |
| Kerala | 601 | 39.7 | 8.0 | 48.9 | 2.6 | 0.7 |
| Lakshadweep | 600 | 41.0 | 8.5 | 49.1 | 0.6 | 0.8 |
| Puducherry | 600 | 18.9 | 7.8 | 73.2 | 0.2 | - |
| Tamil Nadu | 610 | 10.4 | 32.6 | 53.0 | 4.0 | - |
| Telangana | 600 | 8.2 | 2.7 | 74.9 | 13.6 | 0.6 |

CHAPTER - 4

# COVERAGE OF IODISED SALT AT THE HOUSEHOLD LEVEL

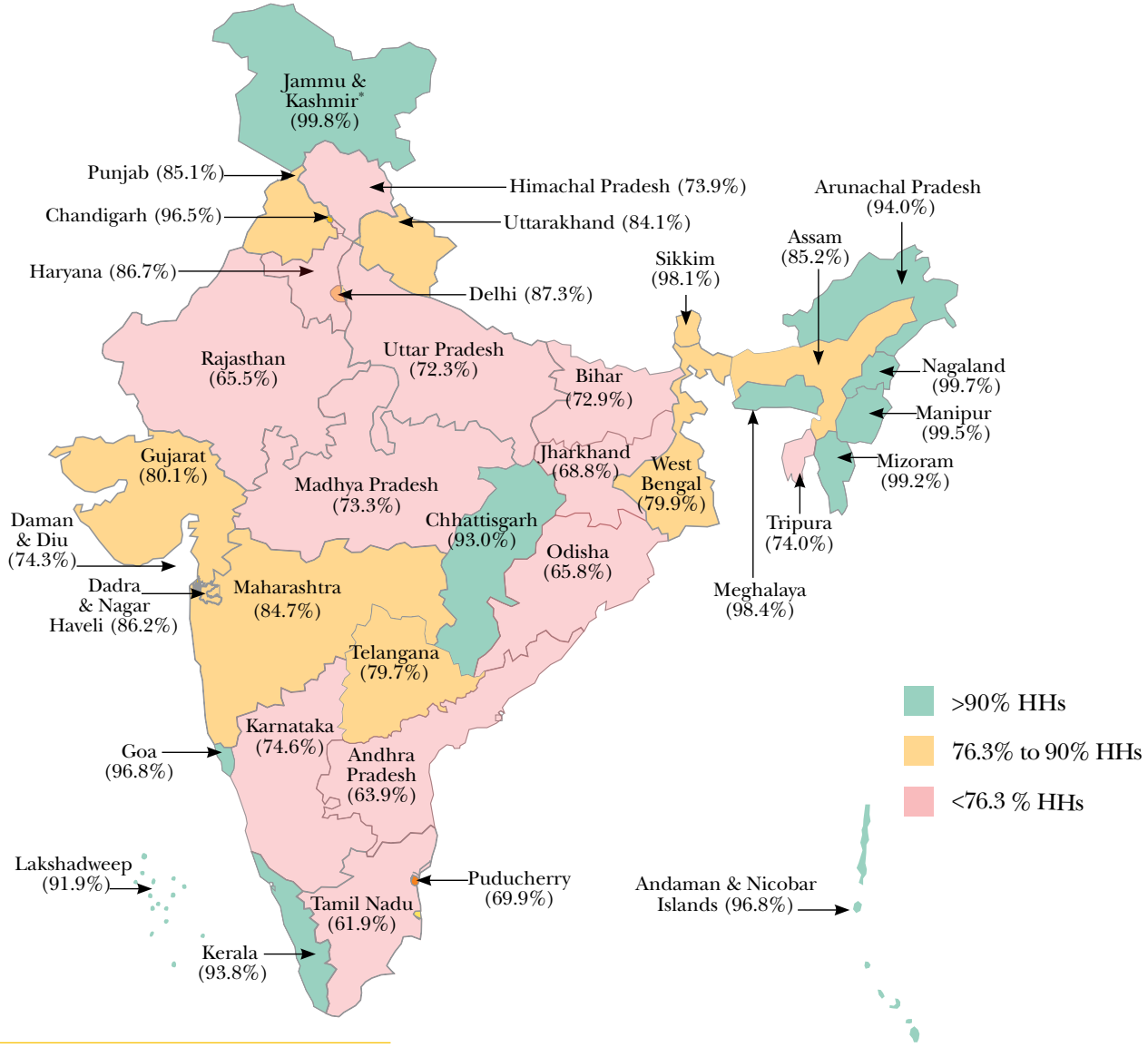
**This chapter focuses on the household coverage of iodised salt estimated using iodometric titration method. The household coverage of iodised salt has been presented by administrative units, places of residence and wealth quintiles. This chapter also presents insights on the use of various type of salt (Refined, crushed and crystal) used among the surveyed households.**

## Household coverage of iodised salt tested through iodometric titration

The national household coverage of iodised salt (with ≥15 ppm* iodine) was 76.3 per cent (95% Confidence Interval (CI): 74.1%, 78.5%), 16.1 per cent households had salt with some iodine (>5ppm to 15 ppm) and 7.6 per cent of the households had salt with no iodine (5ppm). Salt iodised with any iodine (≥5 ppm) was found to be 92.4 Per cent. The highest coverage of iodised salt (≥15 ppm) was observed in Jammu & Kashmir (99.8%), while the lowest coverage was observed in Tamil Nadu (61.9%).

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

## Figure 4.1: Household coverage of iodised salt (≥15 ppm) by state/UT (%)




** 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.*

As presented in figure 4.2, the national household coverage of iodised salt with iodine content 15 to 30 ppm** was found to be 41.4% (95% CI : 39.4%, 43.4%) with the lowest coverage of iodised salt (15 to 30 ppm) in Jammu & Kashmir (2.3%), and Goa (66.3%) had the highest coverage of iodised salt with iodine content of 15 to 30 ppm. Slightly less than a quarter (23.7%) of the households (<15 ppm) were using either non-iodised salt or inadequately iodised salt.

In urban areas, 82.9 per cent of the households were using iodised salt (≥ 15 ppm) as compared to only 72.2 per cent of households in rural areas; however, coverage of households with cooking salt containing iodine level of 15 - 30 ppm was found to be similar in both rural and urban areas (42.5% and 39.6% respectively).

**Figure 4.2: Household coverage of iodised salt at national level (%) [16]**

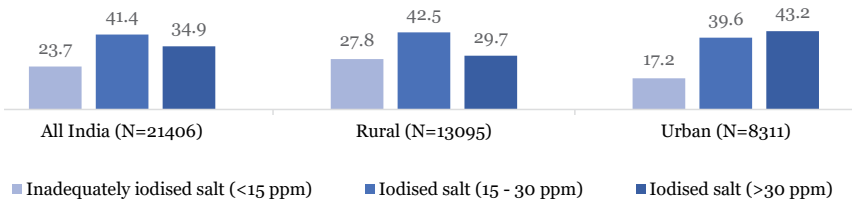



**Figure 4.3: Household-level coverage of iodised salt across zones (%)**

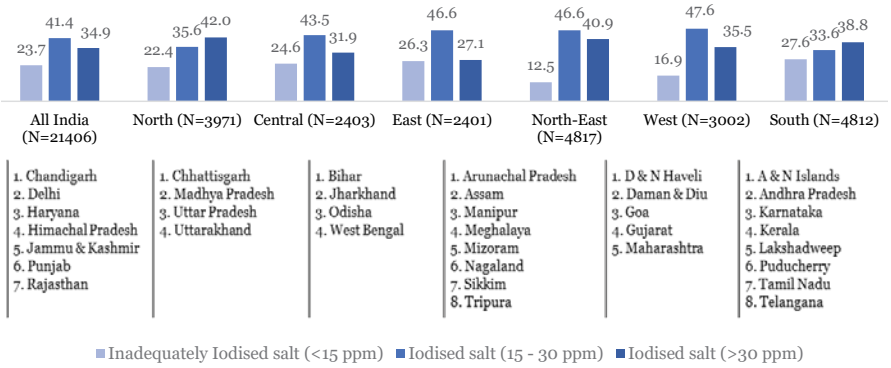
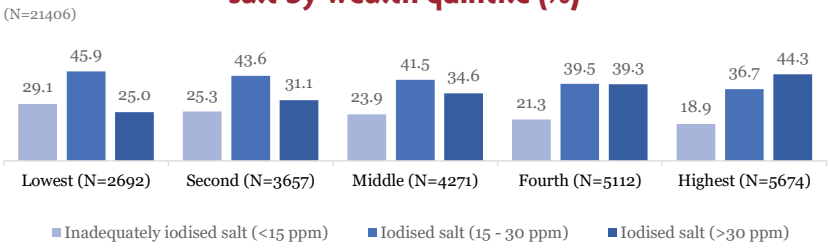


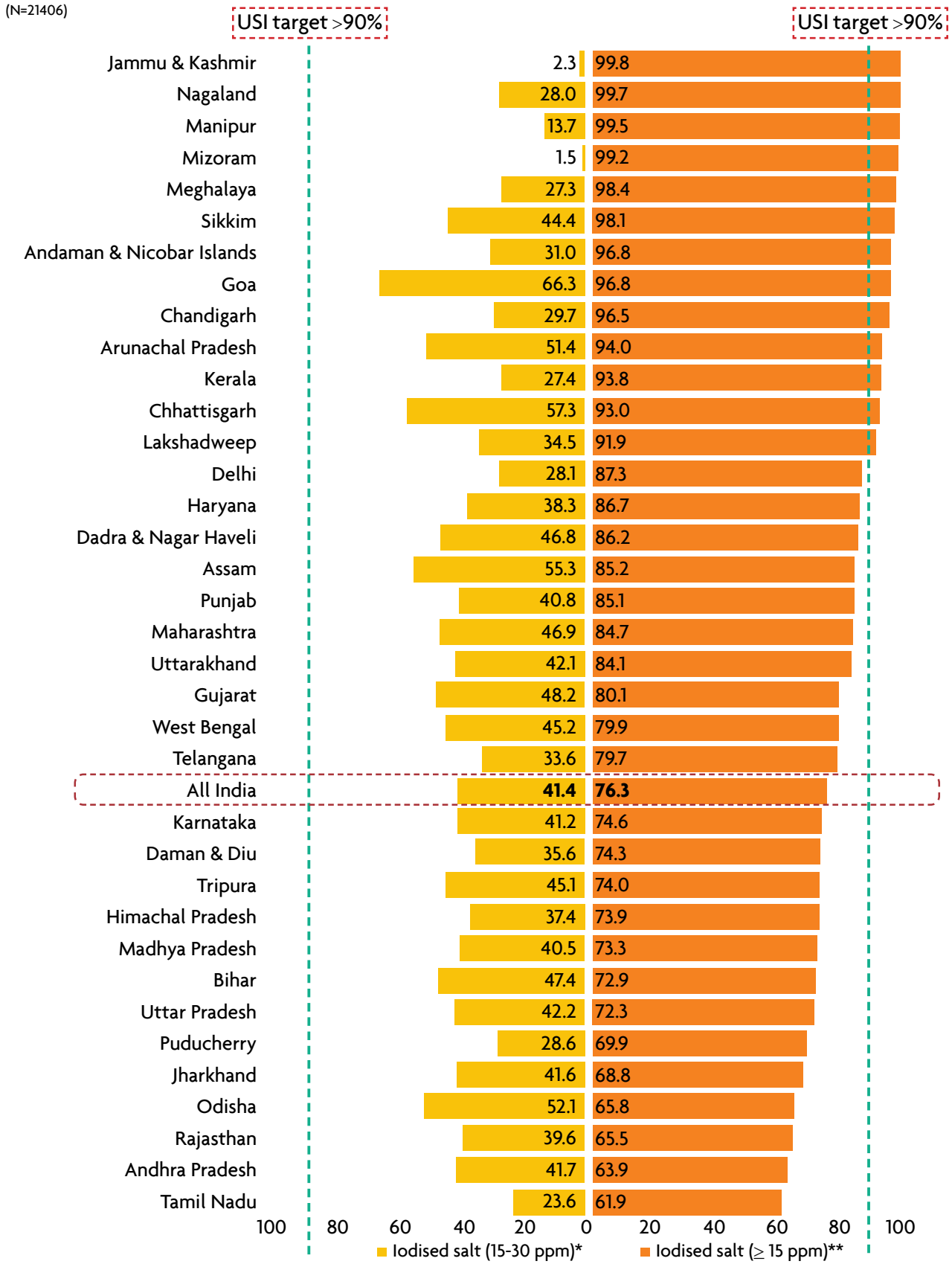

**Figure 4.4: Household coverage of iodised salt by wealth quintile (%)**




*** 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.*

16. *N is based on unweighted cases and the results are weighted*

## Figure 4.5: Household coverage of iodised salt at national and state/ UT level (%)




*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 the 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*

## TABLE 4.1: HOUSEHOLD COVERAGE OF IODISED SALT IN % (95% CONFIDENCE INTERVALS IN PARENTHESES) IN INDIA AND STATES /UTS FOR SALT IODISED AT 15 TO 30 PPM AND ≥15 PPM

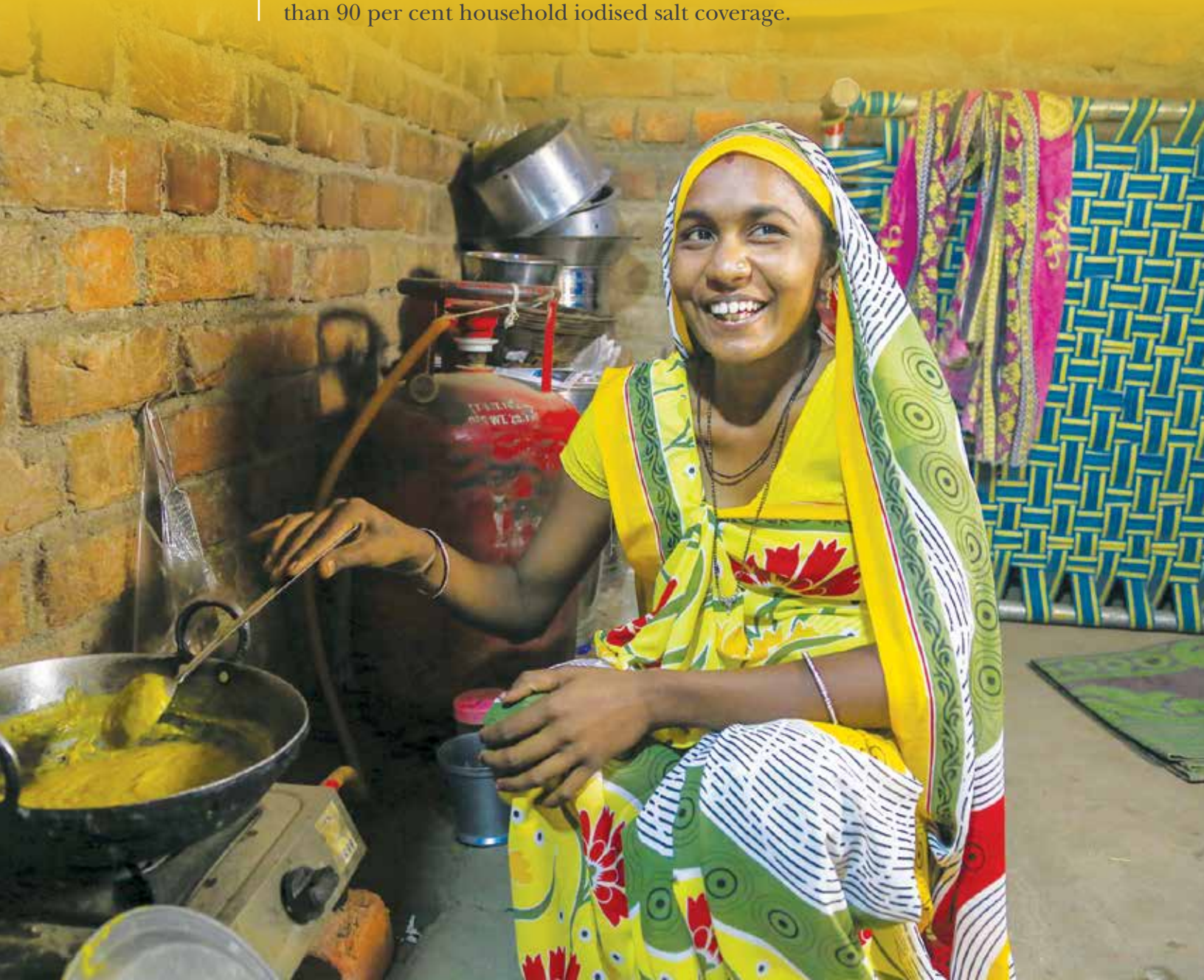
| India/ States/ UTs | Iodised salt at 15 to 30 ppm % (95% CI : Lower limit, Upper limit) | Iodised salt at ≥15 ppm % (95% CI : Lower limit, Upper limit) |
|---|---|---|
| All India (N=21,406) | 41.4 (39.4, 43.4) | 76.3 (74.1, 78.5) |
| Andaman & Nicobar Islands (N=600) | 31.0 (22.2, 41.4) | 96.8 (93.8, 98.4) |
| Andhra Pradesh (N=600) | 41.7 (33.6, 50.3) | 63.9 (51.5, 74.6) |
| Arunachal Pradesh (603) | 51.4 (39.7, 62.9) | 94.0 (90.4, 96.3) |
| Assam (N=601) | 55.3 (52.3, 58.3) | 85.2 (80.4, 89.0) |
| Bihar (N=600) | 47.4 (38.6, 56.4) | 72.9 (64.0, 80.2) |
| Chandigarh (N=600) | 29.7 (24.8, 35.2) | 96.5 (94.4, 97.8) |
| Chhattisgarh (N=600) | 57.3 (52.9, 61.7) | 93.0 (89.8, 95.2) |
| Dadra & Nagar Haveli (N=601) | 46.8 (40.0, 53.6) | 86.2 (79.4, 91.0) |
| Daman & Diu (N=600) | 35.6 (27.1, 45.2) | 74.3 (66.7, 80.6) |
| Delhi (N=611) | 28.1 (21.2, 36.3) | 87.3 (76.5, 93.5) |
| Goa (N=601) | 66.3 (54.5, 76.4) | 96.8 (93.6, 98.4) |
| Gujarat (N=600) | 48.2 (41.0, 55.4) | 80.1 (72.3, 86.2) |
| Haryana (N= 601) | 38.3 (31.7, 45.4) | 86.7 (82.8, 89.9) |
| Himachal Pradesh (N=600) | 37.4 (28.6, 47.2) | 73.9 (64.0, 81.8) |
| Jammu & Kashmir (N=355) | 2.3 (0.7, 7.2) | 99.8 (98.7, 100.0) |
| Jharkhand (N=600) | 41.6 (33.3, 50.4) | 68.8 (57.5, 78.3) |
| Karnataka (N=601) | 41.2 (35.1, 47.6) | 74.6 (65.6, 81.9) |
| Kerala (N=601) | 27.4 (21.1, 34.6) | 93.8 (89.4, 96.4) |
| Lakshadweep (N=600) | 34.5 (26.8, 43.0) | 91.9 (88.0, 94.7) |
| Madhya Pradesh (N=603) | 40.5 (35.0, 46.3) | 73.3 (65.2, 80.0) |
| Maharashtra (N=600) | 46.9 (39.1, 54.9) | 84.7 (78.2, 89.6) |
| Manipur (N=600) | 13.7 (9.9, 18.5) | 99.5 (98.6, 99.8) |
| Meghalaya (N=600) | 27.3 (16.5, 41.7) | 98.4 (96.2, 99.4) |
| Mizoram (N=605) | 1.5 (0.6, 4.1) | 99.2 (97.5, 99.7) |
| Nagaland (N=600) | 28.0 (18.2, 40.5) | 99.7 (98.0, 100.0) |
| Odisha (N=601) | 52.1 (40.1, 63.8) | 65.8 (52.1, 77.3) |
| Puducherry (N=600) | 28.6 (23.0, 34.8) | 69.9 (63.7, 75.5) |
| Punjab (N=600) | 40.8 (33.5, 48.6) | 85.1 (76.2, 91.1) |
| Rajasthan (N=604) | 39.6 (34.2, 45.3) | 65.5 (55.2, 74.4) |
| Sikkim (N=600) | 44.4 (35.1, 54.0) | 98.1 (96.4, 99.0) |
| Tamil Nadu (N=610) | 23.6 (17.2, 31.3) | 61.9 (49.0, 73.3) |
| Telangana (N=600) | 33.6 (26.3, 41.7) | 79.7 (68.7, 87.6) |
| Tripura (N=608) | 45.1 (40.1, 50.3) | 74.0 (67.4, 79.7) |
| Uttar Pradesh (N=600) | 42.2 (37.5, 47.0) | 72.3 (64.6, 78.9) |
| Uttarakhand (N=600) | 42.1 (29.3, 56.1) | 84.1 (75.1, 90.3) |
| West Bengal (N=600) | 45.2 (37.1, 53.5) | 79.9 (73.4, 85.2) |

The survey result shows that the north east zone (87.5%) and west zone (83.1%) had highest iodised salt (≥ 15 ppm) coverage, followed by north (77.6%) and central zone (75.4%). However, considering coverage of iodised salt with iodine content 15-30 ppm, west zone (47.6%) along with east (46.6%) and north-east zones (46.6%) were ahead of the other three zones.

Among all the zones, the north (42.0%) and south zones (38.8%), had the highest percentage of households which reported using salt with > 30 ppm iodine content.

With regards to the wealth quintiles, the coverage of iodised salt steadily increased with the ascending wealth quintiles, yet if only iodine concentration (15 - 30 ppm) was looked at, the percentage showed a mild decline with ascending wealth quintiles. It indicates that a higher percentage of economically well-off households used salt containing iodine content of >30 ppm (Figure 4.4).

Overall, it was found that, 13 states/UTs have achieved the USI target of greater than 90 per cent household iodised salt coverage.



# Type of cooking salt used in the household

The type of cooking salt samples was categorised into refined, crushed, and crystal based on physical observations carried out in the ICCIDD laboratory. It was found that the majority (82.1%) of the households were using refined salt, followed by crystal salt (12.7%) and crushed (5.2%).

The pattern was similar across rural and urban areas; however, the usage of crystal salt was found to be slightly higher in urban areas (15.0%) against that in rural areas (11.2%). On the contrary, the use of refined salt was found to be slightly higher in rural areas (83.1%) as compared to urban areas (80.4%) (Figure 4.6).

Across all the zones, the use of refined salt was high except in the south zone where usage was found to be lower compared to other zones as shown in Figure 4.7. In the east and north-east zone use of crushed salt (10.8% and 14.2% respectively) was found to be higher than other zones and use of crystal salt was found to be higher in south zone compare to other zones. Nearly half of the households in the south zone (47.3%) reported to have used crystal salt (Figure 4.7).

No major difference was observed in the type of cooking salt used across the wealth quintiles. Usage of crushed salt negligible across all economic strata (Figure 4.8).

**Figure 4.6: Type of salt available at the household level (%)**

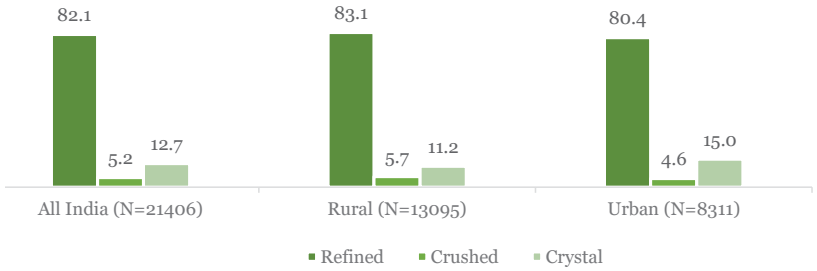



**Figure 4.7: Type of salt available at the household level across zones (%)**

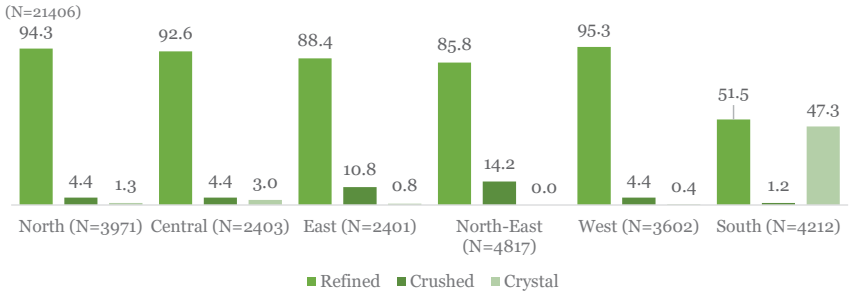



**Figure 4.8: Type of salt available at household level by wealth quintile (%)**

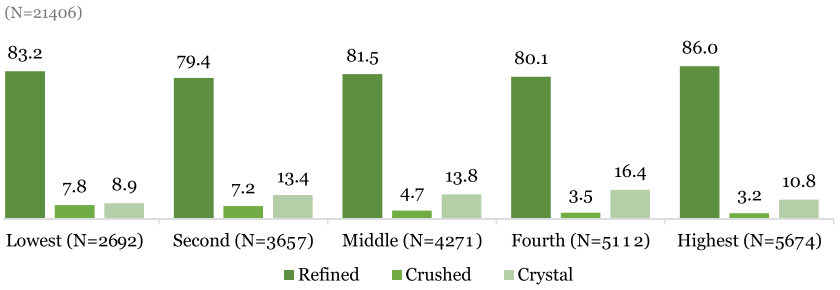
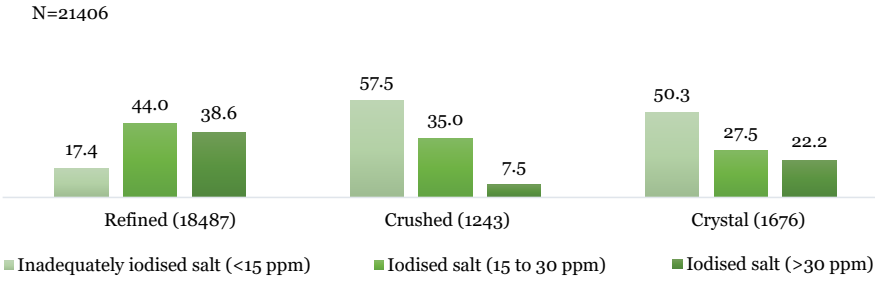



**Figure 4.9: Iodisation level as per the type of salt (%)**



## Iodisation level of different types of salt

It was observed that iodine levels for 15-30 ppm and >30ppm were similar in refined salt 44 per cent and 38.7 per cent respectively. Disparity in iodine levels for categories 15-30 ppm and >30ppm were observed for crushed and crystal salt with nearly one third samples from both categories . Almost half of the samples of crushed (57.5%) and crystal salt (50.3%) was inadequately iodized (<15ppm) compared to only 17.4 per cent of the refined salt (Figure 4.9).

## Summary

The national household coverage of iodised salt was found to be 76.3 per cent with ≥15 ppm iodine. In all, 16.1 per cent household had some iodine (>5ppm to < 15 ppm) and 7.6 per cent of the households had salt with no iodine (< 5 ppm). More than two-fifth (41.4%) households were using iodised salt i.e. with iodine level of 15 to 30 ppm.

The use of iodised salt seems to be associated positively with economic status. However, the usage of iodised salt (15 - 30 ppm) was highest in the lowest quintile and showed a mild decline with increasing economic status.

As observed, refined salt constituted 82 per cent of the salt samples collected at the national level, with 82.6 per cent of these samples having ≥15 ppm of iodine. The study indicates that refined salt is better iodised as compared to crystal salt (49.7%) and crushed salt (42.5%). The availability of refined salts was found to be prevalent throughout India except in the south zone, where usage of both refined and crystal salts was almost equal. Crushed salt usage was found to be relatively higher in the north-east and east zones.

# Annexures for Chapter 4

## TABLE 4.1: TYPE OF SALT

| Per cent distribution of type of salt across coverage of iodised salt in all India and states across all zones | | | | | |
|---|---|---|---|---|---|
| | **Salt type** | **Unweighted N** | **Refined** | **Crushed** | **Crystal** |
| Unweighted N | | 21406 | 18487 | 1243 | 1676 |
| **All India** | **Non-iodised salt (<15 ppm)** | **3665** | **17.4** | **57.5** | **50.3** |
| | **Iodised salt (15- 30 ppm)** | **8174** | **44.0** | **35.0** | **27.5** |
| | **Iodised salt (≥30 ppm)** | **9567** | **38.7** | **7.5** | **22.2** |
| **North zone** | **Non-iodised salt (<15 ppm)** | **607** | **19.7** | **58.3** | **100.0** |
| | **Iodised salt (15- 30 ppm)** | **1332** | **36.2** | **33.7** | **-** |
| | **Iodised salt (≥30 ppm)** | **2032** | **44.1** | **8.0** | **-** |
| Chandigarh | Non-iodised salt (<15 ppm) | 23 | 3.5 | - | - |
| | Iodised salt (15- 30 ppm) | 175 | 29.7 | - | - |
| | Iodised salt (≥30 ppm) | 402 | 66.8 | - | - |
| Delhi | Non-iodised salt (<15 ppm) | 59 | 11.0 | 100 | - |
| | Iodised salt (15- 30 ppm) | 191 | 28.7 | - | - |
| | Iodised salt (≥30 ppm) | 361 | 60.3 | - | - |
| Haryana | Non-iodised salt (<15 ppm) | 81 | 11.2 | 26.5 | - |
| | Iodised salt (15- 30 ppm) | 230 | 34.9 | 59.7 | - |
| | Iodised salt (≥30 ppm) | 290 | 53.9 | 13.8 | - |
| Himachal Pradesh | Non-iodised salt (<15 ppm) | 150 | 26.1 | - | - |
| | Iodised salt (15- 30 ppm) | 234 | 37.4 | - | - |
| | Iodised salt (≥30 ppm) | 216 | 36.5 | - | - |
| Jammu & Kashmir | Non-iodised salt (<15 ppm) | 1 | 0.2 | - | - |
| | Iodised salt (15- 30 ppm) | 12 | 2.3 | - | - |
| | Iodised salt (≥30 ppm) | 342 | 97.5 | - | - |
| Punjab | Non-iodised salt (<15 ppm) | 76 | 14.9 | - | - |
| | Iodised salt (15- 30 ppm) | 260 | 40.8 | - | - |
| | Iodised salt (≥30 ppm) | 264 | 44.3 | - | - |
| Rajasthan | Non-iodised salt (<15 ppm) | 217 | 29.8 | 87.9 | 100 |
| | Iodised salt (15- 30 ppm) | 230 | 42.3 | 9.6 | - |
| | Iodised salt (≥30 ppm) | 157 | 27.9 | 2.5 | - |
| **Central zone** | **Non-iodised salt (<15 ppm)** | **486** | **20.0** | **76.1** | **90.9** |
| | **Iodised salt (15- 30 ppm)** | **1089** | **46.0** | **19.1** | **3.4** |
| | **Iodised salt (≥30 ppm)** | **828** | **34.0** | **4.8** | **5.7** |
| Chhattisgarh | Non-iodised salt (<15 ppm) | 46 | 6.6 | 31.3 | - |
| | Iodised salt (15- 30 ppm) | 351 | 57.8 | 29.7 | - |
| | Iodised salt (≥30 ppm) | 203 | 35.6 | 39.0 | - |

| Per cent distribution of type of salt across coverage of iodised salt in all India and states across all zones | | | | | |
|---|---|---|---|---|---|
| | Salt type | Unweighted N | Refined | Crushed | Crystal |
| Madhya Pradesh | Non-iodised salt (<15 ppm) | 170 | 19.1 | 64.3 | 82.3 |
| | Iodised salt (15- 30 ppm) | 244 | 43.8 | 30.6 | 6.4 |
| | Iodised salt (≥30 ppm) | 189 | 37.0 | 5.1 | 11.3 |
| Uttarakhand | Non-iodised salt (<15 ppm) | 113 | 13.7 | 49.2 | 89.1 |
| | Iodised salt (15- 30 ppm) | 239 | 42.5 | 39.6 | 10.9 |
| | Iodised salt (≥30 ppm) | 248 | 43.8 | 11.2 | - |
| Uttar Pradesh | Non-iodised salt (<15 ppm) | 157 | 23.5 | 100 | 100 |
| | Iodised salt (15- 30 ppm) | 255 | 44.6 | - | - |
| | Iodised salt (≥30 ppm) | 188 | 31.9 | - | - |
| **East zone** | **Non-iodised salt (<15 ppm)** | **720** | **22.5** | **53.0** | **96.1** |
| | **Iodised salt (15- 30 ppm)** | **1091** | **48.0** | **38.4** | **3.9** |
| | **Iodised salt (≥30 ppm)** | **590** | **29.5** | **8.6** | **-** |
| Bihar | Non-iodised salt (<15 ppm) | 166 | 24.6 | 59.7 | - |
| | Iodised salt (15- 30 ppm) | 281 | 48.9 | 27.7 | - |
| | Iodised salt (≥30 ppm) | 153 | 26.5 | 12.6 | - |
| Jharkhand | Non-iodised salt (<15 ppm) | 192 | 25.1 | 82.6 | - |
| | Iodised salt (15- 30 ppm) | 243 | 44.6 | 15.4 | - |
| | Iodised salt (≥30 ppm) | 165 | 30.2 | 2.0 | - |
| Odisha | Non-iodised salt (<15 ppm) | 237 | 26.8 | 64.6 | 96.1 |
| | Iodised salt (15- 30 ppm) | 286 | 57.9 | 27.6 | 3.9 |
| | Iodised salt (≥30 ppm) | 78 | 15.3 | 7.8 | - |
| West Bengal | Non-iodised salt (<15 ppm) | 125 | 17.0 | 37.9 | - |
| | Iodised salt (15- 30 ppm) | 281 | 43.7 | 53.6 | - |
| | Iodised salt (≥30 ppm) | 194 | 39.3 | 8.5 | - |
| **North-East zone** | **Non-iodised salt (<15 ppm)** | **321** | **7.2** | **44.7** | **-** |
| | **Iodised salt (15- 30 ppm)** | **1609** | **47.4** | **41.6** | **-** |
| | **Iodised salt (≥30 ppm)** | **2887** | **45.4** | **13.7** | **-** |
| Arunachal Pradesh | Non-iodised salt (<15 ppm) | 41 | 5.2 | 36.0 | - |
| | Iodised salt (15- 30 ppm) | 318 | 51.4 | 50.0 | - |
| | Iodised salt (≥30 ppm) | 244 | 43.3 | 14.0 | - |
| Assam | Non-iodised salt (<15 ppm) | 88 | 9.8 | 65.3 | - |
| | Iodised salt (15- 30 ppm) | 331 | 57.8 | 30.7 | - |
| | Iodised salt (≥30 ppm) | 182 | 32.4 | 4.0 | - |
| Manipur | Non-iodised salt (<15 ppm) | 3 | 0.4 | - | - |
| | Iodised salt (15- 30 ppm) | 86 | 13.7 | - | - |
| | Iodised salt (≥30 ppm) | 511 | 85.9 | - | - |
| Meghalaya | Non-iodised salt (<15 ppm) | 9 | 1.6 | - | - |
| | Iodised salt (15- 30 ppm) | 154 | 27.3 | - | - |
| | Iodised salt (≥30 ppm) | 437 | 71.1 | - | - |

| Per cent distribution of type of salt across coverage of iodised salt in all India and states across all zones | | | | | |
|---|---|---|---|---|---|
| | Salt type | Unweighted N | Refined | Crushed | Crystal |
| Mizoram | Non-iodised salt (<15 ppm) | 5 | 0.8 | - | - |
| | Iodised salt (15- 30 ppm) | 11 | 1.5 | - | - |
| | Iodised salt (≥30 ppm) | 589 | 97.7 | - | - |
| Nagaland | Non-iodised salt (<15 ppm) | 1 | 0.3 | - | - |
| | Iodised salt (15- 30 ppm) | 177 | 28.0 | - | - |
| | Iodised salt (≥30 ppm) | 422 | 71.7 | - | - |
| Sikkim | Non-iodised salt (<15 ppm) | 11 | 1.6 | 58.2 | - |
| | Iodised salt (15- 30 ppm) | 260 | 44.6 | - | - |
| | Iodised salt (≥30 ppm) | 329 | 53.8 | 41.8 | - |
| Tripura | Non-iodised salt (<15 ppm) | 163 | 4.8 | 29.9 | - |
| | Iodised salt (15- 30 ppm) | 272 | 22.4 | 49.4 | - |
| | Iodised salt (≥30 ppm) | 173 | 72.8 | 20.7 | - |
| **West zone** | **Non-iodised salt (<15 ppm)** | **497** | **15.0** | **49.3** | **99.3** |
| | **Iodised salt (15- 30 ppm)** | **1455** | **47.8** | **44.7** | **0.4** |
| | **Iodised salt (≥30 ppm)** | **1050** | **37.1** | **6.0** | **0.3** |
| Dadra & Nagar Haveli | Non-iodised salt (<15 ppm) | 95 | 11.5 | - | 82.7 |
| | Iodised salt (15- 30 ppm) | 271 | 47.9 | - | 12.6 |
| | Iodised salt (≥30 ppm) | 235 | 40.6 | - | 4.7 |
| Daman & Diu | Non-iodised salt (<15 ppm) | 153 | 17.2 | 55.9 | 84.0 |
| | Iodised salt (15- 30 ppm) | 207 | 39.8 | 21.5 | 6.6 |
| | Iodised salt (≥30 ppm) | 240 | 43.0 | 22.6 | 9.4 |
| Goa | Non-iodised salt (<15 ppm) | 23 | 3.2 | - | - |
| | Iodised salt (15- 30 ppm) | 407 | 66.3 | - | - |
| | Iodised salt (≥30 ppm) | 171 | 30.5 | - | - |
| Gujarat | Non-iodised salt (<15 ppm) | 123 | 19.6 | 30.1 | - |
| | Iodised salt (15- 30 ppm) | 296 | 47.7 | 63.0 | - |
| | Iodised salt (≥30 ppm) | 181 | 32.7 | 6.9 | - |
| Maharashtra | Non-iodised salt (<15 ppm) | 103 | 12.4 | 55.7 | 100 |
| | Iodised salt (15- 30 ppm) | 274 | 47.7 | 38.7 | - |
| | Iodised salt (≥30 ppm) | 223 | 39.9 | 5.6 | - |
| **South zone** | **Non-iodised salt (<15 ppm)** | **1034** | **9.2** | **71.1** | **46.4** |
| | **Iodised salt (15- 30 ppm)** | **1598** | **37.3** | **28.9** | **29.8** |
| | **Iodised salt (≥30 ppm)** | **2180** | **53.5** | **-** | **23.8** |
| Andaman & Nicobar Island | Non-iodised salt (<15 ppm) | 21 | 3.2 | - | - |
| | Iodised salt (15- 30 ppm) | 192 | 31.0 | - | - |
| | Iodised salt (≥30 ppm) | 387 | 65.8 | - | - |
| Andhra Pradesh | Non-iodised salt (<15 ppm) | 211 | 15.0 | 21.9 | 80.9 |
| | Iodised salt (15- 30 ppm) | 250 | 54.7 | 78.1 | 13.3 |
| | Iodised salt (≥30 ppm) | 139 | 30.3 | - | 5.8 |

| Per cent distribution of type of salt across coverage of iodised salt in all India and states across all zones | | | | | |
|---|---|---|---|---|---|
| | Salt type | Unweighted N | Refined | Crushed | Crystal |
| Karnataka | Non-iodised salt (<15 ppm) | 156 | 3.9 | - | 33.2 |
| | Iodised salt (15- 30 ppm) | 249 | 56.2 | - | 35.7 |
| | Iodised salt (≥30 ppm) | 196 | 39.9 | - | 31.1 |
| Kerala | Non-iodised salt (<15 ppm) | 41 | 3.8 | - | 18.8 |
| | Iodised salt (15- 30 ppm) | 177 | 26.5 | - | 31.5 |
| | Iodised salt (≥30 ppm) | 383 | 69.7 | - | 49.7 |
| Lakshadweep | Non-iodised salt (<15 ppm) | 48 | 6.5 | - | 38.7 |
| | Iodised salt (15- 30 ppm) | 219 | 34.6 | 100 | 29.9 |
| | Iodised salt (≥30 ppm) | 333 | 59.0 | - | 31.4 |
| Puducherry | Non-iodised salt (<15 ppm) | 180 | 6.2 | - | 59.4 |
| | Iodised salt (15- 30 ppm) | 171 | 31.9 | - | 24.5 |
| | Iodised salt (≥30 ppm) | 249 | 61.9 | - | 16.1 |
| Tamil Nadu | Non-iodised salt (<15 ppm) | 239 | 6.5 | - | 53.6 |
| | Iodised salt (15- 30 ppm) | 144 | 14.9 | - | 27.8 |
| | Iodised salt (≥30 ppm) | 227 | 78.6 | - | 18.6 |
| Telangana | Non-iodised salt (<15 ppm) | 138 | 13.7 | 78.3 | 74.3 |
| | Iodised salt (15- 30 ppm) | 196 | 34.9 | 21.7 | 22.2 |
| | Iodised salt (≥30 ppm) | 266 | 51.4 | - | 3.5 |

CHAPTER - 5

# IODINE STATUS AMONG WOMEN OF REPRODUCTIVE AGE (WRA)

**The iodine status among women of reproductive age (WRA) has been presented by the place of residence, zones and wealth quintile. Here women of reproductive age have been considered as a proxy for the population. They were found to have adequate iodine nutrition as per the WHO guideline for median urinary iodine concentration.**

The impact of salt iodisation programmes is best assessed through the measurement of Urinary Iodine Concentrations (UIC) in population, which is a well-accepted and easily measurable indicator for iodine status. Median UIC is considered a sensitive biomarker of current iodine intake and can reflect recent changes in the iodine status of the population. The median UIC is the preferred measure of central tendency along with percentiles to describe the distribution of data[17]. Iodised salt at the household level, continues to be the primary source of iodine, though there can be other sources of salt and iodine in food.

Based on studies of balance and excretion over a 24- hour period, a safe daily intake of iodine has been estimated to be between a minimum of 50 µg and a maximum of at least 1000 µg. A generally accepted desirable adult intake is 100-300 µg/day. At all intake levels, a proportionate amount of iodine is excreted in the urine, which is the biochemical basis for assessing iodine status.[18]

According to global recommendations, household-level data on salt iodine content and population-based median UIC data should be collected every five years[19]. Under the survey, women of reproductive age (15-49 years) was

17. *DeMaeyer, E. M, Lowenstein, F. W, Thilly,C. W & World Health Organization. (1979). The control of endemic goitre / E. M. DeMaeyer, F. W. Lowenstein, C. H. Thilly. World Health Organization. http://apps.who.int/iris/bitstream/10665/40085/1/9241560606_eng.pdf*
18. *https://apps.who.int/iris/bitstream/handle/10665/58693/WHO_NUT_94.4.pdf?sequence=1*
19. *World Health Organization. Assessment of iodine deficiency disorders and monitoring their elimination: a guide for programme managers. Geneva: WHO; 2007.*

taken as a proxy indicator group to the iodine status of the population. Further, considering the higher requirement of iodine amongst pregnant women (PW) and lactating women (LW), equal samples were collected from each of the three categories i.e. pregnant women (PW), lactating women (LW) (having an infant less than 6 months of age) and non-pregnant non-lactating women (NPNLW).

A total of 21,406 urine samples were collected across 29 states and 7 UTs, ensuring an equal distribution amongst all respondent group of women of reproductive age across all states/UTs, with a caveat that this survey was not powered for representing median UIC at the state level. All the urine samples collected were tested centrally at ICCIDD laboratory in Delhi. The median UIC among the women of reproductive age (15-49 years) is represented across place of residence, zones and wealth quintile in this chapter.

The WHO/ICCIDD/UNICEF[20] urinary iodine cut off value of median UIC was used to assess iodine nutrition among PW, LW and NPNLW are presented in the below table 5.1.

**TABLE 5.1: EPIDEMIOLOGIC CRITERIA FOR ASSESSING IODINE NUTRITION BASED ON MEDIAN UIC IN DIFFERENT TARGET GROUPS**

| Median urinary iodine (µg/L) | Iodine intake | Iodine status |
|---|---|---|
| **School-age children (6 years or older)[21]** | | |
| **<20** | Insufficient | Severe iodine deficiency |
| **20–49** | Insufficient | Moderate iodine deficiency |
| **50–99** | Insufficient | Mild iodine deficiency |
| **100–199** | Adequate | Adequate iodine nutrition |
| **200–299** | Above requirements | May pose a slight risk of more than adequate iodine intake in these populations |
| **≥300** | Excessive[22] | Risk of adverse health consequences (iodine-induced hyperthyroidism, autoimmune thyroid disease) |
| **Pregnant women** | | |
| **<150** | Insufficient | |
| **150–249** | Adequate | |
| **250–499** | Above requirements | |
| **≥500** | Excessive | |
| Lactating women and children aged less than 2 years | | |
| **<100** | Insufficient | |
| **≥100** | Adequate | |

*20. 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)*
*21. Applies to adults,but not to pregnant and lactating women.*
*22. The term "excessive"means in excess of amount required to prevent and control iodine deficiency.*

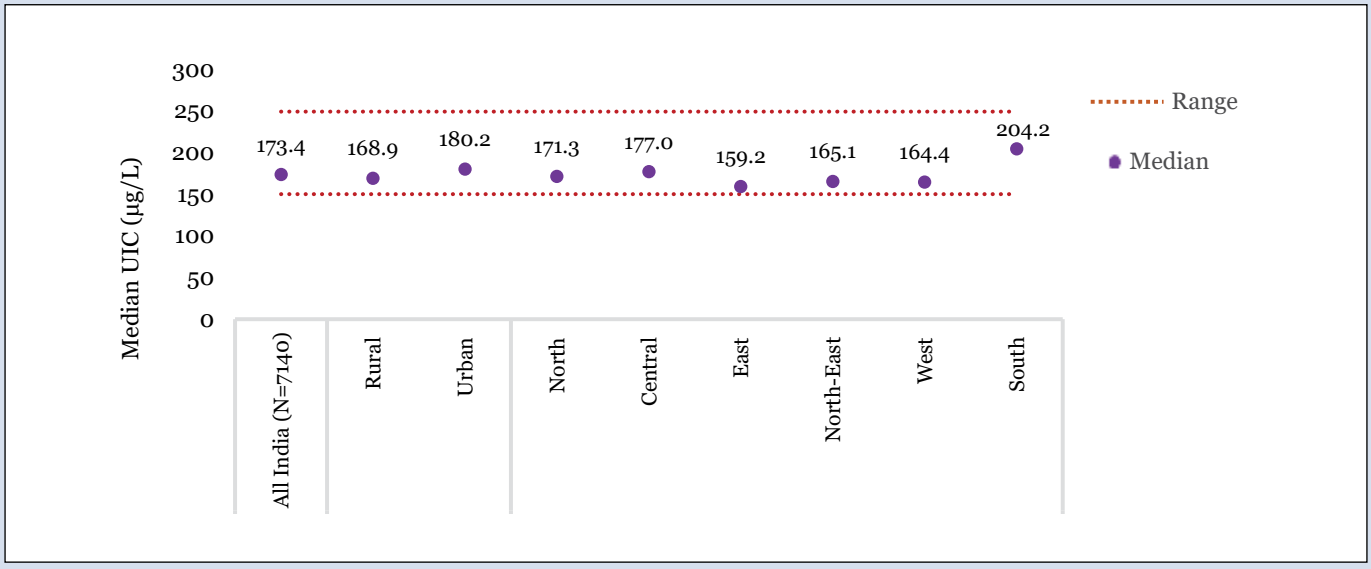
# Median urinary iodine concentration (UIC) (µg/L) among women of reproductive age (WRA)

The median UIC among women of reproductive age has been presented zone wise. The following graphical representations also contain the lower and upper cut-off values of adequate range for the respective target group, following the WHO standard as presented in table 5.1.

## Pregnant women

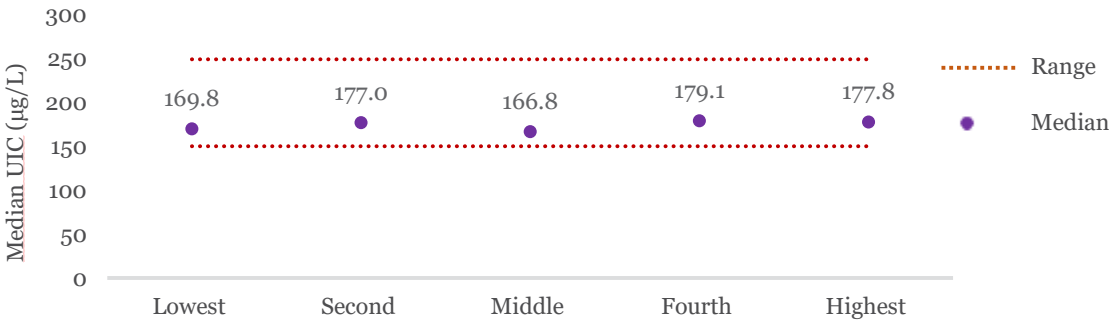
At the national level, the median UIC among pregnant women was found to be 173.4 µg/L, which is well within the adequate range (i.e. between 150-249 µg/L). The findings denote that pregnant women at national and zonal level were found to be adequate as per the epidemiologic criteria mentioned in table 5.1, have adequate iodine nutrition. Across rural and urban areas, the findings were similar with urban areas having slightly higher median UIC (180.2 µg/L) compared to rural areas (168.9 µg/L). At a zonal level, the median UIC was reported highest in the south zone (204.2 µg/L) while it was reported lowest in the east zone (159.2 µg/L).

**Figure 5.1: Median UIC (µg/L) among pregnant women by place of residence and zones**



There isn't any notable difference between the distributions of median UIC across the wealth quintile for pregnant women, indicating that the economic condition may not have any bearing on the iodine nutrition status. The median UIC was highest in the fourth quintile (179.1 µg/L) and least in the middle wealth quintile (166.8 µg/L).

**Figure 5.2: Median UIC (µg/L) among pregnant women across wealth quintiles**

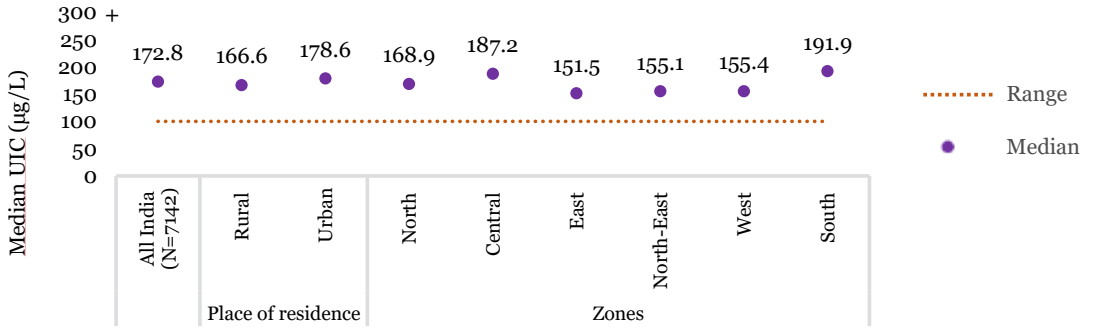



N: (7140)

## Lactating Women

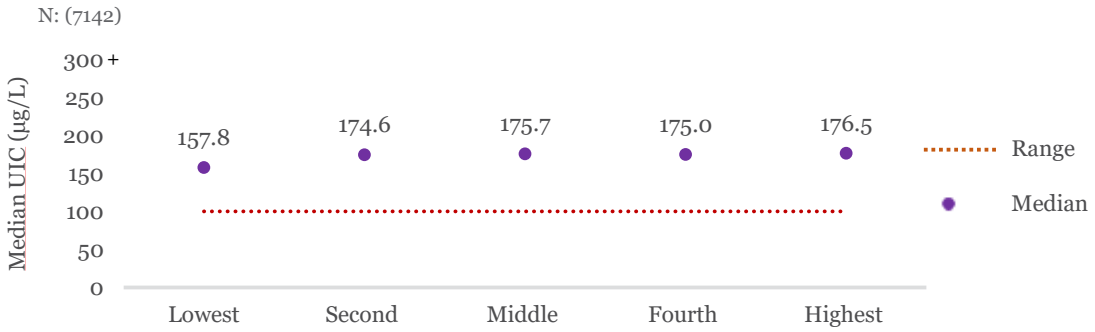
The median UIC among lactating women was found to be 172.8 µg/L national level and the median UIC for lactating women was found to have adequate iodine nutrition (≥100 µg/L), as per WHO urinary iodine cut off value of median UIC. Across rural and urban areas, only a slight variation was observed; with urban areas having higher median UIC (178.6µg/L) compared to rural area (166.6 µg/L). At the zonal level, the median UIC was reported highest in the south zone (191.9 µg/L) while east zone reported the lowest (151.5 µg/L), as depicted in figure 5.3.

**Figure 5.3: Median UIC (µg/L) among lactating women by place of residence and zones**



The distribution of median UIC was found to be similar across the wealth quintiles for lactating women. The median UIC was the lowest in the lowest quintile (157.8 µg/L) while the median UIC across all other quintiles were almost similar. Overall, across place of residence, zones and wealth quintile median UIC for lactating women was found to have adequate iodine nutrition as per the criteria mentioned above in the chapter.

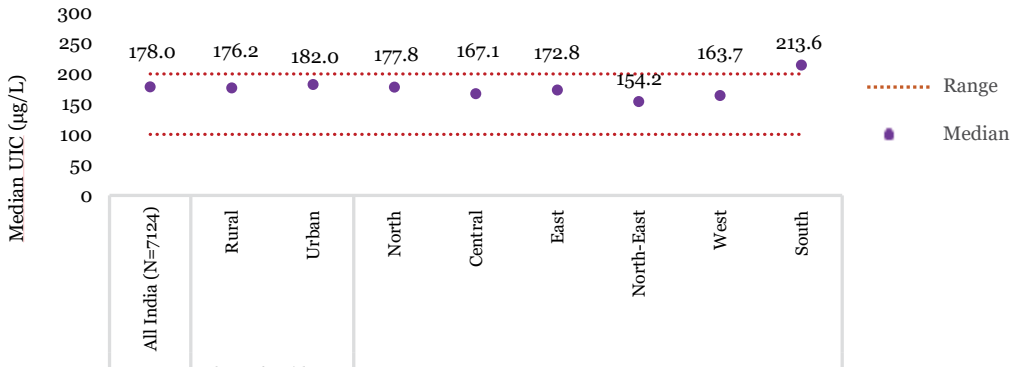
**Figure 5.4: Median UIC (µg/L) among lactating women by wealth quintiles**




## Non-pregnant non-lactating women

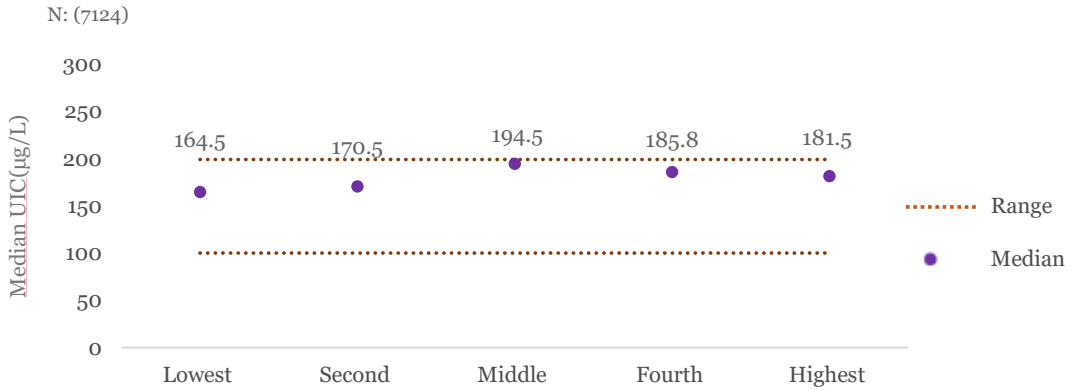
At national level, 178 µg/L was found to be the median UIC among WRA, who are neither pregnant nor lactating and in the age group 15 – 49 years. As per the WHO epidemiologic criteria, the median UIC was found to have adequate iodine nutrition (100–199 µg/L). Across rural and urban regions, there was no considerable difference. At a zonal level the median UIC was reported highest in the south zone (213.6 µg/L) which was slightly higher than the upper cut off resulting it to be above requirement urinary iodine cut off value, while north-east zone had the lowest median UIC (154.2 µg/L).

**Figure 5.5: Median UIC (µg/L) among non-pregnant non-lactating women by place of residence and zones**




Across the wealth quintile, the median UIC was highest in the middle quintile (194.5 µg/L) and least in the lowest wealth quintile (164.5 µg/L). The median UIC among all the wealth quintiles was found to have adequate iodine nutrition as per WHO standards, mentioned above in table 5.1.

**Figure 5.6: Median UIC (µg/L) among non-pregnant non-lactating women across the wealth quintile**




# Summary

According to the WHO guidelines, the median UIC among all three respondent group of PW, LW & NPNLW of WRA was found to be adequate across place of residence, zones and wealth quintile. At a zonal level, the median UIC was reported to be highest in the south zone among all WRA, i.e. pregnant women (204.2 µg/L), lactating women (191.9 µg/L) and non-pregnant non-lactating women (213.6 µg/L). Whereas it was reported lowest in east zone among pregnant women (159.2 µg/L), lactating women (151.5 µg/L), and north-east zone had the lowest median UIC (154.2 µg/L) for non-pregnant non-lactating women.

CHAPTER – 6

# KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT IODISED SALT

**This chapter discusses the knowledge, attitude and practice of the households related to iodised salt consumption. The chapter also provides an overview of the key indicators such as wealth quintile along with their place of residence. The attitudinal indicators were only captured from those who were aware of iodised salt.**

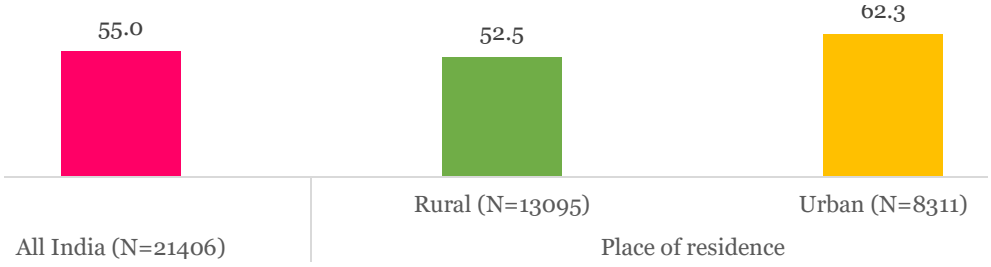
**The knowledge about iodised salt among households is represented by the level of awareness, sources of information, identification and benefit perceived of iodised salt. Attitude and perception towards iodised salt were measured through a five-point Likert type attitude scale. The consumer buying practices are also presented in this chapter.**

***More than half (55 %) of the respondents were aware about iodised salt; mostly through two common sources; television followed by community health functionaries like ASHA /ANM or AWWs.***

## Awareness and source of information about iodised salt

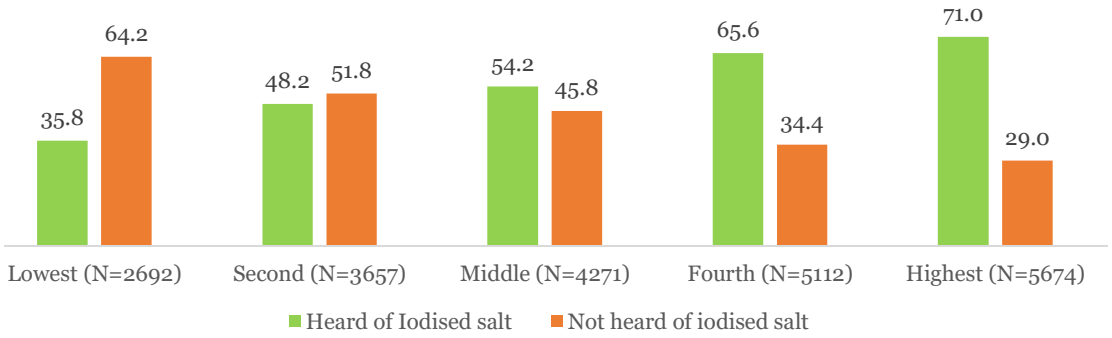
More than half of the respondents (55%) had heard of iodised salt. Higher proportion of people in urban areas (62.3%) had heard of iodized salt compared to rural areas (52.5%)

**Figure 6.1: Respondents who have heard of iodised salt by place of residence (%)**



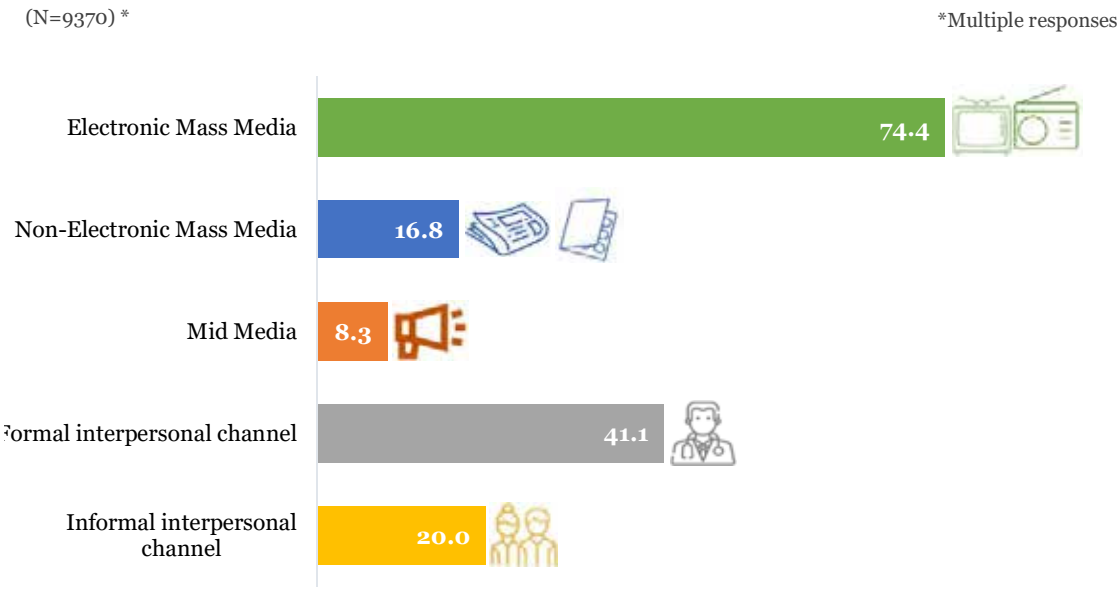
The proportion of the respondents who had heard of iodised salt reduced to nearly half from highest to lowest wealth quintile. This shows that awareness levels were higher among households from the highest wealth quintile.

**Figure 6.2: Respondents who have heard of iodised salt by wealth quintiles (%)**




Households received information related to the benefit of iodised salt through various communication channels. When asked about the sources of information to those who had heard of iodised salt, the respondents reported electronic mass media (TV and Radio) as the most common source of information followed by interpersonal channel of communication.

**Figure 6.3: Source of awareness about iodised salt (%)**

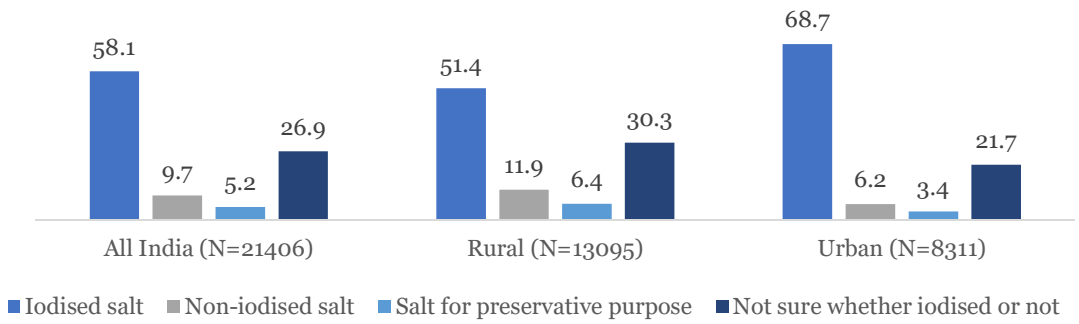



**Among those households, who had heard of iodised salt, excluding households who did not report iodised salt as a good characteristic of cooking salt)*

# Reported use of iodised salt for cooking purpose

About a little less than three out of every five households (58.1%) reported using iodised salt for cooking purposes, while about one-tenth (9.7%) reported using non-iodised cooking salt. More than a quarter (26.9%) respondents were unaware if the cooking salt they used was iodised or not. Overall, 5.2 percent of all the households reported using preservative salt for cooking purposes.

**Figure 6.4: Percentage of reported use of iodised salt for cooking in the household**




## Determinants for the kind of salt purchased

The two most important factors in decision making for purchase of cooking salt at the national level were, price (41.0%) and brand (40.9%) followed by saltiness (31.6%). Among the rural areas, price (41.2%), and among the urban areas brand (47.8%) were found to be the most important factors in determining the purchase of salt.

**Figure 6.5: Key factors determining the purchase of salt (%)**

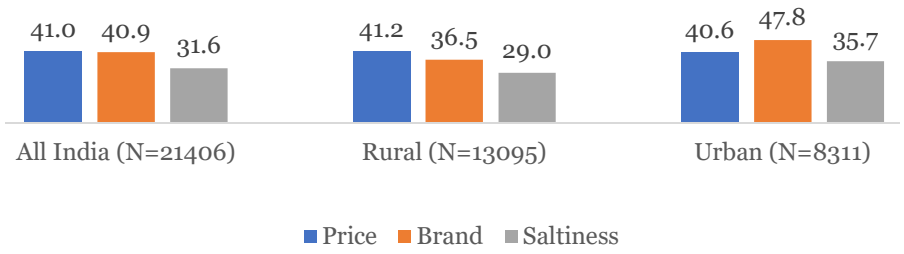
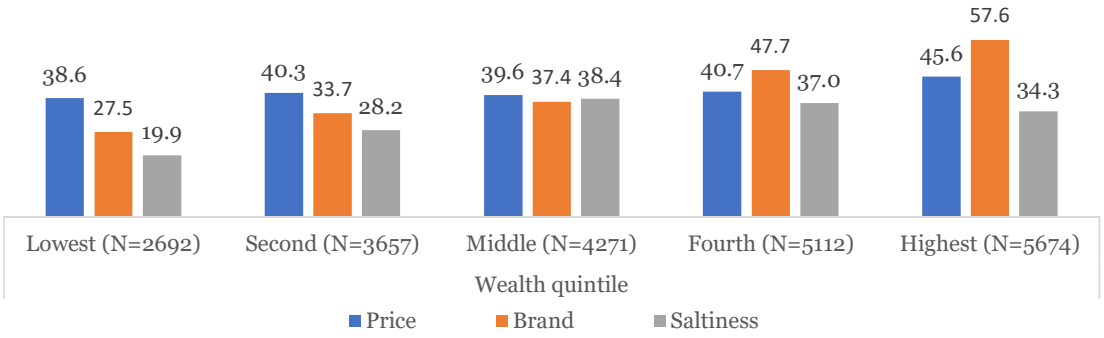
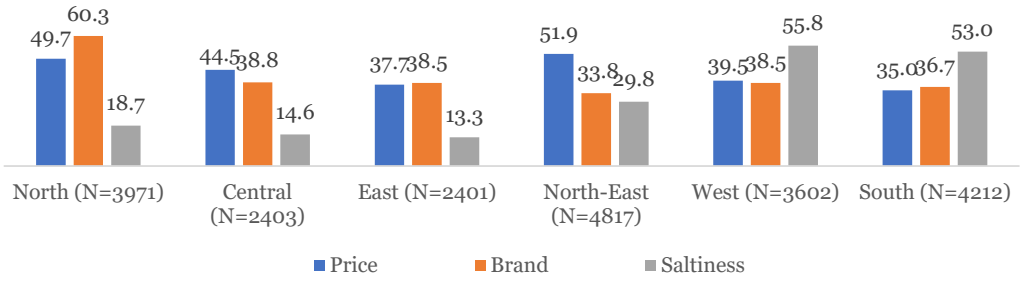



**Figure 6.6: Key factors determining the purchase of salt by wealth quintiles (%)**




At the zonal level, there is a varied distribution of the factors which determine the purchase of salt. In the north zone, brand (60.3%) was reported as the key determinant, while the price was the key determinant in the central Zone (44.5%) and north-east (51.9%) while it was saltiness in the south (53.0%) (Figure 6.7).

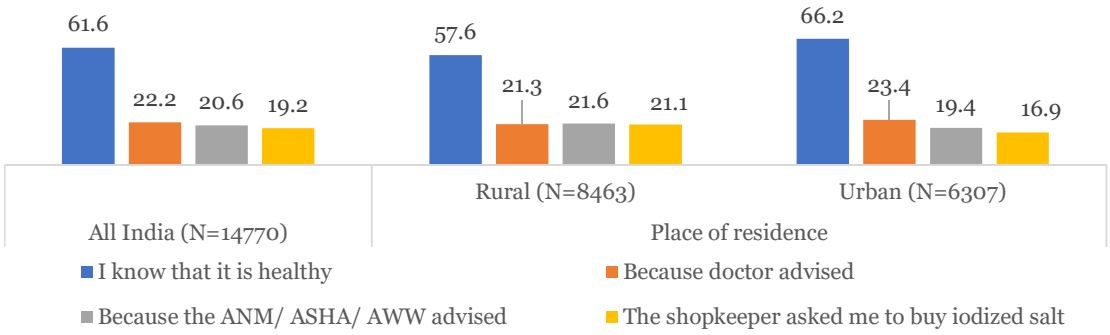
**Figure 6.7: Key factors determining the purchase of salt across zones (%)**




# Determinants of using iodised salt

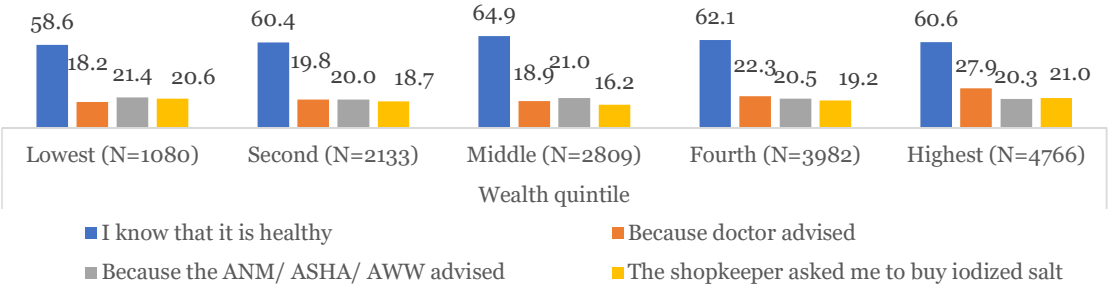
Overall, 61.6 per cent of the households reported that they use iodised salt because they know that it is healthy. While it was found that advice by doctor (22.2%), ANM/ ASHA/ AWW (20.6%) and suggestion by shopkeeper (19.2%) were the other most important determinants to use iodised salt.

**Figure 6.8: Key determinants of using iodised salt (%)**



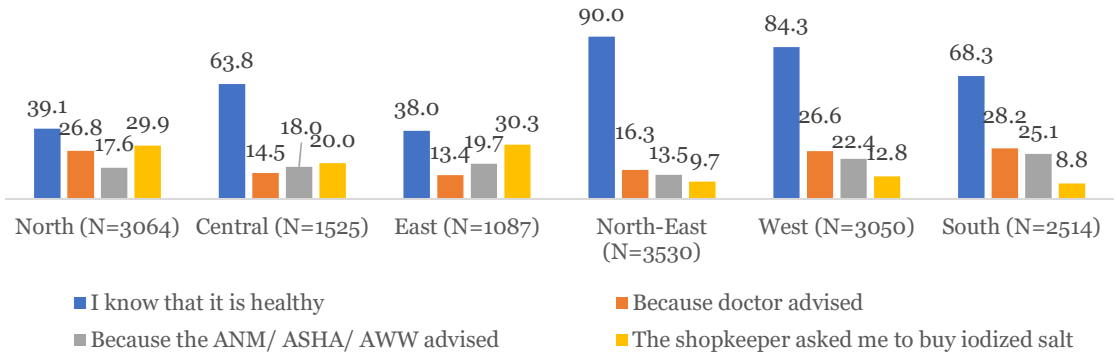

The distribution of the determinants of use of iodised salt across rural/ urban area and wealth quintiles was similar to the national level.

**Figure 6.9: Key determinants of using iodised salt (%) across wealth quintile**




Across zones, households reported that they used iodised salt because they know that it is healthy with the highest in north-east (90.0%) and west (84.3%).

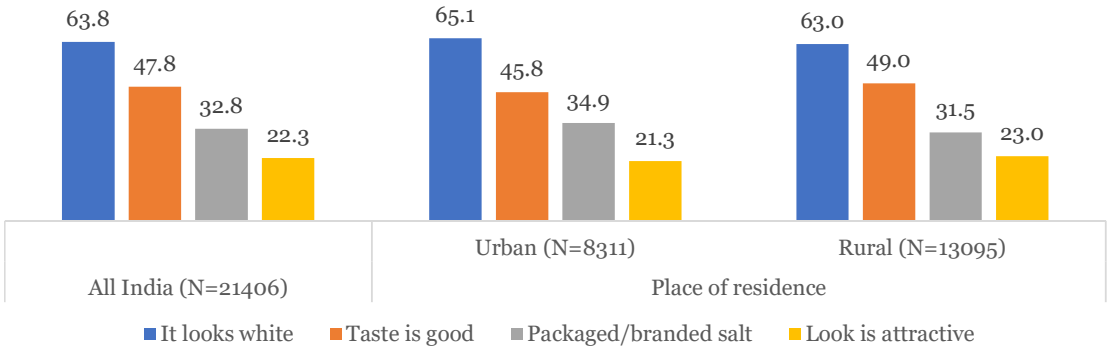
**Figure 6.10: Key determinants of using iodised salt (%) across zones**




# Perception of good quality cooking salt

At national level, 63.8 percent of the households reported that the key characteristic of good quality salt was that "it looks white". This was followed by "taste is good" (47.8%), "packaged/branded salt (32.8%) and "look is attractive" (22.3%) reported as characteristics of good quality cooking salt. A similar perception was observed across the place of residence, wealth quintile and zones, with regards to the characteristics of good quality of cooking salt.

**Figure 6.11: Key characteristics of good quality salt (%)**

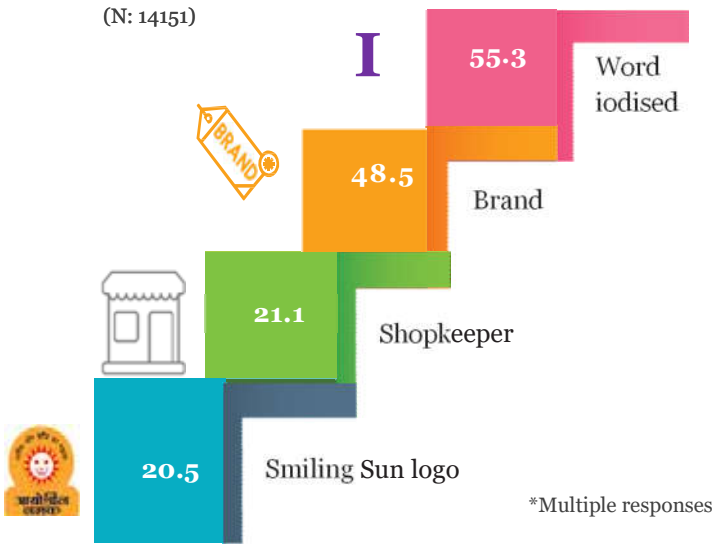



# Identification of iodised salt

The "Smiling Sun" logo is a voluntary certification used by salt producers registered with the government to indicate that the salt has been iodised[23]. In 1989, the Ministry of Health approved the "Smiling Sun" logo for easy identification of iodised salt by the public. The logo is registered with the Salt Department. Use of the logo, however, is not mandatory and is not regulated.

*23. Reaching the poor with adequately iodised salt through the Supplementary Nutrition Programme and Midday Meal Scheme in Madhya Pradesh, India; https://www.who.int/bulletin/volumes/91/7/12-110833/en/*

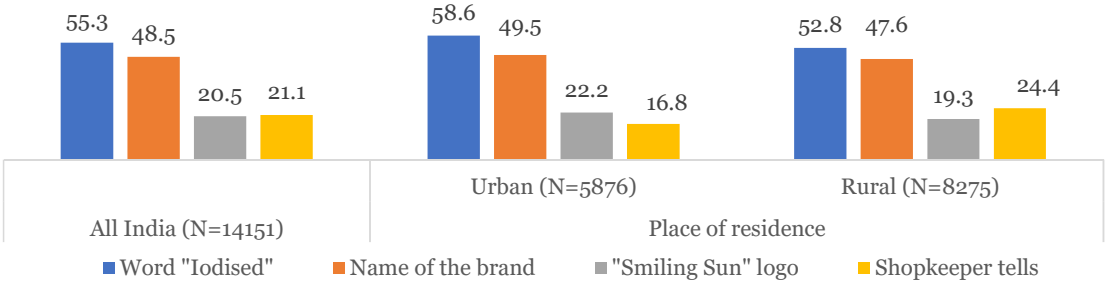
## Figure 6.12: Identification of Iodised Salt (%)




Only one-fifth (20.5%) of the respondents reported that they identify iodised salt through the "Smiling Sun" logo on the pack. The level of association is slightly higher in the rural area than in urban areas. However, when we move across the wealth quintile, it was observed that identification of iodised salt with the word "Iodised" written on the pack is consistent.

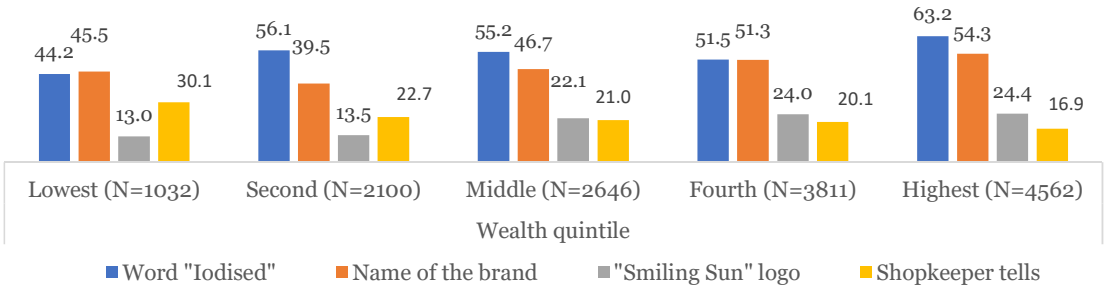
At the national level, 55.3 per cent of the respondents categorically stated that they looked for the word "iodised" as an assurance.

## Figure 6.13: Identification of iodised salt by place of residence (%)




It was also observed that, 63.2 per cent of the households who identified iodised salt though the words "Iodised" written on the pack, belonged to the highest wealth quintile.

## Figure 6.14: Identification of iodised salt by wealth quintiles (%)



## Perception of iodised salt

The attitude of the respondents towards iodised salt was measured on a five-point Likert type attitude scale on various statements related to price, package, organoleptic and health effects about iodised salt, and respondents were then asked about their level of agreement or disagreements to the statements.

The reliability of the scale was measured through Cronbach alpha, which is a measure of internal consistency. A reliability coefficient of 0.70 is considered acceptable in most social science research studies and situations. George and Mallery (2003) have provided the following rules of thumb: "_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable". The alpha coefficient of 0.748 for the scale suggest that the items have acceptable internal consistency.

In terms of health effects (statements such as: consumption of iodised salt related to normal growth of foetus in pregnant women, refined iodised salt is unhealthy, availability of iodine in our normal diet is not sufficient and iodised salt is required, consumption of iodised salt leads to disease and illness) of consumption of iodised salt more than half (56.1 %) of the respondents with a neutral attitude (i.e. neither agreed nor disagreed). Only 22.4 per cent of respondents had a correct perception of the health effects of consuming iodised salt.

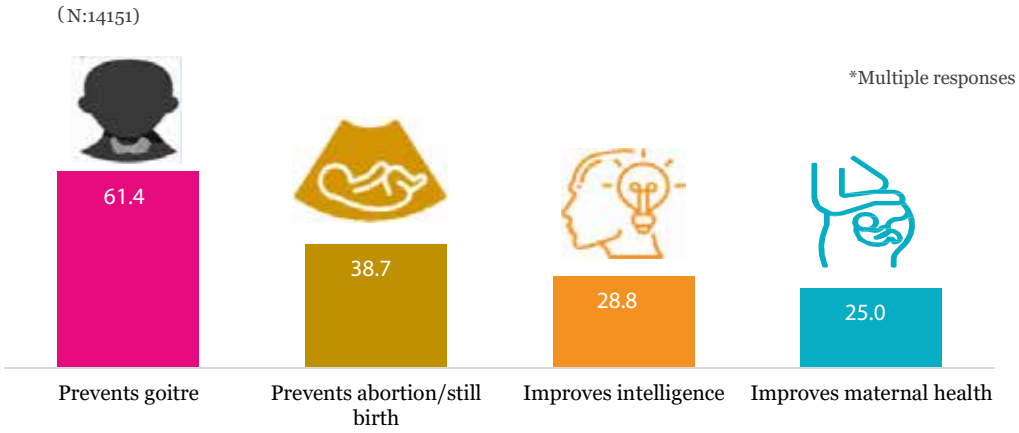
More than one third respondents (38.2%) agreed that there is a difference in organoleptic properties/ characteristics (statements such as iodised salt does taste different, iodine changes colour, odour or taste, just appearance cannot mean it is a good quality salt) of iodised salt. Overall, 20.9 per cent of the respondents had correct perception of organoleptic properties/ characteristics of iodised salt.

44.9 per cent of the respondents disagreed that all packaged salt is iodised. However, one third (33.6) respondents had a misconception about all packaged salt to be iodised. Half the respondents (50.6%) agreed that iodisation of salt drastically increase the cost while, 18.8 per cent strongly agreed, and 31.8 per cent just agreed that iodisation does increase the cost of salt.

## Benefits of consumption of iodised salt

Improved knowledge about iodine nutrition and the benefit of iodised salt is expected to have a positive effect on behaviour, unless if inhibiting factors are preventing positive behavioural changes. The most commonly reported benefit of consuming iodised salt among household who had heard of iodized salt reported was the prevention of goitre. A similar proportion of households belong to the highest quintile.

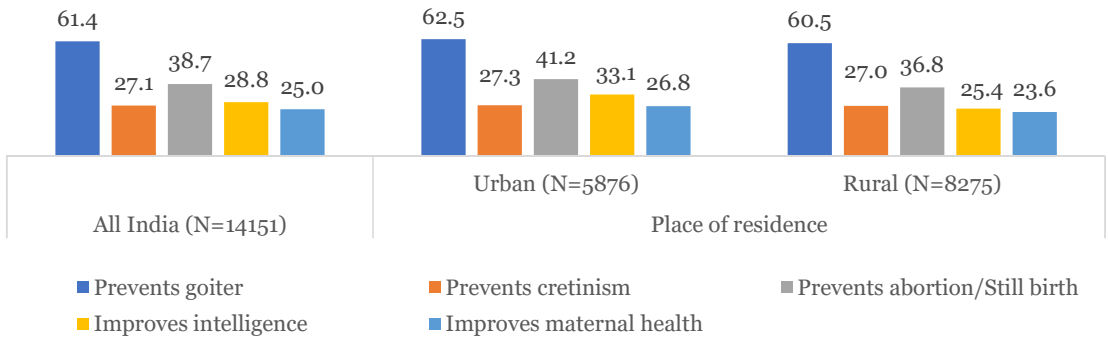
## Figure 6.15: Benefits of consuming iodised Salt (%)




Iodine deficiency in the body leads to goitre, which is enlargement of the thyroid gland. Iodine is essential for the production of maternal and foetal thyroid hormones that regulate the development of the foetal brain and nervous system[24]. Insufficient iodine intake increases the risk of negative reproductive outcomes, such as perinatal[25] and infant mortality, and intellectual impairment, the most extreme form of which is cretinism[26].

All the respondents who had heard of iodised salt were further probed about the benefits of optimal iodine intake. Of these, 61.4 per cent of the respondents were aware that optimal iodine nutrition prevents goitre. Two fifths (38.7%) of the respondents were aware of its role in the prevention of abortion and stillbirth followed by nearly one-fourth respondents who were aware of iodine benefits in brain development and improvement of maternal health.

## Figure 6.16: Distribution of the households stating the benefit of iodised salt by residence (%)




It was observed that the distribution of these respondents is quite similar in urban and rural areas.

*24. https://www.who.int/elena/titles/bbc/iodine_pregnancy/en/*
*25. Stillbirth or neonatal death within one week of birth.*
*26. a condition of severely stunted physical and mental growth owing to deficiency of thyroid hormone*

## Expenditure and willingness to pay

The survey collected information on the quantity of cooking salt generally purchased for household consumption. The results indicated that cooking salt is mostly purchased in one-kilogram packet with a higher proportion of households residing in the urban area. Purchase of cooking salt in half kilogram packet was reported by very low proportion of households. A higher ratio of the households who purchased half kg salt belonged to lowest wealth quintile. Also, the indicative trend of salt quantity purchased is more or less similar in the rural and urban areas.

It has also been reported on an average of 1 Kilogram (Kg) of salt is purchased at an interval of 24 days at the household level across India. The median price for 1 Kg of cooking salt was found to be INR 10/-.


The comparatively higher amount is spent on salt purchase with increase in wealth quintile for the same quantity of salt purchase.

The survey also elicited the willingness of households to pay an additional amount for 1 Kg of better quality salt, and it is observed that more than five out of eight households are willing to pay more if better quality cooking salt is made available to them. However, 22.7 per cent expressed their unwillingness to pay more. There is an association observed between the willingness to pay and the wealth quintile to which the respondents belong to. More than two-thirds of the households who agreed to pay higher are primarily from highest wealth quintile, whereas a higher proportion of households who were not sure of paying higher, (i.e., don't know) belongs to the lowest quintile.

## Decision maker and purchaser of salt matrix

A matrix was drawn between those who decide to buy the salt and those who finally buy it, giving us the cross tabulation between the decision maker and the purchaser. It was found that as a pattern, the decision maker and purchaser are, most of the time, the same for buying salt. Majorly the decision maker for purchase of salt is either the head of the household or the spouse of head of the household. The next major decision maker is other female adult family members.

Also, eight out of ten times it is the head of the household who is both the decision maker and purchaser of salt. On the contrary, only in 14.2 per cent cases, children <18 years made the decision and purchased salt

It is seen as a common practice that a decision maker is a purchaser pointing towards; either a shorter decision-making process towards purchasing salt as it is a low-price commodity or as a commodity which doesn't require household involvement to be purchased.

## Summary

More than half of the respondents (55.0%) had heard about iodised salt; mostly through electronic mass media TV and Radio (74.4%), and formal interpersonal channel (41.1%), majorly village frontline workers and shopkeepers.

The respondents, who were aware of iodised salt reportedly identified iodised salt mainly through the word "iodised" (55.3%) or brand name (48.5%); and one -fifth mentioned the smiling sun logo. More than half (55.0%) of the respondents reportedly had heard about iodised salt and 61.4 per cent of them mentioned prevention of goitre as the major benefit.

Only 22.4 per cent of respondents had a correct perception of the health effects of consuming iodised salt. Around one third respondents (31.9%) agreed that there is a difference in organoleptic properties/ characteristics of iodised salt while 18.7 per cent respondents disagreed. Overall, 20.9 per cent of the respondents had a correct perception of organoleptic properties/ characteristics of iodised salt.

**TABLE 6.1: DECISION MAKER AND PURCHASER OF SALT**

| Decision Maker | Member who usually buys salt | | | | |
|---|---|---|---|---|---|
| | Head of the household | Spouse of the household head | Other male adult family member | Other female adult family member | Children (<18 years) |
| Head of the household | 78.2% | 18.3% | 17.6% | 11.3% | 14.2% |
| Spouse of the household head | 18.7% | 78.2% | 17.2% | 12.3% | 58.9% |
| Other male adult family member | 1.2% | 1.7% | 52.2% | 7.0% | 2.6% |
| Other female adult family member | 1.8% | 1.6% | 13.0% | 69.3% | 10.1% |
| Children (<18 years) | 0.1% | 0.2% | 0% | 0.1% | 14.2% |
| Total | 100% | 100% | 100% | 100% | 100% |

# Annexures for Chapter 6

## TABLE 6.1: AWARENESS ABOUT IODISED SALT

| Percentage distribution of Awareness about iodised salt across all India, type of residence, wealth quintile and states across all zones | | | |
|---|---|---|---|
| | **Unweighted N** | **Aware** | **Not aware** |
| Unweighted N | 21406 | 14151 | 7255 |
| **All India** | **21406** | **55.0** | **45.0** |
| **Type of residence** | | | |
| Rural | 13095 | 50.5 | 49.5 |
| Urban | 8311 | 62.3 | 37.7 |
| **Wealth quintile** | | | |
| Lowest | 2692 | 34.8 | 65.2 |
| Second | 3657 | 49.3 | 50.7 |
| Middle | 4271 | 50.3 | 49.7 |
| Fourth | 5112 | 64.6 | 35.4 |
| Highest | 5674 | 75.4 | 24.6 |
| **North zone** | **3971** | **68.0** | **32.0** |
| Chandigarh | 600 | 75.7 | 24.3 |
| Delhi | 611 | 39.6 | 60.4 |
| Haryana | 601 | 41.5 | 58.5 |
| Himachal Pradesh | 600 | 83.5 | 16.5 |
| Jammu & Kashmir | 355 | 10.0 | 90.0 |
| Punjab | 600 | 82.3 | 17.7 |
| Rajasthan | 604 | 85.6 | 14.4 |
| **Central zone** | **2403** | **57.3** | **42.7** |
| Chhattisgarh | 600 | 74.7 | 25.3 |
| Madhya Pradesh | 603 | 46.0 | 54.0 |
| Uttarakhand | 600 | 92.7 | 7.3 |
| Uttar Pradesh | 600 | 57.0 | 43.0 |
| **East zone** | **2401** | **45.8** | **54.2** |
| Bihar | 600 | 38.8 | 61.2 |
| Jharkhand | 600 | 54.3 | 45.7 |
| Odisha | 601 | 34.4 | 65.6 |
| West Bengal | 600 | 55.1 | 44.9 |
| **North-East zone** | **4817** | **58.5** | **41.5** |
| Arunachal Pradesh | 603 | 92.8 | 7.2 |
| Assam | 601 | 52.2 | 47.8 |
| Manipur | 600 | 91.2 | 8.8 |
| Meghalaya | 600 | 70.3 | 29.7 |
| Mizoram | 605 | 93.5 | 6.5 |
| Nagaland | 600 | 52.4 | 47.6 |

| Percentage distribution of Awareness about iodised salt across all India, type of residence, wealth quintile and states across all zones | | | |
|---|---|---|---|
| | **Unweighted N** | **Aware** | **Not aware** |
| Sikkim | 600 | 83.2 | 16.8 |
| Tripura | 608 | 51.9 | 48.1 |
| West zone | 3002 | 56.0 | 44.0 |
| Dadra & Nagar Haveli | 601 | 90.2 | 9.8 |
| Daman & Diu | 600 | 87.0 | 13.0 |
| Goa | 601 | 88.3 | 11.7 |
| Gujarat | 600 | 83.5 | 16.5 |
| Maharashtra | 600 | 38.5 | 61.5 |
| **South zone** | **4812** | **52.2** | **47.8** |
| Andaman & Nicobar Island | 600 | 87.7 | 12.3 |
| Andhra Pradesh | 600 | 20.0 | 80.0 |
| Karnataka | 601 | 51.7 | 48.3 |
| Kerala | 601 | 80.8 | 19.2 |
| Lakshadweep | 600 | 90.9 | 9.1 |
| Puducherry | 600 | 73.6 | 26.4 |
| Tamil Nadu | 610 | 62.8 | 37.2 |
| Telangana | 600 | 45.9 | 54.1 |

## TABLE 6.2: SOURCE OF AWARENESS ABOUT IODISED SALT*

| Percentage distribution of source of awareness about iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Electronic mass media | | | Non-electronic mass media | Mid-media | | | |
| | Unweighted N | TV | Radio | PA | News-paper | Hoarding | Hand bills | Bus | Drama |
| Unweighted N | 9370 | 6472 | 1041 | 422 | 1469 | 474 | 240 | 77 | 120 |
| **All India** | **9370** | **70.9** | **10.9** | **4.6** | **16.8** | **4.2** | **3.0** | **1.9** | **1.5** |
| Type of residence | | | | | | | | | |
| Rural | 5455 | 67.5 | 11.7 | 4.5 | 16.5 | 3.9 | 2.8 | 2.4 | 1.8 |
| Urban | 3915 | 75.6 | 9.9 | 4.7 | 17.2 | 4.6 | 3.2 | 1.2 | 1.2 |
| **Wealth quintile** | | | | | | | | | |
| Lowest | 746 | 53.3 | 7.9 | 2.8 | 8.2 | 4.3 | 2.3 | 1.0 | 0.8 |
| Second | 1437 | 67.5 | 10.0 | 3.1 | 12.2 | 2.6 | 2.2 | 1.9 | 2.2 |
| Middle | 1860 | 73.0 | 14.4 | 7.6 | 15.9 | 4.8 | 4.7 | 3.9 | 1.8 |
| Fourth | 2445 | 75.1 | 9.9 | 4.8 | 21.3 | 5.6 | 3.4 | 2.2 | 2.1 |
| Highest | 2882 | 77.6 | 11.6 | 4.2 | 21.6 | 3.7 | 2.3 | 0.6 | 0.8 |
| **North zone** | **1820** | **68.9** | **13.2** | **2.1** | **33.5** | **5.4** | **3.0** | **2.5** | **2.5** |
| Chandigarh | 343 | 88.4 | 1.1 | - | 12.1 | 2.8 | 0.3 | 0.5 | - |
| Delhi | 201 | 91.1 | 23.1 | - | 15.1 | 0.5 | - | - | - |
| Haryana | 209 | 89.3 | 0.7 | - | 6.7 | 0.4 | 0.4 | - | - |
| Himachal Pradesh | 351 | 87.6 | 7.9 | 0.5 | 13.1 | 8.2 | - | - | 0.8 |
| Jammu & Kashmir | 42 | (80.7) | (65.2) | (2.4) | (46.7) | (4.4) | - | (2.4) | - |
| Punjab | 277 | 87.9 | 15.1 | - | 5.4 | 1.3 | 0.5 | 5.3 | - |
| Rajasthan | 397 | 54.5 | 13.3 | 3.6 | 51.2 | 7.9 | 5.0 | 2.7 | 4.3 |
| **Central zone** | **984** | **78.8** | **9.9** | **0.8** | **12.0** | **1.3** | **0.7** | **1.4** | **0.8** |
| Chhattisgarh | 350 | 83.7 | 25.0 | 0.5 | 11.9 | 1.1 | 0.6 | 0.7 | 0.4 |
| Madhya Pradesh | 196 | 75.6 | 4.2 | 0.6 | 8.1 | 0.6 | 0.9 | 0.5 | 3.5 |
| Uttarakhand | 175 | 76.5 | 2.1 | - | 20.3 | 10.9 | 1.4 | 0.5 | - |
| Uttar Pradesh | 263 | 78.8 | 8.3 | 0.9 | 13.0 | 1.2 | 0.6 | 1.9 | - |
| **East zone** | **748** | **53.9** | **3.9** | **2.4** | **11.8** | **1.3** | **1.8** | **-** | **1.1** |
| Bihar | 168 | 63.4 | 7.7 | - | 15.7 | 3.4 | 4.5 | - | 2.5 |
| Jharkhand | 183 | 38.8 | 6.2 | - | 15.6 | 0.3 | 1.4 | - | 1.0 |
| Odisha | 175 | 84.7 | 2.7 | 1.4 | 18.2 | 0.6 | 0.6 | - | 0.6 |
| West Bengal | 222 | 38.4 | 0.3 | 5.7 | 4.5 | - | - | - | - |
| **North-East zone** | **2415** | **63.0** | **7.5** | **6.6** | **8.3** | **2.2** | **1.1** | **0.4** | **1.0** |
| Arunachal Pradesh | 443 | 81.6 | 3.2 | 0.2 | 3.9 | 1.3 | - | 0.2 | 0.1 |
| Assam | 283 | 65.2 | 4.2 | 6.0 | 4.9 | 0.8 | 1.4 | 0.5 | 0.7 |
| Manipur | 389 | 15.9 | 39.1 | 0.6 | 13.5 | 13.3 | - | - | 5.5 |
| Meghalaya | 294 | 52.3 | 10.8 | 10.9 | 18.2 | 1.7 | 0.5 | - | - |

| Formal interpersonal channel | | | | Informal interpersonal channel | Others | Don't know |
|---|---|---|---|---|---|---|
| Health Group | Doctor | ASHA /AWW/ANM | Shop-keeper | Friends | | |
| 350 | 1245 | 2295 | 1334 | 1588 | 50 | 156 |
| **3.5** | **14.2** | **20.7** | **18.9** | **20.0** | **1.0** | **3.3** |
| | | | | | | |
| 4.3 | 13.0 | 23.3 | 22.0 | 21.0 | 1.1 | 4.5 |
| 2.4 | 16.0 | 17.0 | 14.5 | 18.5 | 0.8 | 1.6 |
| | | | | | | |
| 3.2 | 7.7 | 17.9 | 25.4 | 23.3 | 1.7 | 11.5 |
| 1.9 | 10.0 | 22.8 | 22.4 | 23.6 | 0.8 | 4.2 |
| 5.1 | 19.1 | 24.3 | 19.5 | 21.6 | 0.9 | 2.6 |
| 4.3 | 18.1 | 21.4 | 17.8 | 21.0 | 1.0 | 1.0 |
| 3.0 | 13.6 | 17.1 | 13.1 | 13.0 | 0.7 | 0.7 |
| **4.0** | **16.8** | **23.8** | **21.7** | **16.4** | **0.1** | **1.0** |
| 0.6 | 22.4 | 1.8 | 23.5 | 9.0 | - | 0.6 |
| - | 7.6 | 2.5 | 9.0 | 9.6 | - | - |
| 1.6 | 3.6 | 4.7 | 4.5 | 3.0 | 0.8 | 0.3 |
| 0.5 | 18.0 | 8.8 | 22.5 | 7.7 | - | - |
| - | (31.3) | - | (2.4) | (2.4) | - | (2.0) |
| - | 8.4 | 5.3 | 28.1 | 16.6 | - | - |
| 6.6 | 22.5 | 37.8 | 24.9 | 20.9 | - | 1.6 |
| **1.7** | **6.3** | **10.8** | **28.9** | **23.3** | **0.8** | **2.4** |
| 2.6 | 8.7 | 25.5 | 6.7 | 3.4 | 0.2 | 0.5 |
| 2.6 | 4.5 | 14.3 | 19.0 | 25.3 | 1.2 | 4.7 |
| 2.5 | 13.2 | 61.6 | 30.1 | 21.9 | - | 2.8 |
| 1.1 | 6.0 | 3.6 | 38.0 | 27.8 | 0.9 | 2.0 |
| **4.7** | **9.4** | **34.6** | **28.8** | **32.7** | **1.4** | **3.0** |
| 1.9 | 5.0 | 9.8 | 40.8 | 54.0 | 0.7 | - |
| 17.0 | 8.7 | 52.6 | 39.0 | 30.1 | - | 1.6 |
| 3.3 | 13.2 | 33.4 | 15.7 | 24.6 | 1.4 | 0.5 |
| 3.6 | 11.9 | 50.7 | 19.9 | 18.3 | 2.6 | 7.0 |
| **0.9** | **13.1** | **27.6** | **21.0** | **32.0** | **0.2** | **4.0** |
| 0.8 | 13.7 | 27.8 | 15.7 | 16.4 | - | - |
| 0.7 | 15.3 | 31.3 | 24.9 | 31.9 | - | 5.0 |
| 0.4 | 9.2 | 21.7 | 30.4 | 66.3 | 1.3 | 6.6 |
| 3.4 | 13.2 | 31.2 | 8.9 | 31.5 | - | 0.2 |

| Percentage distribution of source of awareness about iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Electronic mass media | | | Non-electronic mass media | Mid-media | | |
| | Unweighted N | TV | Radio | PA | News-paper | Hoarding | Hand bills | Bus |
| Mizoram | 389 | 93.1 | - | 28.0 | 14.6 | 0.3 | 0.6 | - |
| Nagaland | 156 | 78.2 | 2.7 | 2.1 | 30.0 | 0.9 | - | - |
| Sikkim | 318 | 43.7 | 2.8 | 8.3 | 27.9 | 0.4 | 0.5 | - |
| Tripura | 143 | 87.9 | 7.5 | 6.0 | 11.2 | 5.6 | 2.3 | 0.7 |
| **West zone** | **1458** | **81.9** | **12.5** | **4.5** | **11.7** | **5.4** | **5.1** | **2.3** |
| Dadra & Nagar Haveli | 303 | 38.6 | 1.0 | 0.2 | 1.5 | 6.1 | 5.2 | 0.2 |
| Daman & Diu | 393 | 51.0 | 2.6 | 3.9 | 11.5 | 21.4 | 14.0 | 0.3 |
| Goa | 294 | 64.7 | 54.9 | 0.4 | 56.1 | 9.0 | 2.2 | 0.9 |
| Gujarat | 311 | 68.9 | 17.6 | 6.9 | 13.7 | 6.7 | 9.0 | 3.8 |
| Maharashtra | 157 | 97.6 | 5.4 | 1.9 | 7.9 | 3.7 | 0.8 | 0.6 |
| **South zone** | **1945** | **69.8** | **14.4** | **11.2** | **17.5** | **7.8** | **5.1** | **3.2** |
| Andaman & Nicobar Island | 225 | 52.9 | 3.1 | 0.4 | 1.1 | 8.9 | - | - |
| Andhra Pradesh | 96 | 92.4 | 7.7 | 4.6 | 10.3 | 4.9 | 1.0 | - |
| Karnataka | 178 | 52.8 | 32.7 | 19.4 | 30.4 | 12.4 | 13.7 | 12.1 |
| Kerala | 393 | 76.3 | 12.5 | 8.0 | 18.0 | 6.5 | 2.5 | - |
| Lakshadweep | 280 | 58.9 | 11.1 | 6.3 | 19.1 | 3.1 | 0.4 | - |
| Puducherry | 245 | 91.3 | 8.7 | 6.3 | 14.1 | 9.3 | 8.5 | - |
| Tamil Nadu | 306 | 66.9 | 5.6 | 9.0 | 13.9 | 7.6 | 3.3 | 0.3 |
| Telangana | 222 | 82.3 | 12.8 | 11.4 | 8.9 | 4.1 | 1.5 | 1.9 |

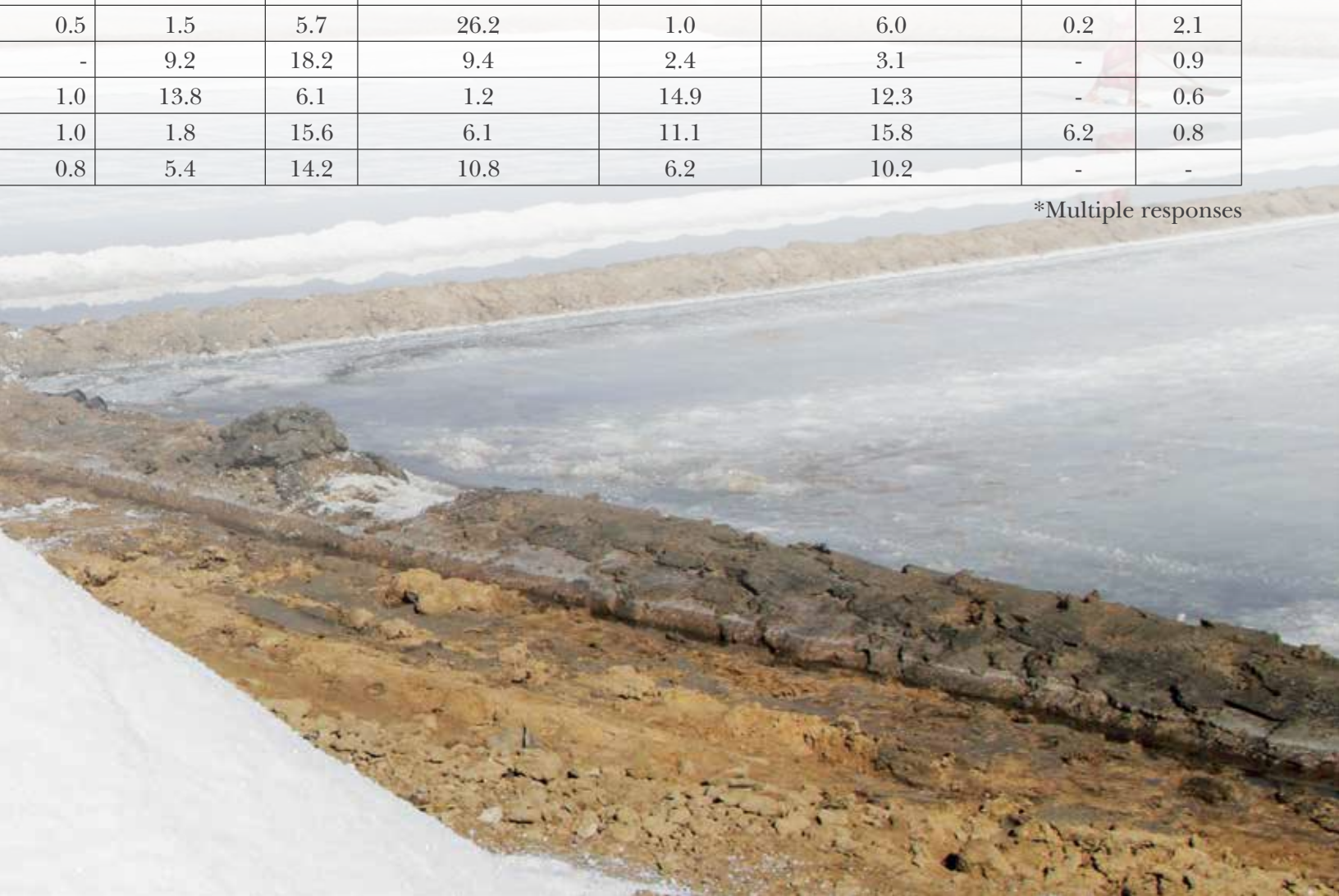
*Only asked for households who had heard of iodised salt (and also excluded households who did not reported iodised salt as a good characteristic of cooking salt)

PA: Public Announcements

( ) Based on 25-49 unweighted cases

| | Formal interpersonal channel | | | | Informal interpersonal channel | Others | Don't know |
|---|---|---|---|---|---|---|---|
| Drama | Health Group | Doctor | ASHA /AWW/ANM | Shop-keeper | Friends | | |
| - | - | 0.3 | 0.8 | 5.2 | 10.5 | - | 0.2 |
| 1.5 | 2.6 | 9.3 | 2.2 | 7.6 | 46.1 | 1.4 | - |
| - | 5.5 | 1.5 | 58.2 | 3.4 | 2.1 | 0.4 | - |
| 1.2 | - | 4.9 | 9.3 | 3.2 | 9.0 | 1.0 | 2.1 |
| **0.7** | **1.8** | **27.0** | **25.1** | **8.4** | **14.1** | **-** | **0.4** |
| 1.7 | 3.7 | 25.4 | 76.7 | 2.5 | 4.6 | - | 0.2 |
| 5.5 | 17.9 | 25.5 | 57.3 | 2.0 | 4.3 | - | - |
| - | 2.0 | 2.8 | 7.8 | 2.9 | 0.3 | - | 1.5 |
| 1.3 | 2.1 | 27.8 | 47.7 | 8.9 | 6.7 | - | - |
| - | 1.3 | 27.0 | - | 8.1 | 22.9 | - | 0.8 |
| **2.5** | **5.8** | **15.5** | **15.4** | **7.1** | **12.7** | **2.2** | **7.7** |
| - | 1.2 | 8.8 | 62.1 | 20.3 | 32.8 | 2.3 | - |
| - | 2.6 | 1.6 | 5.9 | 2.7 | 10.0 | - | - |
| 8.6 | 16.5 | 29.2 | 26.0 | 8.0 | 16.1 | - | 30.4 |
| 0.5 | 1.5 | 5.7 | 26.2 | 1.0 | 6.0 | 0.2 | 2.1 |
| - | 9.2 | 18.2 | 9.4 | 2.4 | 3.1 | - | 0.9 |
| 1.0 | 13.8 | 6.1 | 1.2 | 14.9 | 12.3 | - | 0.6 |
| 1.0 | 1.8 | 15.6 | 6.1 | 11.1 | 15.8 | 6.2 | 0.8 |
| 0.8 | 5.4 | 14.2 | 10.8 | 6.2 | 10.2 | - | - |

*Multiple responses



## TABLE 6.3: KEY FACTORS DETERMINING THE PURCHASE OF SALT

| Per cent distribution of characteristics determining the purchase of salt across all India, type of residence, wealth quintile and states across all zones | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Unweighted N | Saltiness | Texture | Colour | Price | Brand | Tradition | Purity | Others | Don't know |
| Unweighted N | 21406 | 5949 | 3135 | 5524 | 9084 | 10802 | 1207 | 2852 | 78 | 1746 |
| **All India** | **21406** | **31.6** | **15.0** | **30.3** | **41.0** | **40.9** | **6.3** | **12.8** | **0.4** | **12.2** |
| **Type of residence** | | | | | | | | | | |
| Rural | 13095 | 29.0 | 14.5 | 29.7 | 41.2 | 36.5 | 6.6 | 11.1 | 0.4 | 16.3 |
| Urban | 8311 | 35.7 | 15.9 | 31.3 | 40.6 | 47.8 | 5.8 | 15.6 | 0.4 | 5.8 |
| **Wealth quintile** | | | | | | | | | | |
| Lowest | 2692 | 19.9 | 8.2 | 26.1 | 38.6 | 27.5 | 4.3 | 8.7 | 0.4 | 26.7 |
| Second | 3657 | 28.2 | 13.2 | 28.6 | 40.3 | 33.7 | 6.0 | 11.0 | 0.7 | 15.6 |
| Middle | 4271 | 38.4 | 18.5 | 28.6 | 39.6 | 37.4 | 7.3 | 11.1 | 0.2 | 9.3 |
| Fourth | 5112 | 37.0 | 20.5 | 31.0 | 40.7 | 47.7 | 7.9 | 16.5 | 0.3 | 6.4 |
| Highest | 5674 | 34.3 | 14.6 | 36.9 | 45.6 | 57.6 | 6.1 | 16.7 | 0.4 | 3.6 |
| **North zone** | **3971** | **18.7** | **17.6** | **31.1** | **49.7** | **60.3** | **10.4** | **12.9** | **0.2** | **6.3** |
| Chandigarh | 600 | 4.9 | 1.4 | 20.5 | 22.5 | 72.9 | 0.8 | 15.1 | - | 12.9 |
| Delhi | 611 | 14.9 | 5.3 | 34.4 | 40.2 | 49.4 | 9.9 | 6.0 | 0.1 | 3.6 |
| Haryana | 601 | 6.3 | 21.2 | 23.8 | 30.8 | 47.6 | 8.2 | 7.4 | 0.5 | 15.1 |
| Himachal Pradesh | 600 | 4.0 | 3.4 | 29.2 | 48.7 | 76.7 | 7.2 | 13.6 | - | 5.5 |
| Jammu & Kashmir | 355 | 59.7 | 58.9 | 67.0 | 71.9 | 71.0 | 34.1 | 6.1 | 0.6 | 0.6 |
| Punjab | 600 | 7.8 | 4.1 | 19.6 | 45.4 | 82.0 | 6.1 | 17.3 | 0.2 | 1.7 |
| Rajasthan | 604 | 23.5 | 19.6 | 32.3 | 57.2 | 54.5 | 9.7 | 15.6 | - | 6.6 |
| **Central zone** | **2403** | **14.6** | **6.1** | **23.6** | **44.5** | **38.8** | **2.6** | **13.9** | **0.6** | **16.9** |
| Chhattisgarh | 600 | 42.4 | 20.4 | 37.2 | 49.6 | 34.3 | 3.3 | 11.1 | - | 5.6 |
| Madhya Pradesh | 603 | 23.7 | 5.2 | 20.8 | 34.6 | 24.6 | 3.5 | 6.3 | 2.2 | 29.0 |
| Uttarakhand | 600 | 41.7 | 0.5 | 4.9 | 27.0 | 44.0 | 0.4 | 38.1 | 0.1 | 0.4 |
| Uttar Pradesh | 600 | 3.3 | 4.0 | 23.4 | 49.1 | 45.9 | 2.2 | 16.5 | - | 14.6 |
| **East zone** | **2401** | **13.3** | **4.3** | **24.0** | **37.7** | **38.5** | **5.5** | **9.1** | **0.8** | **20.0** |
| Bihar | 600 | 1.3 | 1.3 | 26.4 | 47.7 | 43.9 | 0.3 | 4.9 | 0.5 | 33.5 |
| Jharkhand | 600 | 1.0 | 2.0 | 22.0 | 62.6 | 33.1 | 7.1 | 26.0 | 1.5 | 15.8 |
| Odisha | 601 | 30.4 | 5.7 | 29.2 | 3.4 | 16.5 | - | 2.4 | 2.7 | 26.8 |
| West Bengal | 600 | 22.2 | 7.7 | 20.0 | 33.9 | 45.1 | 12.9 | 10.1 | - | 4.3 |
| **North-East zone** | **4817** | **29.8** | **25.1** | **20.7** | **51.9** | **33.8** | **1.8** | **4.3** | **0.4** | **13.3** |
| Arunachal Pradesh | 603 | 58.1 | 42.4 | 35.7 | 68.4 | 52.7 | 4.6 | 0.5 | - | 0.3 |
| Assam | 601 | 37.3 | 30.2 | 21.6 | 52.2 | 24.1 | 0.9 | 3.9 | 0.2 | 17.5 |
| Manipur | 600 | 21.6 | 4.3 | 2.9 | 44.9 | 88.4 | 1.0 | 3.4 | 2.5 | 4.1 |

| Per cent distribution of characteristics determining the purchase of salt across all India, type of residence, wealth quintile and states across all zones | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Unweighted N | Saltiness | Texture | Colour | Price | Brand | Tradition | Purity | Others | Don't know |
| Mizoram | 605 | 10.4 | 2.6 | 7.5 | 20.1 | 95.1 | 0.2 | 0.2 | 1.3 | - |
| Nagaland | 600 | 0.4 | 29.0 | 23.2 | 63.3 | 28.9 | 2.6 | 2.5 | - | 0.6 |
| Sikkim | 600 | 0.9 | 1.4 | 8.1 | 25.6 | 70.6 | 1.7 | 4.4 | - | 1.3 |
| Tripura | 608 | 12.5 | 20.5 | 25.7 | 33.8 | 34.8 | 9.1 | 10.4 | 1.1 | 17.0 |
| **West zone** | **3002** | **55.8** | **33.4** | **33.6** | **39.5** | **38.5** | **4.9** | **12.1** | **-** | **1.8** |
| Dadra & Nagar Haveli | 601 | 30.2 | 16.2 | 4.8 | 26.3 | 41.9 | 1.8 | 51.5 | - | 0.1 |
| Daman & Diu | 600 | 38.0 | 24.1 | 9.5 | 32.8 | 64.5 | 10.6 | 23.8 | - | - |
| Goa | 601 | 18.2 | 1.7 | 7.0 | 79.5 | 74.3 | 2.2 | 0.8 | - | 3.0 |
| Gujarat | 600 | 70.7 | 44.9 | 39.3 | 50.0 | 46.6 | 10.6 | 20.7 | - | 0.7 |
| Maharashtra | 600 | 47.5 | 27.0 | 30.9 | 32.6 | 32.9 | 1.5 | 6.9 | - | 2.4 |
| **South zone** | **4812** | **53.0** | **16.5** | **40.1** | **35.0** | **36.7** | **9.6** | **16.7** | **0.3** | **11.8** |
| Andaman & Nicobar Island | 600 | 26.2 | 5.1 | 14.3 | 46.8 | 73.8 | 3.1 | 10.0 | 0.5 | 10.5 |
| Andhra Pradesh | 600 | 58.3 | 30.9 | 43.6 | 26.2 | 28.8 | 3.1 | 1.8 | 0.4 | 16.3 |
| Karnataka | 601 | 51.5 | 13.2 | 25.8 | 32.6 | 35.4 | 22.8 | 17.1 | - | 21.5 |
| Kerala | 601 | 40.9 | 21.4 | 40.6 | 30.5 | 48.2 | 5.7 | 15.8 | - | 13.0 |
| Lakshadweep | 600 | 3.5 | 5.6 | 12.6 | 38.5 | 70.2 | 4.6 | 0.9 | - | 7.6 |
| Puducherry | 600 | 51.4 | 17.0 | 53.8 | 44.7 | 72.6 | 11.6 | 53.1 | - | 0.4 |
| Tamil Nadu | 610 | 42.3 | 3.5 | 34.3 | 33.5 | 40.7 | 2.0 | 31.7 | 0.7 | 4.4 |
| Telangana | 600 | 80.3 | 26.9 | 74.6 | 55.9 | 29.6 | 8.4 | 4.4 | - | 0.4 |

*Multiple responses

## TABLE 6.4: REASON FOR PURCHASE OF IODISED SALT

| Per cent distribution of reason for purchase of iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | |
|---|---|---|---|---|---|
| | **Unweighted N** | **Because it is healthy** | **Because other kinds of salt are not available** | **Doctor advised** | **ANM/ ASHA/ AWW advised** |
| Unweighted N | 14770 | 9614 | 1664 | 3100 | 3347 |
| **All India** | **14770** | **61.6** | **15.1** | **22.2** | **20.6** |
| **Type of residence** | | | | | |
| Rural | 8463 | 57.6 | 17.3 | 21.3 | 21.6 |
| Urban | 6307 | 66.2 | 12.5 | 23.4 | 19.4 |
| **Wealth quintile** | | | | | |
| Lowest | 1080 | 58.6 | 15.1 | 18.2 | 21.4 |
| Second | 2133 | 60.4 | 18.1 | 19.8 | 20.0 |
| Middle | 2809 | 64.9 | 15.1 | 18.9 | 21.0 |
| Fourth | 3982 | 62.1 | 15.1 | 22.3 | 20.5 |
| Highest | 4766 | 60.6 | 13.3 | 27.9 | 20.3 |
| **North zone** | **3064** | **39.1** | **15.3** | **26.8** | **17.6** |
| Chandigarh | 537 | 14.2 | 1.4 | 32.3 | 12.5 |
| Delhi | 410 | 72.7 | 7.4 | 41.5 | 19.0 |
| Haryana | 334 | 5.4 | 2.3 | 8.6 | 7.1 |
| Himachal Pradesh | 495 | 26.9 | 24.7 | 37.9 | 24.0 |
| Jammu & Kashmir | 228 | 94.1 | 48.5 | 42.7 | 7.1 |
| Punjab | 570 | 43.3 | 5.4 | 11.3 | 8.2 |
| Rajasthan | 490 | 34.5 | 20.3 | 33.2 | 25.3 |
| **Central zone** | **1525** | **63.8** | **26.0** | **14.5** | **18.0** |
| Chhattisgarh | 517 | 85.8 | 9.7 | 15.3 | 28.7 |
| Madhya Pradesh | 276 | 39.6 | 30.5 | 11.6 | 21.7 |
| Uttarakhand | 499 | 67.6 | 19.0 | 25.4 | 40.0 |
| Uttar Pradesh | 233 | 66.0 | 31.6 | 14.2 | 9.0 |
| **East zone** | **1087** | **38.0** | **6.1** | **13.4** | **19.7** |
| Bihar | 276 | 13.3 | 4.3 | 13.1 | 9.4 |
| Jharkhand | 256 | 22.5 | 10.9 | 17.3 | 31.5 |
| Odisha | 148 | 76.3 | 2.2 | 9.6 | 21.1 |
| West Bengal | 407 | 52.5 | 6.8 | 13.4 | 23.9 |
| Arunachal Pradesh | 542 | 93.3 | 12.6 | 23.4 | 15.0 |
| Assam | 281 | 93.1 | 18.1 | 21.2 | 16.3 |
| Manipur | 527 | 61.6 | 25.4 | 12.7 | 17.4 |
| Meghalaya | 466 | 93.1 | 4.0 | 4.7 | 9.4 |
| Mizoram | 603 | 94.0 | 8.5 | 15.1 | - |
| Nagaland | 260 | 96.5 | 0.5 | 3.4 | - |
| Sikkim | 535 | 82.4 | - | 1.5 | 24.9 |

| Shopkeeper asked to buy | Household members asked me to buy | Friends asked me to buy | Panchayat member asked me to buy | Teacher told our children to buy | Others |
|---|---|---|---|---|---|
| 2549 | 2142 | 1276 | 269 | 567 | 128 |
| **19.2** | **15.4** | **9.5** | **2.1** | **5.1** | **1.2** |
| | | | | | |
| 21.1 | 16.7 | 10.9 | 2.5 | 5.0 | 1.4 |
| 16.9 | 13.8 | 7.8 | 1.7 | 5.1 | 0.9 |
| | | | | | |
| 20.6 | 15.7 | 8.7 | 2.0 | 2.2 | 2.4 |
| 18.7 | 12.8 | 11.9 | 1.6 | 3.2 | 1.7 |
| 16.2 | 13.4 | 9.4 | 2.3 | 4.5 | 1.1 |
| 19.2 | 16.2 | 8.8 | 2.4 | 6.0 | 0.8 |
| 21.0 | 17.6 | 9.0 | 2.3 | 7.1 | 0.8 |
| **29.9** | **28.2** | **16.4** | **5.2** | **7.9** | **0.7** |
| 44.8 | 27.6 | 12.5 | 0.7 | 3.3 | 0.7 |
| 19.3 | 12.9 | 8.7 | 0.9 | 0.7 | 0.2 |
| 25.6 | 46.8 | 8.8 | 0.8 | 0.9 | 5.4 |
| 40.9 | 30.3 | 13.5 | 3.8 | 2.9 | - |
| 8.6 | 6.3 | 7.1 | - | 4.8 | - |
| 34.5 | 39.0 | 12.3 | 1.1 | 6.2 | 0.2 |
| 31.9 | 23.3 | 23.3 | 10.0 | 12.9 | - |
| **20.0** | **19.2** | **8.6** | **1.9** | **3.8** | **1.7** |
| 8.1 | 7.3 | 2.9 | 2.1 | 7.2 | 1.3 |
| 26.0 | 24.4 | 9.4 | 3.4 | 2.8 | 2.8 |
| 32.3 | 43.9 | 23.2 | 2.9 | 17.8 | - |
| 20.7 | 18.8 | 9.0 | 0.8 | 1.0 | 1.6 |
| **30.3** | **14.6** | **13.9** | **0.4** | **1.5** | **2.8** |
| 57.5 | 16.4 | 33.9 | 0.4 | 4.1 | 1.5 |
| 18.7 | 19.9 | 12.9 | - | 0.4 | 19.5 |
| 22.9 | 11.5 | 6.6 | 1.9 | 1.7 | - |
| 15.3 | 12.6 | 1.5 | 0.2 | - | 0.3 |
| 9.6 | 10.5 | 9.6 | 2.8 | 2.5 | - |
| 11.7 | 4.5 | 0.3 | - | - | 0.6 |
| 18.5 | 5.4 | 19.1 | 0.2 | 1.1 | 0.7 |
| 0.2 | 4.0 | 0.2 | - | - | - |
| 0.5 | 0.8 | 0.5 | - | 0.2 | - |
| 0.8 | 1.5 | 1.0 | - | 0.3 | - |
| 2.6 | 4.0 | 0.7 | - | 0.4 | - |

| Per cent distribution of reason for purchase of iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | |
|---|---|---|---|---|---|
| | Unweighted N | Because it is healthy | Because other kinds of salt are not available | Doctor advised | ANM/ ASHA/ AWW advised |
| Tripura | 316 | 92.5 | 9.1 | 9.0 | 7.0 |
| **West zone** | **2533** | **84.3** | **16.3** | **26.7** | **22.4** |
| Dadra & Nagar Haveli | 522 | 44.7 | 3.5 | 17.6 | 57.3 |
| Daman & Diu | 482 | 50.2 | 7.0 | 33.4 | 58.8 |
| Goa | 569 | 60.2 | 7.2 | 24.6 | 37.7 |
| Gujarat | 518 | 78.3 | 25.1 | 44.9 | 52.4 |
| Maharashtra | 442 | 89.2 | 10.6 | 14.3 | 1.6 |
| **South zone** | **3031** | **68.3** | **11.9** | **28.2** | **25.1** |
| Andaman & Nicobar Island | 548 | 77.1 | 1.3 | 24.9 | 47.4 |
| Andhra Pradesh | 360 | 48.5 | 13.6 | 26.9 | 55.2 |
| Karnataka | 264 | 98.7 | 12.3 | 10.7 | 5.9 |
| Kerala | 368 | 91.3 | 11.2 | 9.2 | 9.2 |
| Lakshadweep | 517 | 91.2 | 0.9 | 9.6 | 4.3 |
| Puducherry | 373 | 92.1 | 6.5 | 18.1 | 2.6 |
| Tamil Nadu | 196 | 89.2 | 1.2 | 22.9 | 14.9 |
| Telangana | 405 | 14.3 | 20.4 | 69.6 | 39.6 |

| Shopkeeper asked to buy | Household members asked me to buy | Friends asked me to buy | Panchayat member asked me to buy | Teacher told our children to buy | Others |
|---|---|---|---|---|---|
| 10.6 | 9.2 | 4.7 | 2.2 | 1.1 | 2.2 |
| **12.8** | **13.3** | **7.6** | **2.3** | **2.2** | **-** |
| 5.6 | 13.3 | 2.6 | 0.3 | 0.9 | - |
| 29.7 | 14.1 | 12.6 | 7.3 | 1.6 | - |
| 15.1 | 2.5 | 4.6 | 0.8 | 0.3 | - |
| 20.4 | 28.2 | 12.6 | 4.9 | 4.0 | - |
| 7.6 | 3.4 | 4.3 | 0.5 | 1.0 | - |
| **8.8** | **5.9** | **3.9** | **1.4** | **10.5** | **1.3** |
| 17.2 | 14.3 | 16.6 | - | 4.8 | 0.3 |
| 4.0 | 8.8 | 2.0 | - | 7.9 | 0.8 |
| 2.8 | 2.0 | 1.8 | 0.4 | 0.4 | - |
| 6.1 | 8.8 | 5.6 | 0.2 | 3.0 | - |
| 5.0 | 6.1 | 6.3 | 4.0 | 8.0 | - |
| 8.3 | 16.7 | 11.7 | 0.5 | 3.4 | - |
| 5.2 | 1.7 | 5.4 | 1.4 | 25.0 | 5.7 |
| 26.2 | 9.0 | 5.2 | 4.7 | 17.1 | - |

*Multiple responses

## TABLE 6.5: CHARACTERISTICS OF GOOD QUALITY COOKING SALT

| Percentage distribution of characteristics of good quality cooking salt across all India, type of residence, wealth quintile and states across all zones | | | | | |
|---|---|---|---|---|---|
| | **Unweighted N** | **It looks white** | **Look is attractive** | **Taste is good** | **Packaged/ branded salt** |
| Unweighted N | 21406 | 11928 | 4274 | 9741 | 8048 |
| **All India** | **21406** | **63.8** | **22.3** | **47.8** | **32.8** |
| **Type of residence** | | | | | |
| Rural | 13095 | 63.0 | 23.0 | 49.0 | 31.5 |
| Urban | 8311 | 65.1 | 21.3 | 45.8 | 34.9 |
| **Wealth quintile** | | | | | |
| Lowest | 2692 | 57.5 | 13.8 | 44.7 | 30.0 |
| Second | 3657 | 64.0 | 22.0 | 49.2 | 30.4 |
| Middle | 4271 | 68.5 | 25.1 | 44.9 | 29.0 |
| Fourth | 5112 | 66.2 | 27.0 | 44.5 | 36.3 |
| Highest | 5674 | 62.8 | 23.4 | 55.2 | 38.0 |
| **North zone** | **3971** | **60.2** | **35.9** | **59.4** | **36.3** |
| Chandigarh | 600 | 57.9 | 21.9 | 53.8 | 35.2 |
| Delhi | 611 | 60.7 | 29.7 | 66.7 | 27.4 |
| Haryana | 601 | 36.0 | 26.0 | 70.1 | 28.1 |
| Himachal Pradesh | 600 | 63.0 | 49.3 | 71.9 | 26.0 |
| Jammu & Kashmir | 355 | 74.9 | 66.4 | 68.5 | 51.9 |
| Punjab | 600 | 55.4 | 26.3 | 66.3 | 34.2 |
| Rajasthan | 604 | 68.1 | 38.7 | 48.4 | 40.6 |
| **Central zone** | **2403** | **64.4** | **21.2** | **59.0** | **28.3** |
| Chhattisgarh | 600 | 76.5 | 34.5 | 37.3 | 20.2 |
| Madhya Pradesh | 603 | 60.1 | 16.8 | 79.4 | 20.8 |
| Uttarakhand | 600 | 69.2 | 17.8 | 50.6 | 24.2 |
| Uttar Pradesh | 600 | 63.8 | 20.9 | 54.4 | 33.6 |
| **East zone** | **2401** | **54.2** | **5.2** | **43.6** | **44.7** |
| Bihar | 600 | 45.6 | 4.2 | 44.1 | 60.6 |
| Jharkhand | 600 | 59.3 | 12.0 | 65.1 | 37.3 |
| Odisha | 601 | 71.6 | 3.4 | 23.8 | 18.9 |
| West Bengal | 600 | 53.1 | 4.4 | 44.2 | 43.0 |
| **North-East zone** | **4817** | **52.1** | **13.3** | **38.0** | **37.1** |
| Arunachal Pradesh | 603 | 73.1 | 33.8 | 36.8 | 51.0 |
| Assam | 601 | 58.1 | 13.6 | 36.4 | 34.6 |
| Manipur | 600 | 21.2 | 7.2 | 34.3 | 67.7 |
| Meghalaya | 600 | 27.8 | 5.9 | 56.7 | 50.3 |
| Mizoram | 605 | 71.2 | 5.0 | 58.1 | 10.9 |
| Nagaland | 600 | 27.3 | 4.7 | 29.8 | 32.4 |
| Sikkim | 600 | 20.7 | 0.8 | 55.1 | 40.1 |

| Loose/ unbranded salt | Powdered salt | Granular/ | No moisture content | Free flow | Iodised salt | Other |
|---|---|---|---|---|---|---|
| 738 | 2599 | 1397 | 1643 | 1523 | 4780 | 172 |
| **4.6** | **12.9** | **8.1** | **7.4** | **6.0** | **16.0** | **1.4** |
| | | | | | | |
| 5.2 | 13.5 | 8.0 | 6.7 | 5.9 | 13.1 | 1.9 |
| 3.7 | 11.9 | 8.4 | 8.6 | 6.3 | 20.4 | 0.6 |
| | | | | | | |
| 4.0 | 11.6 | 5.9 | 4.0 | 3.7 | 7.5 | 4.3 |
| 4.0 | 15.5 | 7.3 | 7.0 | 6.0 | 12.1 | 1.0 |
| 5.1 | 13.1 | 8.4 | 8.7 | 7.4 | 11.7 | 0.6 |
| 5.6 | 13.2 | 8.9 | 9.5 | 7.7 | 20.1 | 0.4 |
| 4.3 | 11.1 | 10.1 | 7.9 | 5.5 | 27.9 | 0.9 |
| **7.8** | **8.6** | **11.2** | **6.8** | **2.4** | **18.1** | **0.5** |
| 1.1 | 7.4 | 4.4 | 1.4 | - | 18.6 | - |
| 0.8 | 5.1 | 9.8 | 6.2 | 0.5 | 3.4 | - |
| 1.6 | 3.8 | 4.0 | 9.8 | 1.7 | 7.4 | 3.2 |
| 3.9 | 3.8 | 13.8 | 6.3 | 1.9 | 25.1 | 0.2 |
| 2.0 | 9.7 | 0.2 | 2.2 | 1.9 | 1.4 | - |
| 3.9 | 8.8 | 16.6 | 2.2 | 1.3 | 34.9 | - |
| 14.7 | 11.3 | 13.5 | 8.7 | 3.8 | 20.2 | - |
| **4.4** | **11.2** | **11.0** | **6.1** | **2.3** | **15.0** | **2.5** |
| 2.6 | 9.2 | 6.4 | 4.3 | - | 16.5 | - |
| 2.7 | 2.9 | 17.1 | 0.8 | 0.1 | 12.5 | 9.0 |
| 4.0 | 25.0 | 7.7 | 14.9 | 9.4 | 62.9 | - |
| 5.6 | 14.7 | 9.3 | 8.4 | 3.2 | 13.0 | 0.2 |
| **1.6** | **20.7** | **0.8** | **4.3** | **1.7** | **15.9** | **3.0** |
| 3.1 | 12.7 | 1.3 | 2.2 | 0.4 | 11.1 | 5.8 |
| 0.4 | 24.4 | 1.3 | 10.8 | 0.6 | 24.3 | 3.2 |
| 0.9 | 39.4 | 0.7 | 4.4 | 0.5 | 6.1 | 2.8 |
| 0.8 | 19.1 | - | 4.1 | 4.1 | 22.4 | 0.2 |
| **1.2** | **25.1** | **3.0** | **5.8** | **5.7** | **12.3** | **0.2** |
| 2.5 | 16.2 | 1.6 | 3.4 | 3.5 | 20.1 | - |
| 0.9 | 31.6 | 3.3 | 5.1 | 1.0 | 5.1 | 0.1 |
| 0.3 | 5.9 | - | 22.9 | 26.1 | 26.0 | 0.2 |
| 0.7 | 4.3 | 3.0 | 3.7 | 6.5 | 21.1 | - |
| - | 8.8 | 2.7 | - | 0.2 | 30.7 | - |
| 0.1 | 7.3 | - | 11.7 | 33.0 | 26.5 | - |
| 0.1 | 6.0 | 0.2 | 0.2 | 0.4 | 30.6 | - |

| Percentage distribution of characteristics of good quality cooking salt across all India, type of residence, wealth quintile and states across all zones | | | | | |
|---|---|---|---|---|---|
| | **Unweighted N** | **It looks white** | **Look is attractive** | **Taste is good** | **Packaged/ branded salt** |
| Assam | 601 | 58.1 | 13.6 | 36.4 | 34.6 |
| Manipur | 600 | 21.2 | 7.2 | 34.3 | 67.7 |
| Meghalaya | 600 | 27.8 | 5.9 | 56.7 | 50.3 |
| Mizoram | 605 | 71.2 | 5.0 | 58.1 | 10.9 |
| Nagaland | 600 | 27.3 | 4.7 | 29.8 | 32.4 |
| Sikkim | 600 | 20.7 | 0.8 | 55.1 | 40.1 |
| Tripura | 608 | 54.1 | 23.5 | 32.3 | 31.7 |
| **West zone** | **3002** | **78.2** | **38.7** | **45.5** | **32.0** |
| Dadra & Nagar Haveli | 601 | 47.5 | 13.2 | 20.4 | 50.3 |
| Daman & Diu | 600 | 41.4 | 15.6 | 28.5 | 66.8 |
| Goa | 601 | 21.6 | 3.8 | 12.0 | 60.5 |
| Gujarat | 600 | 80.7 | 53.0 | 59.9 | 44.1 |
| Maharashtra | 600 | 77.9 | 30.8 | 37.4 | 24.0 |
| **South zone** | **4812** | **65.3** | **20.2** | **37.8** | **25.0** |
| Andaman & Nicobar Island | 600 | 28.0 | 10.3 | 55.4 | 72.6 |
| Andhra Pradesh | 600 | 59.6 | 31.7 | 44.9 | 39.3 |
| Karnataka | 601 | 58.3 | 17.6 | 30.8 | 11.4 |
| Kerala | 601 | 58.6 | 20.0 | 26.8 | 38.2 |
| Lakshadweep | 600 | 32.2 | 1.2 | 7.0 | 39.3 |
| Puducherry | 600 | 80.1 | 19.6 | 43.6 | 61.2 |
| Tamil Nadu | 610 | 73.3 | 12.6 | 28.0 | 19.7 |
| Telangana | 600 | 76.8 | 26.3 | 70.3 | 32.5 |

| Loose/ unbranded salt | Powdered salt | Granular/ | No moisture content | Free flow | Iodised salt | Other |
|---|---|---|---|---|---|---|
| 0.9 | 31.6 | 3.3 | 5.1 | 1.0 | 5.1 | 0.1 |
| 0.3 | 5.9 | - | 22.9 | 26.1 | 26.0 | 0.2 |
| 0.7 | 4.3 | 3.0 | 3.7 | 6.5 | 21.1 | - |
| - | 8.8 | 2.7 | - | 0.2 | 30.7 | - |
| 0.1 | 7.3 | - | 11.7 | 33.0 | 26.5 | - |
| 0.1 | 6.0 | 0.2 | 0.2 | 0.4 | 30.6 | - |
| 4.8 | 28.7 | 5.1 | 2.4 | 14.0 | 28.0 | 0.9 |
| **5.1** | **10.8** | **9.8** | **5.4** | **5.1** | **20.1** | **-** |
| 5.7 | 20.2 | 7.6 | 2.5 | 3.8 | 41.3 | - |
| 12.8 | 17.2 | 7.6 | 17.4 | 16.0 | 22.7 | - |
| 3.5 | 1.0 | 3.9 | 0.7 | 0.7 | 32.5 | - |
| 10.6 | 24.4 | 23.4 | 13.4 | 12.6 | 33.9 | - |
| 1.7 | 2.7 | 1.7 | 0.6 | 0.6 | 11.4 | - |
| **5.6** | **9.8** | **9.5** | **13.1** | **15.6** | **13.4** | **0.7** |
| 0.3 | 6.2 | 1.3 | 0.8 | 11.3 | 46.5 | - |
| 2.4 | 2.2 | 13.2 | 0.6 | 2.9 | 3.1 | 0.1 |
| 10.2 | 13.2 | 16.8 | 11.7 | 27.5 | 20.8 | - |
| 5.1 | 18.3 | 8.9 | 8.3 | 6.6 | 17.3 | 0.2 |
| 1.4 | 4.9 | 0.7 | 0.5 | 1.8 | 42.7 | - |
| 3.3 | 4.8 | 16.3 | 43.4 | 28.9 | 31.0 | 0.4 |
| 2.3 | 7.6 | 3.8 | 28.6 | 17.9 | 13.3 | 2.5 |
| 6.9 | 8.8 | 1.9 | 4.6 | 9.4 | 6.8 | - |

*Multiple responses

## TABLE 6.6: IDENTIFICATION OF IODISED SALT

| Percentage distribution of identification of iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Smiling sun logo** | **Name of the brand** | **Word 'Iodised'** | **Shopkeeper tells me so** | **Others** |
| Unweighted N | 14151 | 2566 | 7162 | 8438 | 2343 | 157 |
| **All India** | **14151** | **20.5** | **48.5** | **55.3** | **21.1** | **1.5** |
| **Type of residence** | | | | | | |
| Rural | 8275 | 19.3 | 47.6 | 52.8 | 24.4 | 1.5 |
| Urban | 5876 | 22.2 | 49.5 | 58.6 | 16.8 | 1.6 |
| **Wealth quintile** | | | | | | |
| Lowest | 1032 | 13.0 | 45.5 | 44.2 | 30.1 | 2.0 |
| Second | 2100 | 13.5 | 39.5 | 56.1 | 22.7 | 2.6 |
| Middle | 2646 | 22.1 | 46.7 | 55.2 | 21.0 | 1.4 |
| Fourth | 3811 | 24.0 | 51.3 | 51.5 | 20.1 | 0.8 |
| Highest | 4562 | 24.4 | 54.3 | 63.2 | 16.9 | 1.3 |
| **North zone** | **2482** | **33.1** | **69.6** | **45.8** | **28.3** | **0.6** |
| Chandigarh | 451 | 1.9 | 63.3 | 38.2 | 18.9 | 1.1 |
| Delhi | 218 | 40.5 | 54.1 | 34.5 | 8.0 | - |
| Haryana | 246 | 1.7 | 42.5 | 55.2 | 6.1 | 5.5 |
| Himachal Pradesh | 501 | 6.9 | 81.5 | 38.7 | 28.9 | - |
| Jammu & Kashmir | 48 | 60.9 | 62.8 | 31.0 | 37.0 | - |
| Punjab | 498 | 17.1 | 78.9 | 45.1 | 33.6 | 0.3 |
| Rajasthan | 520 | 46.8 | 71.1 | 46.7 | 31.9 | - |
| **Central zone** | **1637** | **11.6** | **39.0** | **64.5** | **16.4** | **1.6** |
| Chhattisgarh | 450 | 16.7 | 60.0 | 49.0 | 21.0 | 0.7 |
| Madhya Pradesh | 283 | 10.4 | 39.9 | 67.3 | 11.9 | 1.7 |
| Uttarakhand | 564 | 31.9 | 22.3 | 70.2 | 36.4 | 0.5 |
| Uttar Pradesh | 340 | 8.8 | 34.9 | 66.9 | 15.0 | 1.9 |
| **East zone** | **1098** | **4.3** | **54.2** | **51.2** | **22.6** | **3.3** |
| Bihar | 235 | 10.0 | 72.0 | 51.3 | 24.5 | 1.2 |
| Jharkhand | 319 | 6.0 | 41.0 | 60.2 | 32.1 | 6.5 |
| Odisha | 213 | 2.1 | 65.6 | 16.8 | 24.0 | 9.7 |
| West Bengal | 331 | 0.2 | 42.7 | 57.9 | 17.3 | 1.8 |
| **North-East zone** | **3569** | **9.2** | **31.4** | **62.7** | **13.8** | **2.2** |
| Arunachal Pradesh | 562 | 23.9 | 55.0 | 77.5 | 16.1 | 0.1 |
| Assam | 311 | 12.3 | 20.7 | 59.7 | 17.9 | 2.6 |
| Manipur | 553 | 0.9 | 79.4 | 38.8 | 10.8 | 1.8 |
| Meghalaya | 431 | 1.5 | 16.4 | 88.5 | 7.0 | - |
| Mizoram | 563 | 4.0 | 34.3 | 78.1 | 0.6 | - |
| Nagaland | 336 | 8.4 | 44.7 | 77.6 | 3.6 | 0.2 |

| Percentage distribution of identification of iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Smiling sun logo** | **Name of the brand** | **Word 'Iodised'** | **Shopkeeper tells me so** | **Others** |
| Sikkim | 497 | 0.2 | 53.0 | 66.7 | 1.1 | 0.2 |
| Tripura | 316 | 3.0 | 44.8 | 57.3 | 10.7 | 5.9 |
| **West zone** | **2315** | **36.6** | **53.6** | **62.1** | **17.9** | **0.1** |
| Dadra & Nagar Haveli | 538 | 59.4 | 70.3 | 50.3 | 1.7 | - |
| Daman & Diu | 527 | 35.2 | 51.5 | 74.1 | 10.8 | - |
| Goa | 536 | 10.5 | 16.4 | 87.3 | 22.6 | - |
| Gujarat | 500 | 42.9 | 60.8 | 52.0 | 19.8 | - |
| Maharashtra | 214 | 29.2 | 45.4 | 74.5 | 15.2 | 0.3 |
| **South zone** | **3050** | **22.2** | **37.8** | **50.1** | **22.9** | **1.8** |
| Andaman & Nicobar Island | 525 | 22.4 | 56.3 | 73.3 | 10.6 | 0.6 |
| Andhra Pradesh | 113 | 21.9 | 65.2 | 74.9 | 1.9 | 2.0 |
| Karnataka | 313 | 24.4 | 12.3 | 22.5 | 55.1 | - |
| Kerala | 487 | 17.0 | 39.1 | 59.1 | 9.6 | 1.3 |
| Lakshadweep | 539 | 2.3 | 50.8 | 61.7 | 3.1 | - |
| Puducherry | 443 | 31.5 | 55.8 | 50.3 | 17.7 | 0.3 |
| Tamil Nadu | 369 | 7.6 | 52.1 | 60.1 | 13.7 | 4.3 |
| Telangana | 261 | 62.2 | 41.4 | 60.0 | 4.9 | - |

*Multiple responses

## TABLE 6.7: BENEFITS OF CONSUMING IODISED SALT

| Percentage distribution of benefits of consuming iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Unweighted N** | **Prevents goitre** | **Prevents cretinism** | **Prevent abortion /stillbirth** | **Improves intelligence levels** | **Improves maternal health** | **Others** | **Don't know** |
| Unweighted N | 14151 | 10417 | 3373 | 5724 | 4105 | 3859 | 49 | 1884 |
| **All India** | **14151** | **61.4** | **27.1** | **38.7** | **28.8** | **25.0** | **0.9** | **23.0** |
| **Type of residence** | | | | | | | | |
| Rural | 8275 | 60.5 | 27.0 | 36.8 | 25.4 | 23.6 | 0.9 | 25.9 |
| Urban | 5876 | 62.5 | 27.3 | 41.2 | 33.1 | 26.8 | 0.9 | 19.3 |
| **Wealth quintile** | | | | | | | | |
| Lowest | 1032 | 42.1 | 18.1 | 20.9 | 13.9 | 19.8 | 0.9 | 46.0 |
| Second | 2100 | 54.7 | 22.5 | 26.7 | 21.6 | 20.9 | 0.8 | 29.5 |
| Middle | 2646 | 61.2 | 32.1 | 39.8 | 27.9 | 26.5 | 0.8 | 23.4 |
| Fourth | 3811 | 64.4 | 31.2 | 42.2 | 31.9 | 24.9 | 0.3 | 18.8 |
| Highest | 4562 | 71.8 | 27.5 | 50.7 | 37.9 | 29.1 | 1.6 | 11.9 |
| **North zone** | **2482** | **69.5** | **44.5** | **60.5** | **35.9** | **28.8** | **0.2** | **10.8** |
| Chandigarh | 451 | 69.3 | 3.8 | 22.7 | 20.3 | 27.1 | 0.3 | 24.7 |
| Delhi | 218 | 72.3 | 30.7 | 41.3 | 32.7 | 7.9 | - | 17.2 |
| Haryana | 246 | 50.0 | 19.9 | 23.8 | 11.0 | 24.4 | 1.5 | 41.1 |
| Himachal Pradesh | 501 | 83.7 | 43.7 | 60.3 | 32.4 | 39.0 | - | 4.7 |
| Jammu & Kashmir | 48 | (76.9) | (37.0) | (30.4) | (10.8) | (21.7) | - | - |
| Punjab | 498 | 80.9 | 30.9 | 48.8 | 40.8 | 32.0 | 0.2 | 4.5 |
| Rajasthan | 520 | 66.5 | 56.5 | 74.6 | 39.6 | 29.4 | - | 8.1 |
| **Central zone** | **1637** | **45.1** | **16.0** | **22.7** | **15.4** | **12.2** | **2.4** | **42.4** |
| Chhattisgarh | 450 | 81.3 | 35.3 | 37.4 | 22.0 | 19.1 | - | 8.0 |
| Madhya Pradesh | 283 | 38.6 | 5.5 | 19.9 | 21.7 | 19.7 | 0.9 | 45.9 |
| Uttarakhand | 564 | 84.7 | 25.1 | 45.9 | 29.9 | 26.0 | 0.2 | 12.4 |
| Uttar Pradesh | 340 | 34.4 | 14.1 | 17.7 | 9.9 | 6.2 | 3.8 | 52.8 |
| **East zone** | **1098** | **57.1** | **6.7** | **17.3** | **16.0** | **18.5** | **1.3** | **31.6** |
| Bihar | 235 | 54.0 | 7.5 | 17.0 | 20.7 | 22.9 | 3.0 | 27.9 |
| Jharkhand | 319 | 53.5 | 12.7 | 24.0 | 32.7 | 25.8 | 0.7 | 33.0 |
| Odisha | 213 | 77.9 | 13.4 | 13.0 | 9.6 | 19.7 | - | 15.2 |
| West Bengal | 331 | 54.7 | 2.0 | 16.3 | 8.3 | 12.2 | 0.6 | 38.6 |
| **North-East zone** | **3569** | **59.0** | **13.3** | **30.3** | **21.4** | **19.7** | **0.1** | **26.9** |
| Arunachal Pradesh | 562 | 85.5 | 7.6 | 29.5 | 18.0 | 19.7 | - | 10.7 |
| Assam | 311 | 42.9 | 15.1 | 33.1 | 26.8 | 20.5 | - | 39.5 |
| Manipur | 553 | 84.0 | 12.7 | 28.8 | 15.1 | 28.6 | 0.3 | 8.2 |
| Meghalaya | 431 | 91.5 | 4.6 | 13.1 | 5.9 | 4.4 | 0.1 | 5.8 |
| Mizoram | 563 | 99.6 | 0.9 | 4.9 | 6.0 | 2.6 | - | - |
| Nagaland | 336 | 94.6 | 2.0 | 53.9 | 7.0 | 20.8 | - | 0.2 |

| Percentage distribution of benefits of consuming iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Unweighted N** | **Prevents goitre** | **Prevents cretinism** | **Prevent abortion /stillbirth** | **Improves intelligence levels** | **Improves maternal health** | **Others** | **Don't know** |
| Sikkim | 497 | 80.0 | 2.9 | 26.0 | 31.5 | 25.3 | - | 3.9 |
| Tripura | 316 | 49.2 | 28.9 | 35.5 | 23.3 | 28.9 | 0.4 | 25.0 |
| **West zone** | **2315** | **69.9** | **43.9** | **58.5** | **46.4** | **49.1** | **0.3** | **8.8** |
| Dadra & Nagar Haveli | 538 | 88.8 | 51.9 | 56.1 | 27.3 | 30.7 | - | 1.8 |
| Daman & Diu | 527 | 83.3 | 45.7 | 72.6 | 28.8 | 54.2 | - | 2.7 |
| Goa | 536 | 32.1 | 7.0 | 38.2 | 64.7 | 39.2 | - | 12.7 |
| Gujarat | 500 | 89.9 | 67.9 | 74.6 | 49.7 | 56.3 | 0.2 | 0.5 |
| Maharashtra | 214 | 44.9 | 13.6 | 37.8 | 41.6 | 40.2 | 0.4 | 19.7 |
| **South zone** | **3050** | **68.7** | **30.5** | **41.5** | **34.6** | **23.3** | **0.2** | **16.0** |
| Andaman & Nicobar Island | 525 | 79.3 | 2.8 | 32.8 | 34.6 | 39.9 | 0.2 | 14.1 |
| Andhra Pradesh | 113 | 32.9 | 23.7 | 37.0 | 52.6 | 25.5 | - | 4.0 |
| Karnataka | 313 | 76.2 | 43.8 | 40.6 | 39.6 | 44.0 | - | 20.4 |
| Kerala | 487 | 72.5 | 13.5 | 52.2 | 27.9 | 17.1 | 0.2 | 15.8 |
| Lakshadweep | 539 | 87.5 | 16.8 | 48.9 | 20.6 | 21.9 | - | 4.4 |
| Puducherry | 443 | 81.6 | 64.3 | 73.4 | 72.5 | 73.3 | 0.4 | 2.2 |
| Tamil Nadu | 369 | 62.4 | 27.3 | 17.7 | 27.2 | 7.1 | 0.5 | 21.4 |
| Telangana | 261 | 79.7 | 36.0 | 88.8 | 40.5 | 22.8 | - | - |

*Multiple responses

## TABLE 6.8: QUANTITY OF THE SALT PURCHASED FOR COOKING THE LAST MEAL

| Percentage distribution of identification of iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Less than half Kg** | **Half Kg** | **1 Kg** | **5 Kg** | **Other** |
| Unweighted N | 21406 | 25 | 1261 | 19336 | 383 | 401 |
| **All India** | **21406** | **0.1** | **8.3** | **87.9** | **2.5** | **1.2** |
| **Type of residence** | | | | | | |
| Rural | 13095 | 0.1 | 9.3 | 86.2 | 3.1 | 1.3 |
| Urban | 8311 | 0.1 | 6.8 | 90.6 | 1.5 | 1.0 |
| **Wealth quintile** | | | | | | |
| Lowest | 2692 | 0.1 | 14.0 | 82.9 | 1.6 | 1.4 |
| Second | 3657 | 0.2 | 11.4 | 85.3 | 1.4 | 1.8 |
| Middle | 4271 | - | 9.1 | 86.3 | 3.9 | 0.7 |
| Fourth | 5112 | - | 5.0 | 90.3 | 3.9 | 0.8 |
| Highest | 5674 | 0.1 | 2.6 | 94.5 | 1.6 | 1.2 |
| **North zone** | **3971** | **0.1** | **1.2** | **96.3** | **1.5** | **0.9** |
| Chandigarh | 600 | - | 0.4 | 99.6 | - | - |
| Delhi | 611 | - | - | 99.6 | 0.4 | - |
| Haryana | 601 | - | 0.7 | 91.1 | 2.3 | 5.8 |
| Himachal Pradesh | 600 | - | 1.1 | 98.3 | 0.7 | - |
| Jammu & Kashmir | 355 | - | 5.2 | 94.1 | 0.8 | - |
| Punjab | 600 | 0.2 | 3.4 | 94.8 | 1.6 | - |
| Rajasthan | 604 | 0.2 | - | 98.1 | 1.7 | - |
| **Central zone** | **2403** | **-** | **9.2** | **86.8** | **1.4** | **2.6** |
| Chhattisgarh | 600 | - | 1.1 | 98.2 | 0.1 | 0.6 |
| Madhya Pradesh | 603 | - | 1.4 | 90.8 | 2.0 | 5.8 |
| Uttarakhand | 600 | - | 1.6 | 97.2 | 1.0 | 0.2 |
| Uttar Pradesh | 600 | - | 14.9 | 82.0 | 1.4 | 1.6 |
| **East zone** | **2401** | **0.2** | **17.1** | **80.8** | **0.5** | **1.3** |
| Bihar | 600 | 0.1 | 11.6 | 87.3 | 0.4 | 0.6 |
| Jharkhand | 600 | 0.2 | 16.2 | 81.1 | 1.4 | 1.0 |
| Odisha | 601 | 0.1 | 23.3 | 73.0 | 1.4 | 2.1 |
| West Bengal | 600 | 0.4 | 20.3 | 77.6 | - | 1.7 |
| **North-East zone** | **4817** | **-** | **3.1** | **92.2** | **1.5** | **3.1** |
| Arunachal Pradesh | 603 | - | 3.3 | 95.9 | 0.8 | - |
| Assam | 601 | - | 1.1 | 98.1 | 0.7 | 0.1 |
| Manipur | 600 | - | 34.2 | 65.8 | - | - |
| Meghalaya | 600 | 0.4 | 1.4 | 97.1 | 0.3 | 0.8 |
| Mizoram | 605 | - | 0.3 | 97.3 | 1.9 | 0.4 |
| Nagaland | 600 | - | 0.2 | 99.4 | 0.3 | 0.1 |

| Percentage distribution of identification of iodised salt across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Less than half Kg** | **Half Kg** | **1 Kg** | **5 Kg** | **Other** |
| Sikkim | 600 | - | 2.8 | 97.2 | - | - |
| Tripura | 608 | - | 1.2 | 58.9 | 9.9 | 30.0 |
| **West zone** | **3002** | **0.1** | **4.3** | **95.1** | **0.3** | **0.2** |
| Dadra & Nagar Haveli | 601 | - | 0.7 | 98.3 | 0.7 | 0.3 |
| Daman & Diu | 600 | - | 1.2 | 97.7 | 1.1 | - |
| Goa | 601 | - | 9.6 | 84.4 | 0.8 | 5.2 |
| Gujarat | 600 | - | 5.9 | 93.7 | 0.2 | 0.2 |
| Maharashtra | 600 | 0.2 | 3.3 | 96.1 | 0.3 | 0.1 |
| **South zone** | **4812** | **-** | **7.8** | **84.7** | **7.1** | **0.4** |
| Andaman & Nicobar Island | 600 | 1.7 | 2.5 | 86.5 | 0.3 | 9.1 |
| Andhra Pradesh | 600 | 0.1 | 4.9 | 94.6 | - | 0.4 |
| Karnataka | 601 | - | 13.9 | 62.5 | 23.0 | 0.5 |
| Kerala | 601 | - | 1.5 | 97.5 | 0.3 | 0.7 |
| Lakshadweep | 600 | - | 0.3 | 98.2 | 1.4 | - |
| Puducherry | 600 | 0.2 | 7.4 | 89.7 | 2.5 | 0.3 |
| Tamil Nadu | 610 | - | 9.3 | 89.1 | 1.3 | 0.3 |
| Telangana | 600 | - | 1.9 | 98.0 | 0.2 | - |

*Multiple responses

## TABLE 6.9: FREQUENCY OF PURCHASE OF SALT

| Mean distribution of frequency of purchase of salt across all India, type of residence, wealth quintile and states across all zones | | |
|---|---|---|
| | **Unweighted N** | **Average (number of days)** |
| Unweighted N | 21406 | 21406 |
| **All India** | **21406** | **24.3** |
| **Type of residence** | | |
| Rural | 13095 | 23.5 |
| Urban | 8311 | 25.7 |
| **Wealth quintile** | | |
| Lowest | 2692 | 20.2 |
| Second | 3657 | 23.1 |
| Middle | 4271 | 24.7 |
| Fourth | 5112 | 26.9 |
| Highest | 5674 | 26.7 |
| **North zone** | **3971** | **31.8** |
| Chandigarh | 600 | 25.7 |
| Delhi | 611 | 35.3 |
| Haryana | 601 | 26.9 |
| Himachal Pradesh | 600 | 28.7 |
| Jammu & Kashmir | 355 | 18.8 |
| Punjab | 600 | 27.5 |
| Rajasthan | 604 | 36.8 |
| **Central zone** | **2403** | **24.2** |
| Chhattisgarh | 600 | 19.8 |
| Madhya Pradesh | 603 | 28.3 |
| Uttarakhand | 600 | 27.0 |
| Uttar Pradesh | 600 | 22.9 |
| **East zone** | **2401** | **18.1** |
| Bihar | 600 | 15.6 |
| Jharkhand | 600 | 18.1 |
| Odisha | 601 | 15.4 |
| West Bengal | 600 | 22.0 |
| **North-East zone** | **4817** | **25.2** |
| Arunachal Pradesh | 603 | 26.2 |
| Assam | 601 | 21.3 |
| Manipur | 600 | 21.3 |
| Meghalaya | 600 | 45.7 |
| Mizoram | 605 | 30.0 |
| Nagaland | 600 | 36.2 |
| Sikkim | 600 | 33.8 |
| Tripura | 608 | 28.7 |

| Mean distribution of frequency of purchase of salt across all India, type of residence, wealth quintile and states across all zones | | |
|---|---|---|
| | **Unweighted N** | **Average (number of days)** |
| **West zone** | **3002** | **22.7** |
| Dadra & Nagar Haveli | 601 | 31.7 |
| Daman & Diu | 600 | 30.5 |
| Goa | 601 | 22.7 |
| Gujarat | 600 | 26.7 |
| Maharashtra | 600 | 20.3 |
| **South zone** | **4812** | **26.4** |
| Andaman & Nicobar Island | 600 | 30.3 |
| Andhra Pradesh | 600 | 23.6 |
| Karnataka | 601 | 23.5 |
| Kerala | 601 | 34.3 |
| Lakshadweep | 600 | 35.2 |
| Puducherry | 600 | 25.3 |
| Tamil Nadu | 610 | 27.3 |
| Telangana | 600 | 27.2 |

## TABLE 6.10: PERCEPTION ABOUT THE QUALITY OF COOKING SALT USED

| Percentage distribution of perception of the quality of cooking salt used across all India, type of residence, wealth quintile and states across all zones | | | | |
|---|---|---|---|---|
| | **Unweighted N** | **Good** | **Average** | **Poor** |
| Unweighted N | 21406 | 17473 | 3880 | 53 |
| **All India** | **21406** | **79.3** | **20.4** | **0.3** |
| **Type of residence** | | | | |
| Rural | 13095 | 78.2 | 21.5 | 0.3 |
| Urban | 8311 | 81.1 | 18.6 | 0.3 |
| **Wealth quintile** | | | | |
| Lowest | 2692 | 77.8 | 22.0 | 0.2 |
| Second | 3657 | 79.3 | 20.2 | 0.5 |
| Middle | 4271 | 77.9 | 21.9 | 0.1 |
| Fourth | 5112 | 80.8 | 19.0 | 0.2 |
| Highest | 5674 | 80.6 | 19.0 | 0.4 |
| **North zone** | **3971** | **84.8** | **15.0** | **0.2** |
| Chandigarh | 600 | 97.6 | 2.4 | - |
| Delhi | 611 | 81.2 | 18.8 | 0.1 |
| Haryana | 601 | 80.1 | 19.8 | 0.1 |
| Himachal Pradesh | 600 | 85.7 | 14.3 | - |
| Jammu & Kashmir | 355 | 61.6 | 35.8 | 2.6 |
| Punjab | 600 | 83.5 | 16.5 | - |
| Rajasthan | 604 | 91.4 | 8.6 | - |
| **Central zone** | **2403** | **81.4** | **18.5** | **0.1** |
| Chhattisgarh | 600 | 88.1 | 11.8 | 0.1 |
| Madhya Pradesh | 603 | 91.4 | 8.4 | 0.2 |
| Uttarakhand | 600 | 93.4 | 6.5 | 0.1 |
| Uttar Pradesh | 600 | 74.8 | 25.2 | - |
| **East zone** | **2401** | **87.6** | **12.4** | **0.1** |
| Bihar | 600 | 88.3 | 11.5 | 0.2 |
| Jharkhand | 600 | 83.2 | 16.8 | - |
| Odisha | 601 | 80.3 | 19.7 | - |
| West Bengal | 600 | 91.8 | 8.2 | - |
| **North-East zone** | **4817** | **76.5** | **23.2** | **0.3** |
| Arunachal Pradesh | 603 | 77.8 | 22.0 | 0.1 |
| Assam | 601 | 73.8 | 25.9 | 0.3 |
| Manipur | 600 | 85.6 | 14.4 | - |
| Meghalaya | 600 | 81.7 | 18.3 | - |
| Mizoram | 605 | 94.0 | 5.9 | 0.2 |
| Nagaland | 600 | 70.9 | 28.9 | 0.3 |

| Percentage distribution of perception of the quality of cooking salt used across all India, type of residence, wealth quintile and states across all zones | | | | |
|---|---|---|---|---|
| | **Unweighted N** | **Good** | **Average** | **Poor** |
| Sikkim | 600 | 98.3 | 1.7 | - |
| Tripura | 608 | 79.4 | 20.3 | 0.3 |
| **West zone** | **3002** | **89.1** | **10.7** | **0.1** |
| Dadra & Nagar Haveli | 601 | 95.4 | 4.6 | - |
| Daman & Diu | 600 | 91.6 | 8.4 | - |
| Goa | 601 | 96.3 | 3.7 | - |
| Gujarat | 600 | 87.3 | 12.7 | - |
| Maharashtra | 600 | 90.1 | 9.7 | 0.2 |
| **South zone** | **4812** | **61.6** | **37.6** | **0.8** |
| Andaman & Nicobar Island | 600 | 86.9 | 13.1 | - |
| Andhra Pradesh | 600 | 74.0 | 24.7 | 1.3 |
| Karnataka | 601 | 47.2 | 52.6 | 0.2 |
| Kerala | 601 | 60.7 | 39.2 | 0.1 |
| Lakshadweep | 600 | 59.4 | 40.6 | - |
| Puducherry | 600 | 76.3 | 23.7 | - |
| Tamil Nadu | 610 | 76.7 | 22.8 | 0.5 |
| Telangana | 600 | 47.8 | 50.0 | 2.2 |

## TABLE 6.11: MEDIAN PRICE PAID FOR THE LAST PURCHASE OF 1 KG OF SALT

| Median price paid for 1 Kg of salt by type of residence, wealth quintile and states across all zones | | |
|---|---|---|
| | **Unweighted N** | **Median amount (in Indian Rupee)** |
| Unweighted N | 21406 | 21406 |
| **All India** | **21406** | **10.0** |
| **Type of residence** | | |
| Rural | 13095 | 10.0 |
| Urban | 8311 | 15.0 |
| **Wealth quintile** | | |
| Lowest | 2692 | 10.0 |
| Second | 3657 | 10.0 |
| Middle | 4271 | 10.0 |
| Fourth | 5112 | 14.0 |
| Highest | 5674 | 18.0 |
| **North zone** | **3971** | **16.8** |
| Chandigarh | 600 | 19.0 |
| Delhi | 611 | 19.0 |
| Haryana | 601 | 18.0 |
| Himachal Pradesh | 600 | 18.0 |
| Jammu & Kashmir | 355 | 20.0 |
| Punjab | 600 | 19.0 |
| Rajasthan | 604 | 17.0 |
| **Central zone** | **2403** | **11.0** |
| Chhattisgarh | 600 | 10.0 |
| Madhya Pradesh | 603 | 10.0 |
| Uttar Pradesh | 600 | 10.0 |
| Uttarakhand | 600 | 18.0 |
| **East zone** | **2401** | **10.0** |
| Bihar | 600 | 10.0 |
| Jharkhand | 600 | 10.0 |
| Odisha | 601 | 10.0 |
| West Bengal | 600 | 10.0 |
| **North-East zone** | **4817** | **10.0** |
| Arunachal Pradesh | 603 | 18.0 |
| Assam | 601 | 10.0 |
| Manipur | 600 | 20.0 |
| Meghalaya | 600 | 15.0 |
| Mizoram | 605 | 25.0 |
| Nagaland | 600 | 10.0 |

| Median price paid for 1 Kg of salt by type of residence, wealth quintile and states across all zones | | |
|---|---|---|
| | **Unweighted N** | **Median amount (in Indian Rupee)** |
| Sikkim | 600 | 15.0 |
| Tripura | 608 | 10.0 |
| **West zone** | **3002** | **12.0** |
| Dadra & Nagar Haveli | 601 | 15.0 |
| Daman & Diu | 600 | 18.0 |
| Goa | 601 | 15.0 |
| Gujarat | 600 | 12.0 |
| Maharashtra | 600 | 15.0 |
| **South zone** | **4812** | **12.0** |
| Andaman & Nicobar Island | 600 | 17.0 |
| Andhra Pradesh | 600 | 15.0 |
| Karnataka | 601 | 10.0 |
| Kerala | 601 | 15.0 |
| Lakshadweep | 600 | 18.0 |
| Puducherry | 600 | 18.0 |
| Tamil Nadu | 610 | 10.0 |
| Telangana | 600 | 18.0 |

## TABLE 6.12: WILLING TO PAY FOR BETTER QUALITY OF COOKING SALT

| Percentage distribution of willing to pay for better quality of cooking salt across all India, type of residence, wealth quintile and states across all zones | | | | |
|---|---|---|---|---|
| | **Unweighted N** | **Yes** | **No** | **Don't know** |
| Unweighted N | 21406 | 13353 | 5636 | 2417 |
| **All India** | **21406** | **63.4** | **22.7** | **14.0** |
| **Type of residence** | | | | |
| Rural | 13095 | 62.7 | 22.0 | 15.3 |
| Urban | 8311 | 64.5 | 23.7 | 11.8 |
| **Wealth quintile** | | | | |
| Lowest | 2692 | 61.6 | 19.1 | 19.3 |
| Second | 3657 | 65.7 | 18.7 | 15.6 |
| Middle | 4271 | 60.1 | 25.0 | 14.9 |
| Fourth | 5112 | 61.3 | 26.4 | 12.3 |
| Highest | 5674 | 68.1 | 24.0 | 7.9 |
| **North zone** | **3971** | **67.0** | **25.3** | **7.8** |
| Chandigarh | 600 | 81.6 | 12.8 | 5.6 |
| Delhi | 611 | 41.9 | 41.6 | 16.5 |
| Haryana | 601 | 92.5 | 3.8 | 3.7 |
| Himachal Pradesh | 600 | 59.9 | 34.4 | 5.7 |
| Jammu & Kashmir | 355 | 29.1 | 53.9 | 17.0 |
| Punjab | 600 | 52.5 | 44.0 | 3.5 |
| Rajasthan | 604 | 76.0 | 16.1 | 7.9 |
| **Central zone** | **2403** | **67.2** | **20.4** | **12.4** |
| Chhattisgarh | 600 | 57.4 | 36.9 | 5.7 |
| Madhya Pradesh | 603 | 71.6 | 23.6 | 4.8 |
| Uttarakhand | 600 | 85.6 | 12.3 | 2.1 |
| Uttar Pradesh | 600 | 66.0 | 16.2 | 17.8 |
| **East zone** | **2401** | **81.6** | **9.8** | **8.6** |
| Bihar | 600 | 89.1 | 3.2 | 7.7 |
| Jharkhand | 600 | 70.3 | 12.5 | 17.2 |
| Odisha | 601 | 97.0 | 1.4 | 1.6 |
| West Bengal | 600 | 70.8 | 19.6 | 9.6 |
| **North-East zone** | **4817** | **54.6** | **25.2** | **20.2** |
| Arunachal Pradesh | 603 | 72.1 | 23.2 | 4.8 |
| Assam | 601 | 51.0 | 24.1 | 24.9 |
| Manipur | 600 | 59.8 | 25.8 | 14.5 |
| Meghalaya | 600 | 51.1 | 43.9 | 5.0 |
| Mizoram | 605 | 53.3 | 19.7 | 27.0 |
| Nagaland | 600 | 31.8 | 39.5 | 28.7 |

| Percentage distribution of willing to pay for better quality of cooking salt across all India, type of residence, wealth quintile and states across all zones | | | | |
|---|---|---|---|---|
| | **Unweighted N** | **Yes** | **No** | **Don't know** |
| Sikkim | 600 | 87.3 | 12.1 | 0.6 |
| Tripura | 608 | 80.8 | 14.8 | 4.4 |
| **West zone** | **3002** | **49.6** | **32.5** | **17.9** |
| Dadra & Nagar Haveli | 601 | 56.7 | 33.6 | 9.7 |
| Daman & Diu | 600 | 47.1 | 51.5 | 1.4 |
| Goa | 601 | 40.9 | 45.7 | 13.4 |
| Gujarat | 600 | 66.7 | 26.0 | 7.3 |
| Maharashtra | 600 | 39.3 | 36.2 | 24.5 |
| **South zone** | **4812** | **53.8** | **26.7** | **19.5** |
| Andaman & Nicobar Island | 600 | 60.3 | 25.7 | 14.0 |
| Andhra Pradesh | 600 | 43.7 | 39.5 | 16.9 |
| Karnataka | 601 | 25.2 | 25.9 | 48.8 |
| Kerala | 601 | 65.7 | 22.3 | 12.0 |
| Lakshadweep | 600 | 69.5 | 10.9 | 19.6 |
| Puducherry | 600 | 57.7 | 41.0 | 1.2 |
| Tamil Nadu | 610 | 93.3 | 5.6 | 1.1 |
| Telangana | 600 | 38.6 | 56.0 | 5.4 |

## TABLE 6.13: DECISION MAKER OF SALT TO BE PURCHASED IN HOUSEHOLD

| Per cent distribution of decision maker of salt to be purchased in household across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | Unweighted N | Head of Household | Spouse of the Head of Household | Other Adult (>18 years | | Children (<18 years) |
| | | | | Male member | Female member | |
| Unweighted N | 21406 | 9829 | 9265 | 1110 | 1126 | 76 |
| **All India** | **21406** | **51.8** | **36.4** | **5.6** | **5.7** | **0.5** |
| **Type of residence** | | | | | | |
| Rural | 13095 | 51.6 | 35.8 | 5.9 | 6.0 | 0.7 |
| Urban | 8311 | 52.1 | 37.3 | 5.0 | 5.4 | 0.2 |
| **Wealth quintile** | | | | | | |
| Lowest | 2692 | 49.8 | 39 | 3.7 | 6.7 | 0.8 |
| Second | 3657 | 50.9 | 35.6 | 6.6 | 6.2 | 0.6 |
| Middle | 4271 | 52.6 | 36.6 | 5.2 | 5.0 | 0.6 |
| Fourth | 5112 | 54.1 | 34.8 | 5.8 | 4.8 | 0.4 |
| Highest | 5674 | 51.4 | 36.0 | 6.6 | 5.9 | 0.2 |
| **North zone** | **3971** | **61.0** | **26.2** | **9.8** | **2.1** | **0.9** |
| Chandigarh | 600 | 28.5 | 54.4 | 10.2 | 5.2 | 1.7 |
| Delhi | 611 | 52.0 | 39.1 | 7.4 | 1.6 | - |
| Haryana | 601 | 44.7 | 34.2 | 11.1 | 5.3 | 4.7 |
| Himachal Pradesh | 600 | 58.9 | 34 | 4.7 | 2.4 | - |
| Jammu & Kashmir | 355 | 76.6 | 16.2 | 4.8 | 2.4 | - |
| Punjab | 600 | 60.5 | 22.8 | 14.9 | 1.8 | 0.1 |
| Rajasthan | 604 | 67.3 | 22.4 | 9.2 | 1.0 | 0.2 |
| **Central** | **2403** | **43.0** | **38.4** | **8.7** | **8.7** | **1.2** |
| Chhattisgarh | 600 | 56.2 | 38.4 | 3.1 | 2.1 | 0.2 |
| Madhya Pradesh | 603 | 38.3 | 38.0 | 8.2 | 15.4 | - |
| Uttarakhand | 600 | 34.3 | 44.6 | 5.8 | 15.2 | 0.1 |
| Uttar Pradesh | 600 | 43.1 | 38.1 | 10.3 | 6.4 | 2.1 |
| **East zone** | **2401** | **50.3** | **35.8** | **4.6** | **8.9** | **0.4** |
| Bihar | 600 | 31.1 | 51.2 | 3.3 | 13.5 | 0.8 |
| Jharkhand | 600 | 44.4 | 44.5 | 3.6 | 7.3 | 0.1 |
| Odisha | 601 | 34.0 | 47.8 | 6.6 | 11.2 | 0.5 |
| West Bengal | 600 | 79.9 | 11.0 | 5.5 | 3.5 | 0.1 |
| **North-East zone** | **4817** | **54.2** | **30.7** | **9.1** | **5.9** | **0.1** |
| Arunachal Pradesh | 603 | 51.6 | 33.9 | 11.0 | 3.5 | - |
| Assam | 601 | 63.0 | 18.8 | 12.2 | 5.9 | 0.2 |
| Manipur | 600 | 19.0 | 56.9 | 5.1 | 18.9 | - |
| Meghalaya | 600 | 36.7 | 61.0 | 0.7 | 1.3 | 0.3 |
| Mizoram | 605 | 11.4 | 84.7 | 1.2 | 2.8 | - |
| Nagaland | 600 | 12.8 | 85.6 | 0.6 | 1.0 | - |

| Per cent distribution of decision maker of salt to be purchased in household across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | Unweighted N | Head of Household | Spouse of the Head of Household | Other Adult (>18 years | | Children (<18 years) |
| | | | | Male member | Female member | |
| Sikkim | 600 | 67.4 | 32.1 | 0.2 | 0.4 | - |
| Tripura | 608 | 62.9 | 26.0 | 4.4 | 6.5 | 0.1 |
| **West zone** | **3002** | **68.8** | **23.8** | **2.2** | **4.9** | **0.2** |
| Dadra & Nagar Haveli | 601 | 22.9 | 75.9 | 0.5 | 0.6 | - |
| Daman & Diu | 600 | 32.9 | 62.5 | 1.8 | 2.8 | - |
| Goa | 601 | 42.9 | 55.0 | 0.7 | 1.3 | 0.1 |
| Gujarat | 600 | 49.0 | 39.4 | 2.1 | 9.5 | - |
| Maharashtra | 600 | 81.6 | 13.5 | 2.4 | 2.2 | 0.3 |
| **South zone** | **4812** | **44.0** | **50.0** | **2.8** | **3.2** | **0.1** |
| Andaman & Nicobar Island | 600 | 62.4 | 19.3 | 13.7 | 4.6 | - |
| Andhra Pradesh | 600 | 28.0 | 70.7 | 0.9 | 0.1 | 0.2 |
| Karnataka | 601 | 72.2 | 26.3 | 1.3 | 0.2 | - |
| Kerala | 601 | 52.6 | 27.1 | 12.0 | 8.1 | 0.1 |
| Lakshadweep | 600 | 81.3 | 10.3 | 2.9 | 5.5 | - |
| Puducherry | 600 | 9.7 | 86 | 1.2 | 3.1 | - |
| Tamil Nadu | 610 | 24.3 | 66.1 | 2.2 | 7.5 | - |
| Telangana | 600 | 36.9 | 61.3 | 1.3 | 0.3 | 0.2 |

HoH: Head of Household

## TABLE 6.14: BUYER OF SALT FOR THE HOUSEHOLD

| Per cent distribution of buyer of salt for the household across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | Unweighted N | Head of Household | Spouse of the Head of Household | Other Adult (>18 years | | Children (<18 years) |
| | | | | Male member | Female member | |
| Unweighted N | 21406 | 10507 | 7957 | 1697 | 915 | 330 |
| **All India** | **21406** | **56.7** | **28.6** | **7.7** | **4.4** | **2.6** |
| **Type of residence** | | | | | | |
| Rural | 13095 | 58.9 | 25.5 | 8.1 | 4.1 | 3.4 |
| Urban | 8311 | 53.3 | 33.6 | 7.1 | 4.8 | 1.2 |
| **Wealth quintile** | | | | | | |
| Lowest | 2692 | 56.8 | 27.4 | 6.4 | 4.3 | 5.1 |
| Second | 3657 | 57.1 | 26.8 | 7.4 | 5.4 | 3.2 |
| Middle | 4271 | 57.5 | 29.4 | 6.7 | 4.3 | 2.1 |
| Fourth | 5112 | 56.0 | 31.0 | 7.7 | 4.0 | 1.3 |
| Highest | 5674 | 56.3 | 28.4 | 10.2 | 3.9 | 1.2 |
| **North zone** | **3971** | **59.1** | **23.9** | **13.5** | **2.1** | **1.5** |
| Chandigarh | 600 | 40.6 | 32.7 | 14.1 | 2.9 | 9.6 |
| Delhi | 611 | 43.6 | 33.2 | 17.9 | 3.9 | 1.3 |
| Haryana | 601 | 37.6 | 33.1 | 17.9 | 4.4 | 7.0 |
| Himachal Pradesh | 600 | 54.2 | 35.2 | 7.3 | 2.8 | 0.5 |
| Jammu & Kashmir | 355 | 84.7 | 3.0 | 11.6 | 0.5 | 0.2 |
| Punjab | 600 | 59.3 | 19.6 | 19.4 | 1.1 | 0.7 |
| Rajasthan | 604 | 68.2 | 22.4 | 8.9 | 0.5 | - |
| **Central zone** | **2403** | **54.8** | **23.8** | **13.2** | **1.7** | **1.5** |
| Chhattisgarh | 600 | 51.8 | 39.3 | 4.5 | 4.4 | - |
| Madhya Pradesh | 603 | 55.6 | 14.0 | 18.5 | 7.3 | 4.6 |
| Uttarakhand | 600 | 46.8 | 24.3 | 18.4 | 9.1 | 1.4 |
| Uttar Pradesh | 600 | 53.9 | 24.0 | 11.5 | 3.4 | 7.2 |
| **East zone** | **2401** | **53.9** | **23.1** | **12.8** | **4.8** | **5.5** |
| Bihar | 600 | 33.2 | 38.7 | 5.8 | 9.9 | 12.4 |
| Jharkhand | 600 | 45.5 | 34.9 | 9.0 | 5.2 | 5.4 |
| Odisha | 601 | 59.4 | 18.3 | 13.4 | 7.8 | 1.1 |
| West Bengal | 600 | 77.4 | 10.6 | 6.6 | 4.6 | 0.7 |
| **North-East zone** | **4817** | **61.0** | **23.9** | **10.6** | **4.3** | **0.2** |
| Arunachal Pradesh | 603 | 55.0 | 27.2 | 15.4 | 2.3 | 0.1 |
| Assam | 601 | 71.2 | 11.0 | 14.0 | 3.6 | 0.2 |
| Manipur | 600 | 13.8 | 58.3 | 2.7 | 24.4 | 0.9 |
| Meghalaya | 600 | 37.5 | 60.4 | 0.7 | 1.0 | 0.4 |
| Mizoram | 605 | 10.6 | 84.9 | 2.2 | 2.2 | - |
| Nagaland | 600 | 8.9 | 88.0 | 0.1 | 2.7 | 0.3 |

| Per cent distribution of buyer of salt for the household across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | Unweighted N | Head of Household | Spouse of the Head of Household | Other Adult (>18 years | | Children (<18 years) |
| | | | | Male member | Female member | |
| Sikkim | 600 | 61.8 | 37.3 | 0.5 | 0.4 | - |
| Tripura | 608 | 81.9 | 8.4 | 7.7 | 2.1 | - |
| **West zone** | **3002** | **66.0** | **26.4** | **2.5** | **4.9** | **0.1** |
| Dadra & Nagar Haveli | 601 | 21.6 | 76.9 | 0.2 | 1.3 | - |
| Daman & Diu | 600 | 27.8 | 65.7 | 2.2 | 4.2 | - |
| Goa | 601 | 40.1 | 57.2 | 1.4 | 1.3 | - |
| Gujarat | 600 | 34.8 | 52.9 | 1.6 | 10.7 | - |
| Maharashtra | 600 | 85.8 | 9.5 | 3.1 | 1.4 | 0.2 |
| **South zone** | **4812** | **52.6** | **41.3** | **3.1** | **3.0** | **0.1** |
| Andaman & Nicobar Island | 600 | 67.8 | 9.9 | 19.4 | 2.9 | - |
| Andhra Pradesh | 600 | 44.1 | 55.3 | - | 0.5 | 0.1 |
| Karnataka | 601 | 76.2 | 22.2 | 1.5 | 0.1 | - |
| Kerala | 601 | 52.6 | 25.2 | 15.9 | 6.2 | 0.1 |
| Lakshadweep | 600 | 81.3 | 5.5 | 9.5 | 3.6 | - |
| Puducherry | 600 | 12.1 | 84.3 | 0.8 | 2.9 | - |
| Tamil Nadu | 610 | 28.7 | 61.3 | 2.0 | 7.8 | 0.3 |
| Telangana | 600 | 61.2 | 38.0 | 0.8 | - | - |

HoH: Head of Household

## TABLE 6.15: PERCEPTION THAT IODISED SALT DOES TASTE DIFFERENT

| Percentage distribution of perception that iodised salt does tastes different across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 3971 | 4977 | 1833 | 2366 | 969 |
| **All India** | **14116** | **33.7** | **33.2** | **12.0** | **15.6** | **5.5** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 35.7 | 34.1 | 11.8 | 13.8 | 4.6 |
| Urban | 5862 | 31.2 | 32.0 | 12.3 | 17.9 | 6.7 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 35.5 | 30.2 | 22.1 | 6.7 | 5.5 |
| Second | 2098 | 31.4 | 35.4 | 13.9 | 13.8 | 5.5 |
| Middle | 2643 | 31.8 | 37.7 | 12.2 | 14.3 | 3.9 |
| Fourth | 3805 | 33.8 | 31.6 | 11.9 | 17.1 | 5.6 |
| Highest | 4539 | 35.5 | 31.5 | 6.3 | 20.3 | 6.4 |
| **North zone** | **2447** | **45.7** | **39.5** | **7.6** | **5.2** | **2.0** |
| Chandigarh | 451 | 59.3 | 26.0 | 7.0 | 7.8 | - |
| Delhi | 218 | 36.1 | 58.3 | 5.0 | - | 0.6 |
| Haryana | 211 | 20.9 | 67.6 | 9.3 | 2.1 | - |
| Himachal Pradesh | 501 | 64.9 | 31.6 | 1.2 | 1.5 | 0.8 |
| Jammu & Kashmir | 48 | (64.8) | (35.2) | - | - | - |
| Punjab | 498 | 60.1 | 37.4 | 0.7 | 1.0 | 0.7 |
| Rajasthan | 520 | 42.0 | 35.4 | 11.2 | 8.2 | 3.2 |
| **Central zone** | **1637** | **45.8** | **31.4** | **14.0** | **5.3** | **3.5** |
| Chhattisgarh | 450 | 39.7 | 48.9 | 6.8 | 4.1 | 0.5 |
| Madhya Pradesh | 283 | 35.4 | 30.3 | 15.3 | 10.4 | 8.6 |
| Uttarakhand | 564 | 63.4 | 27.0 | 2.9 | 2.7 | 4.0 |
| Uttar Pradesh | 340 | 49.6 | 27.8 | 16.4 | 4.0 | 2.3 |
| **East zone** | **1098** | **39.8** | **36.2** | **6.4** | **8.6** | **8.9** |
| Bihar | 235 | 46.8 | 21.5 | 5.4 | 4.3 | 22.1 |
| Jharkhand | 319 | 29.4 | 35.8 | 7.4 | 13.5 | 13.8 |
| Odisha | 213 | 45.1 | 48.5 | 2.5 | 3.6 | 0.3 |
| West Bengal | 331 | 36.9 | 43.6 | 8.0 | 11.5 | - |
| **North-East zone** | **3569** | **6.1** | **35.0** | **17.2** | **41.1** | **0.6** |
| Arunachal Pradesh | 562 | 24.7 | 28.8 | 14.5 | 22.4 | 9.6 |
| Assam | 311 | 2.3 | 24.7 | 13.9 | 58.9 | 0.3 |
| Manipur | 553 | 5.3 | 45.0 | 29.5 | 19.1 | 1.1 |
| Meghalaya | 431 | 0.9 | 40.2 | 45.5 | 13.3 | - |
| Mizoram | 563 | 1.5 | 68.8 | 1.7 | 27.8 | 0.2 |
| Nagaland | 336 | 0.2 | 58.9 | 27.5 | 13.3 | - |

| Percentage distribution of perception that iodised salt does tastes different across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Sikkim | 497 | 69.2 | 29.2 | - | 1.4 | 0.2 |
| Tripura | 316 | 21.8 | 61.3 | 4.9 | 12.0 | - |
| **West zone** | **2315** | **31.5** | **27.6** | **18.0** | **9.0** | **13.9** |
| Dadra & Nagar Haveli | 538 | 19.8 | 50.7 | 3.2 | 14.1 | 12.3 |
| Daman & Diu | 527 | 2.5 | 16.6 | 2.4 | 31.4 | 47.2 |
| Goa | 536 | 0.5 | 7.9 | 46.2 | 18.7 | 26.7 |
| Gujarat | 500 | 46.2 | 16.5 | 8.6 | 13.8 | 15.0 |
| Maharashtra | 214 | 13.6 | 42.8 | 29.6 | 2.1 | 11.9 |
| **South zone** | **3050** | **15.4** | **32.0** | **12.0** | **38.3** | **2.3** |
| Andaman & Nicobar Island | 525 | 33.8 | 49.9 | 5.0 | 11.1 | 0.1 |
| Andhra Pradesh | 113 | 13.4 | 51.1 | 0.7 | 34.7 | - |
| Karnataka | 313 | 6.4 | 30.4 | 25.1 | 37.4 | 0.6 |
| Kerala | 487 | 24.9 | 39.2 | 12.5 | 22.2 | 1.2 |
| Lakshadweep | 539 | 4.3 | 6.5 | 42.5 | 39.7 | 7.1 |
| Puducherry | 443 | 7.7 | 15.3 | 40.2 | 26.0 | 10.9 |
| Tamil Nadu | 369 | 16.5 | 23.8 | 6.5 | 47.8 | 5.5 |
| Telangana | 261 | 19.8 | 36.6 | - | 43.0 | 0.6 |

## TABLE 6.16: PERCEPTION THAT IODINE CHANGE COLOUR, ODOUR OR TASTE

| Percentage distribution of perception that iodine does change colour, odour or taste across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 2337 | 4760 | 2598 | 3398 | 1023 |
| **All India** | **14116** | **19.6** | **32.5** | **20.0** | **21.1** | **6.8** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 19.5 | 33.8 | 22.4 | 18.5 | 5.8 |
| Urban | 5862 | 19.7 | 31.0 | 16.8 | 24.4 | 8.1 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 19.9 | 28.3 | 30.7 | 15.5 | 5.6 |
| Second | 2098 | 15.8 | 34.0 | 22.3 | 21.5 | 6.4 |
| Middle | 2643 | 18.6 | 31.8 | 24.0 | 18.7 | 6.9 |
| Fourth | 3805 | 20.4 | 33.1 | 18.5 | 21.0 | 7.0 |
| Highest | 4539 | 21.8 | 33.5 | 12.2 | 25.1 | 7.4 |
| **North zone** | **2447** | **22.5** | **44.4** | **21.6** | **7.5** | **4.0** |
| Chandigarh | 451 | 46.7 | 30.2 | 10.6 | 12.2 | 0.3 |
| Delhi | 218 | 28.3 | 52.3 | 10.8 | 8.6 | - |
| Haryana | 211 | 16.6 | 68.6 | 11.7 | 3.1 | - |
| Himachal Pradesh | 501 | 25.4 | 59.3 | 5.8 | 6.8 | 2.7 |
| Jammu & Kashmir | 48 | (36.5) | (46.8) | (12.4) | (2.2) | (2.1) |
| Punjab | 498 | 28.2 | 41.1 | 17.9 | 5.0 | 7.8 |
| Rajasthan | 520 | 19.6 | 40.0 | 27.6 | 9.2 | 3.6 |
| **Central zone** | **1637** | **22.3** | **37.4** | **25.7** | **10.6** | **4.0** |
| Chhattisgarh | 450 | 22.1 | 48.9 | 19.1 | 6.4 | 3.6 |
| Madhya Pradesh | 283 | 24.1 | 29.1 | 21.3 | 16.6 | 8.8 |
| Uttarakhand | 564 | 37.1 | 32.5 | 14.3 | 10.4 | 5.7 |
| Uttar Pradesh | 340 | 20.2 | 38.0 | 30.1 | 9.5 | 2.2 |
| **East zone** | **1098** | **24.9** | **29.0** | **13.0** | **23.5** | **9.6** |
| Bihar | 235 | 26.0 | 17.2 | 23.5 | 10.6 | 22.8 |
| Jharkhand | 319 | 8.7 | 22.8 | 18.2 | 34.5 | 15.8 |
| Odisha | 213 | 33.0 | 52.2 | 7.1 | 7.4 | 0.3 |
| West Bengal | 331 | 27.7 | 33.1 | 5.0 | 33.6 | 0.5 |
| **North-East zone** | **3569** | **4.6** | **24.6** | **26.5** | **43.7** | **0.6** |
| Arunachal Pradesh | 562 | 19.5 | 24.3 | 23.3 | 29.6 | 3.4 |
| Assam | 311 | 2.2 | 14.7 | 24.4 | 58.0 | 0.6 |
| Manipur | 553 | 1.3 | 38.5 | 35.0 | 24.1 | 1.1 |
| Meghalaya | 431 | 0.9 | 20.1 | 55.6 | 23.4 | - |
| Mizoram | 563 | 0.8 | 51.2 | 5.9 | 41.9 | 0.2 |
| Nagaland | 336 | - | 56.5 | 28.6 | 14.5 | 0.4 |

| Percentage distribution of perception that iodine does change colour, odour or taste across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Sikkim | 497 | 58.6 | 29.6 | 0.9 | 10.9 | - |
| Tripura | 316 | 14.3 | 49.3 | 18.6 | 17.8 | - |
| **West zone** | **2315** | **28.8** | **24.4** | **16.0** | **13.6** | **17.2** |
| Dadra & Nagar Haveli | 538 | 2.3 | 41.6 | 3.6 | 25.8 | 26.7 |
| Daman & Diu | 527 | 1.5 | 13.4 | 3.0 | 39.3 | 42.8 |
| Goa | 536 | 1.0 | 7.2 | 25.3 | 59.7 | 6.9 |
| Gujarat | 500 | 41.9 | 14.0 | 8.4 | 14.1 | 21.5 |
| Maharashtra | 214 | 12.9 | 38.6 | 25.9 | 10.8 | 11.7 |
| **South zone** | **3050** | **7.0** | **29.1** | **19.8** | **40.7** | **3.3** |
| Andaman & Nicobar Island | 525 | 22.5 | 45.1 | 12.4 | 18.5 | 1.5 |
| Andhra Pradesh | 113 | 8.9 | 33.2 | 4.3 | 53.6 | - |
| Karnataka | 313 | 3.4 | 27.4 | 47.5 | 20.1 | 1.6 |
| Kerala | 487 | 11.5 | 39.3 | 17.6 | 30.2 | 1.4 |
| Lakshadweep | 539 | 0.3 | 6.1 | 39.2 | 40.7 | 13.7 |
| Puducherry | 443 | 5.1 | 21.0 | 39.2 | 25.5 | 9.2 |
| Tamil Nadu | 369 | 8.5 | 20.2 | 6.7 | 57.1 | 7.5 |
| Telangana | 261 | 3.8 | 39.0 | 1.1 | 55.5 | 0.7 |

## TABLE 6.17: PERCEPTION THAT ALL PACKAGED SALTS ARE IODISED

| Percentage distribution of perception that all packaged salts are iodised different across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 1410 | 2992 | 2826 | 5184 | 1704 |
| **All India** | **14116** | **12.3** | **21.3** | **21.5** | **31.8** | **13.1** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 12.5 | 21.7 | 23.5 | 30.5 | 11.8 |
| Urban | 5862 | 12.0 | 20.9 | 18.9 | 33.5 | 14.8 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 11.7 | 19.5 | 28.8 | 30.0 | 10.0 |
| Second | 2098 | 9.8 | 18.9 | 25.5 | 31.9 | 13.9 |
| Middle | 2643 | 11.9 | 21.8 | 22.6 | 30.8 | 12.9 |
| Fourth | 3805 | 15.8 | 22.8 | 17.0 | 31.5 | 12.9 |
| Highest | 4539 | 11.4 | 22.1 | 18.6 | 33.5 | 14.4 |
| **North zone** | **2447** | **24.4** | **29.5** | **26.5** | **25.9** | **3.8** |
| Chandigarh | 451 | 13.0 | 16.0 | 20.3 | 40.7 | 10.0 |
| Delhi | 218 | 22.3 | 36.0 | 8.6 | 26.1 | 7.0 |
| Haryana | 211 | 20.3 | 53.2 | 15.6 | 9.0 | 2.0 |
| Himachal Pradesh | 501 | 17.7 | 22.9 | 21.7 | 28.5 | 9.2 |
| Jammu & Kashmir | 48 | (27.2) | (38.1) | (10.6) | (4.8) | (19.3) |
| Punjab | 498 | 23.2 | 14.8 | 29.1 | 29.0 | 3.9 |
| Rajasthan | 520 | 26.4 | 32.0 | 29.7 | 9.1 | 2.8 |
| **Central zone** | **1637** | **8.2** | **15.2** | **35.3** | **22.4** | **18.8** |
| Chhattisgarh | 450 | 7.7 | 30.3 | 26.2 | 32.5 | 3.2 |
| Madhya Pradesh | 283 | 13.9 | 15.9 | 15.3 | 27.9 | 27.0 |
| Uttarakhand | 564 | 18.1 | 17.0 | 7.2 | 38.2 | 19.5 |
| Uttar Pradesh | 340 | 5.3 | 11.0 | 47.8 | 16.2 | 19.8 |
| **East zone** | **1098** | **13.3** | **20.4** | **14.7** | **31.4** | **20.2** |
| Bihar | 235 | 30.3 | 18.9 | 16.5 | 15.5 | 18.8 |
| Jharkhand | 319 | 7.0 | 19.2 | 9.2 | 35.5 | 29.1 |
| Odisha | 213 | 2.1 | 4.9 | 3.0 | 41.0 | 49.0 |
| West Bengal | 331 | 6.4 | 26.5 | 18.8 | 38.7 | 9.6 |
| **North-East zone** | **3569** | **4.5** | **31.5** | **20.0** | **41.1** | **2.8** |
| Arunachal Pradesh | 562 | 22.0 | 26.8 | 25.3 | 24.7 | 1.2 |
| Assam | 311 | 3.4 | 34.4 | 18.4 | 42.3 | 1.5 |
| Manipur | 553 | 0.5 | 35.7 | 26.0 | 35.9 | 1.9 |
| Meghalaya | 431 | 0.8 | 16.1 | 38.3 | 35.0 | 9.9 |
| Mizoram | 563 | - | 48.6 | 10.5 | 40.9 | - |
| Nagaland | 336 | 1.0 | 4.9 | 6.5 | 73.6 | 13.9 |

| Percentage distribution of perception that all packaged salts are iodised different across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Sikkim | 497 | 13.8 | 7.4 | 36.4 | 41.6 | 0.7 |
| Tripura | 316 | 14.7 | 34.8 | 11.2 | 36.6 | 2.7 |
| **West zone** | **2315** | **14.7** | **17.8** | **18.4** | **30.8** | **18.3** |
| Dadra & Nagar Haveli | 538 | 2.3 | 23.4 | 19.0 | 29.3 | 26.0 |
| Daman & Diu | 527 | 3.8 | 5.8 | 4.5 | 46.2 | 39.7 |
| Goa | 536 | 0.3 | 7.4 | 37.1 | 45.7 | 9.5 |
| Gujarat | 500 | 18.4 | 8.0 | 9.4 | 41.5 | 22.7 |
| Maharashtra | 214 | 10.7 | 31.1 | 29.8 | 15.9 | 12.6 |
| **South zone** | **3050** | **6.5** | **22.9** | **11.7** | **51.7** | **7.2** |
| Andaman & Nicobar Island | 525 | 3.6 | 24.2 | 10.0 | 46.0 | 16.2 |
| Andhra Pradesh | 113 | 6.9 | 29.2 | 4.0 | 59.0 | 0.9 |
| Karnataka | 313 | 2.7 | 29.7 | 29.1 | 37.5 | 1.0 |
| Kerala | 487 | 12.1 | 32.8 | 12.1 | 41.0 | 2.1 |
| Lakshadweep | 539 | 1.5 | 4.9 | 29.6 | 47.9 | 16.1 |
| Puducherry | 443 | 5.5 | 16.4 | 36.0 | 31.6 | 10.5 |
| Tamil Nadu | 369 | 5.4 | 8.8 | 0.8 | 66.6 | 18.4 |
| Telangana | 261 | 9.6 | 26.1 | 2.2 | 59.4 | 2.7 |

## TABLE 6.18: PERCEPTION THAT REFINED IODISED SALT IS UNHEALTHY

| Percentage distribution of perception that refined iodised salt is unhealthy across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 1244 | 2803 | 3270 | 5007 | 1792 |
| **All India** | **14116** | **11.7** | **19.0** | **21.2** | **33.4** | **14.7** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 11.6 | 20.3 | 22.9 | 32.1 | 13.2 |
| Urban | 5862 | 11.9 | 17.4 | 19.0 | 35.1 | 16.6 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 14.5 | 18.3 | 30.3 | 25.4 | 11.5 |
| Second | 2098 | 10.1 | 17.4 | 24.1 | 36.3 | 12.2 |
| Middle | 2643 | 11.1 | 19.4 | 22.3 | 33.4 | 13.7 |
| Fourth | 3805 | 12.1 | 20.4 | 20.0 | 32.8 | 14.7 |
| Highest | 4539 | 11.6 | 18.9 | 15.4 | 35.6 | 18.4 |
| **North zone** | **2447** | **14.0** | **34.5** | **26.8** | **11.8** | **12.9** |
| Chandigarh | 451 | 24.0 | 11.7 | 22.8 | 37.4 | 4.1 |
| Delhi | 218 | 11.4 | 35.8 | 15.4 | 37.0 | 0.4 |
| Haryana | 211 | 12.0 | 55.3 | 18.7 | 7.7 | 6.3 |
| Himachal Pradesh | 501 | 11.2 | 17.0 | 23.2 | 19.3 | 29.4 |
| Jammu & Kashmir | 48 | (29.6) | (49.0) | (13.2) | (6.0) | (2.1) |
| Punjab | 498 | 20.2 | 16.1 | 12.5 | 11.3 | 39.9 |
| Rajasthan | 520 | 11.9 | 40.5 | 35.6 | 9.0 | 3.0 |
| **Central zone** | **1637** | **9.6** | **18.1** | **30.1** | **25.2** | **17.0** |
| Chhattisgarh | 450 | 12.4 | 37.0 | 23.8 | 20.7 | 6.1 |
| Madhya Pradesh | 283 | 10.8 | 16.7 | 17.2 | 26.2 | 29.1 |
| Uttarakhand | 564 | 16.9 | 27.8 | 9.1 | 30.8 | 15.5 |
| Uttar Pradesh | 340 | 7.8 | 12.8 | 38.5 | 25.5 | 15.5 |
| **East zone** | **1098** | **10.4** | **13.3** | **16.2** | **37.1** | **23.0** |
| Bihar | 235 | 23.0 | 17.2 | 17.4 | 10.2 | 32.3 |
| Jharkhand | 319 | 10.7 | 22.1 | 16.6 | 25.4 | 25.3 |
| Odisha | 213 | 8.4 | 14.1 | 1.1 | 36.4 | 40.0 |
| West Bengal | 331 | 1.7 | 7.0 | 19.6 | 61.3 | 10.4 |
| **North-East zone** | **3569** | **3.2** | **17.6** | **29.5** | **47.3** | **2.4** |
| Arunachal Pradesh | 562 | 19.1 | 13.5 | 23.8 | 31.5 | 12.1 |
| Assam | 311 | 2.2 | 15.3 | 27.5 | 53.0 | 2.1 |
| Manipur | 553 | 0.7 | 16.4 | 27.3 | 53.3 | 2.4 |
| Meghalaya | 431 | 0.3 | 10.9 | 52.9 | 35.6 | 0.3 |
| Mizoram | 563 | 0.2 | 58.9 | 13.5 | 27.2 | 0.1 |
| Nagaland | 336 | 0.3 | 8.1 | 63.9 | 27.3 | 0.4 |

| Percentage distribution of perception that refined iodised salt is unhealthy across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Sikkim | 497 | 1.4 | 2.9 | 41.4 | 51.5 | 2.8 |
| Tripura | 316 | 11.2 | 28.3 | 12.7 | 43.2 | 4.6 |
| **West zone** | **2315** | **23.5** | **10.7** | **15.9** | **28.0** | **21.8** |
| Dadra & Nagar Haveli | 538 | 3.8 | 38.5 | 4.7 | 30.4 | 22.6 |
| Daman & Diu | 527 | 3.2 | 13.6 | 4.6 | 40.9 | 37.7 |
| Goa | 536 | 0.7 | 1.8 | 33.2 | 53.7 | 10.6 |
| Gujarat | 500 | 36.3 | 6.4 | 6.7 | 24.1 | 26.6 |
| Maharashtra | 214 | 7.9 | 16.4 | 27.7 | 32.2 | 15.9 |
| **South zone** | **3050** | **6.3** | **19.2** | **14.3** | **55.4** | **4.8** |
| Andaman & Nicobar Island | 525 | 2.4 | 8.3 | 26.3 | 58.5 | 4.5 |
| Andhra Pradesh | 113 | 8.3 | 31.8 | 4.9 | 54.5 | 0.5 |
| Karnataka | 313 | 2.9 | 19.7 | 35.8 | 38.7 | 2.9 |
| Kerala | 487 | 12.1 | 19.1 | 7.7 | 57.6 | 3.4 |
| Lakshadweep | 539 | 0.1 | 7.5 | 32.9 | 44.2 | 15.3 |
| Puducherry | 443 | 3.0 | 16.5 | 56.2 | 14.0 | 10.4 |
| Tamil Nadu | 369 | 5.7 | 11.3 | 4.7 | 68.8 | 9.5 |
| Telangana | 261 | 5.8 | 33.0 | 1.9 | 58.4 | 0.9 |

## TABLE 6.19: PERCEPTION THAT AVAILABILITY OF IODINE IN OUR NORMAL DIET IS NOT SUFFICIENT AND IODISED SALT IS REQUIRED

| Percentage distribution of perception that availability of iodine in our normal diet is not sufficient and iodised salt is required across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 3049 | 5683 | 3001 | 1899 | 484 |
| **All India** | **14116** | **27.0** | **39.3** | **16.9** | **12.6** | **4.2** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 26.8 | 39.4 | 17.8 | 12.1 | 3.8 |
| Urban | 5862 | 27.3 | 39.0 | 15.6 | 13.3 | 4.7 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 28.1 | 33.0 | 24.6 | 11.7 | 2.4 |
| Second | 2098 | 25.7 | 37.0 | 18.5 | 13.5 | 5.2 |
| Middle | 2643 | 27.0 | 41.8 | 16.6 | 10.9 | 3.8 |
| Fourth | 3805 | 25.8 | 42.5 | 15.3 | 11.8 | 4.7 |
| Highest | 4539 | 28.4 | 39.1 | 13.8 | 14.4 | 4.3 |
| **North zone** | **2447** | **31.9** | **44.6** | **17.4** | **5.1** | **1.0** |
| Chandigarh | 451 | 49.9 | 38.1 | 11.2 | 0.7 | - |
| Delhi | 218 | 40.0 | 51.2 | 5.5 | 3.4 | - |
| Haryana | 211 | 44.2 | 42.9 | 12.1 | 0.7 | - |
| Himachal Pradesh | 501 | 38.5 | 48.2 | 7.3 | 4.2 | 1.7 |
| Jammu & Kashmir | 48 | (27.4) | (50.9) | (19.6) | (2.1) | - |
| Punjab | 498 | 38.4 | 51.0 | 8.6 | 0.6 | 1.4 |
| Rajasthan | 520 | 25.8 | 41.2 | 24.0 | 7.9 | 1.1 |
| **Central zone** | **1637** | **28.9** | **34.4** | **22.7** | **10.6** | **3.5** |
| Chhattisgarh | 450 | 26.4 | 49.5 | 18.8 | 4.4 | 1.0 |
| Madhya Pradesh | 283 | 54.2 | 32.9 | 8.6 | 3.1 | 1.0 |
| Uttarakhand | 564 | 31.2 | 25.8 | 16.1 | 24.6 | 2.4 |
| Uttar Pradesh | 340 | 20.0 | 31.8 | 29.5 | 13.6 | 5.1 |
| **East zone** | **1098** | **26.4** | **35.9** | **16.6** | **15.6** | **5.5** |
| Bihar | 235 | 48.5 | 23.7 | 6.5 | 5.3 | 15.9 |
| Jharkhand | 319 | 45.9 | 37.7 | 5.2 | 8.9 | 2.3 |
| Odisha | 213 | 19.0 | 57.4 | 18.8 | 4.5 | 0.3 |
| West Bengal | 331 | 5.1 | 38.0 | 27.6 | 28.7 | 0.6 |
| **North-East zone** | **3569** | **11.4** | **59.7** | **20.4** | **8.2** | **0.3** |
| Arunachal Pradesh | 562 | 29.1 | 44.9 | 23.8 | 1.5 | 0.8 |
| Assam | 311 | 14.5 | 74.1 | 7.3 | 4.0 | - |
| Manipur | 553 | 3.9 | 27.6 | 50.2 | 18.2 | 0.1 |
| Meghalaya | 431 | - | 25.1 | 62.7 | 11.9 | 0.3 |
| Mizoram | 563 | 0.2 | 57.2 | 15.7 | 26.9 | - |

| Percentage distribution of perception that availability of iodine in our normal diet is not sufficient and iodised salt is required across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Nagaland | 336 | 12.8 | 34.2 | 51.9 | 1.1 | - |
| Sikkim | 497 | 1.6 | 6.7 | 51.2 | 33.0 | 7.5 |
| Tripura | 316 | 10.4 | 65.3 | 10.5 | 12.4 | 1.4 |
| **West zone** | **2315** | **34.3** | **25.1** | **16.4** | **12.1** | **12.1** |
| Dadra & Nagar Haveli | 538 | 23.5 | 52.1 | 4.0 | 13.2 | 7.2 |
| Daman & Diu | 527 | 38.9 | 43.4 | 1.4 | 7.2 | 9.2 |
| Goa | 536 | 1.2 | 21.2 | 38.4 | 31.5 | 7.7 |
| Gujarat | 500 | 51.2 | 18.8 | 7.0 | 9.1 | 13.9 |
| Maharashtra | 214 | 13.3 | 33.2 | 28.2 | 15.3 | 9.9 |
| **South zone** | **3050** | **19.7** | **49.2** | **10.7** | **19.1** | **1.4** |
| Andaman & Nicobar Island | 525 | 16.1 | 52.1 | 23.1 | 8.2 | 0.5 |
| Andhra Pradesh | 113 | 18.6 | 53.0 | 6.3 | 21.1 | 0.9 |
| Karnataka | 313 | 6.7 | 60.3 | 21.5 | 10.7 | 0.7 |
| Kerala | 487 | 15.4 | 54.4 | 8.9 | 19.9 | 1.5 |
| Lakshadweep | 539 | 2.3 | 38.4 | 19.8 | 29.0 | 10.5 |
| Puducherry | 443 | 9.0 | 27.7 | 52.6 | 5.8 | 5.0 |
| Tamil Nadu | 369 | 36.7 | 40.0 | 5.3 | 16.5 | 1.6 |
| Telangana | 261 | 13.3 | 39.0 | 2.2 | 43.2 | 2.4 |

( ) Based on 25-49 unweighted cases

## TABLE 6.20: PERCEPTION THAT CONSUMPTION OF IODISED SALT IS RELATED TO NORMAL GROWTH OF FOETUS IN PREGNANT WOMEN

| Percentage distribution of perception that consumption of iodised salt is related to normal growth of foetus in pregnant women across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 4134 | 6462 | 2084 | 1158 | 278 |
| **All India** | **14116** | **34.0** | **41.3** | **13.9** | **9.0** | **1.8** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 32.0 | 41.5 | 15.9 | 8.9 | 1.7 |
| Urban | 5862 | 36.7 | 40.9 | 11.3 | 9.1 | 2.0 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 31.0 | 33.4 | 24.7 | 9.4 | 1.5 |
| Second | 2098 | 30.1 | 40.6 | 18.0 | 9.9 | 1.3 |
| Middle | 2643 | 31.8 | 43.6 | 14.2 | 8.8 | 1.5 |
| Fourth | 3805 | 35.1 | 43.8 | 11.6 | 7.2 | 2.3 |
| Highest | 4539 | 38.4 | 41.5 | 8.2 | 9.8 | 2.1 |
| **North zone** | **2447** | **33.1** | **42.0** | **20.1** | **3.8** | **1.0** |
| Chandigarh | 451 | 56.8 | 29.6 | 12.5 | 0.8 | 0.3 |
| Delhi | 218 | 43.5 | 51.6 | 3.8 | 0.8 | 0.3 |
| Haryana | 211 | 44.7 | 36.7 | 14.3 | 4.3 | - |
| Himachal Pradesh | 501 | 50.3 | 37.6 | 9.3 | 2.5 | 0.3 |
| Jammu & Kashmir | 48 | (30.3) | (56.6) | (13.1) | - | - |
| Punjab | 498 | 63.6 | 25.4 | 8.9 | 0.3 | 1.8 |
| Rajasthan | 520 | 16.1 | 48.9 | 28.3 | 5.7 | 1.0 |
| **Central zone** | **1637** | **38.8** | **36.1** | **17.7** | **6.7** | **0.8** |
| Chhattisgarh | 450 | 26.1 | 51.1 | 18.3 | 4.5 | - |
| Madhya Pradesh | 283 | 62.2 | 28.2 | 6.6 | 2.7 | 0.2 |
| Uttarakhand | 564 | 51.0 | 34.4 | 3.2 | 11.2 | 0.2 |
| Uttar Pradesh | 340 | 32.1 | 35.4 | 23.1 | 8.2 | 1.3 |
| **East zone** | **1098** | **37.8** | **33.0** | **11.5** | **12.5** | **5.1** |
| Bihar | 235 | 41.1 | 20.3 | 19.5 | 3.3 | 15.8 |
| Jharkhand | 319 | 48.1 | 37.2 | 4.7 | 8.0 | 2.0 |
| Odisha | 213 | 47.4 | 51.0 | 1.4 | 0.3 | - |
| West Bengal | 331 | 28.8 | 35.6 | 11.2 | 24.4 | - |
| **North-East zone** | **3569** | **15.5** | **63.4** | **16.2** | **4.8** | **-** |
| Arunachal Pradesh | 562 | 31.4 | 44.3 | 22.9 | 1.0 | 0.4 |
| Assam | 311 | 18.6 | 71.6 | 6.6 | 3.2 | - |
| Manipur | 553 | 3.8 | 41.1 | 37.9 | 17.0 | 0.1 |
| Meghalaya | 431 | 0.5 | 29.5 | 62.1 | 7.9 | - |

| Percentage distribution of perception that consumption of iodised salt is related to normal growth of foetus in pregnant women across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Mizoram | 563 | 0.2 | 81.2 | 11.1 | 7.5 | - |
| Nagaland | 336 | 8.3 | 76.8 | 14.9 | - | - |
| Sikkim | 497 | 67.7 | 17.4 | 11.3 | 3.3 | 0.2 |
| Tripura | 316 | 16.9 | 69.9 | 10.8 | 2.4 | - |
| **West zone** | **2315** | **39.8** | **35.0** | **12.7** | **9.7** | **2.8** |
| Dadra & Nagar Haveli | 538 | 23.9 | 61.5 | 1.4 | 8.3 | 4.8 |
| Daman & Diu | 527 | 48.1 | 41.9 | 2.3 | 3.7 | 4.1 |
| Goa | 536 | 1.6 | 31.7 | 29.3 | 30.2 | 7.2 |
| Gujarat | 500 | 62.1 | 21.2 | 3.5 | 9.2 | 4.0 |
| Maharashtra | 214 | 11.9 | 53.1 | 24.3 | 9.5 | 1.1 |
| **South zone** | **3050** | **26.5** | **52.2** | **7.9** | **12.6** | **0.7** |
| Andaman & Nicobar Island | 525 | 23.7 | 65.5 | 8.7 | 1.7 | 0.3 |
| Andhra Pradesh | 113 | 7.7 | 72.1 | 6.6 | 13.6 | - |
| Karnataka | 313 | 20.8 | 50.1 | 18.5 | 10.1 | 0.4 |
| Kerala | 487 | 15.5 | 65.5 | 7.0 | 11.5 | 0.4 |
| Lakshadweep | 539 | 1.6 | 39.3 | 20.8 | 22.2 | 16.1 |
| Puducherry | 443 | 17.1 | 55.2 | 24.6 | 1.3 | 1.8 |
| Tamil Nadu | 369 | 46.7 | 45.9 | 1.8 | 5.3 | 0.3 |
| Telangana | 261 | 14.4 | 42.7 | 0.8 | 39.1 | 3.0 |

( ) Based on 25-49 unweighted cases

## TABLE 6.21: PERCEPTION THAT APPEARANCE CANNOT MEAN IT IS A GOOD QUALITY SALT

| Percentage distribution of perception that appearance cannot mean it is a good quality salt across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 2314 | 5049 | 2969 | 2978 | 806 |
| **All India** | **14116** | **19.0** | **32.8** | **21.9** | **19.9** | **6.4** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 18.1 | 31.2 | 24.0 | 19.8 | 6.8 |
| Urban | 5862 | 20.2 | 34.9 | 19.1 | 19.9 | 5.9 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 19.6 | 21.1 | 33.4 | 19.2 | 6.7 |
| Second | 2098 | 16.4 | 30.7 | 24.9 | 21.5 | 6.5 |
| Middle | 2643 | 18.6 | 34.3 | 20.9 | 19.5 | 6.7 |
| Fourth | 3805 | 21.6 | 34.8 | 20.1 | 17.6 | 5.9 |
| Highest | 4539 | 18.5 | 36.8 | 16.8 | 21.4 | 6.5 |
| **North zone** | **2447** | **23.3** | **29.3** | **33.6** | **12.0** | **1.7** |
| Chandigarh | 451 | 21.8 | 28.0 | 26.2 | 21.9 | 2.1 |
| Delhi | 218 | 32.7 | 43.0 | 14.8 | 8.7 | 0.8 |
| Haryana | 211 | 29.9 | 47.1 | 13.0 | 9.3 | 0.7 |
| Himachal Pradesh | 501 | 21.7 | 16.7 | 31.4 | 25.0 | 5.1 |
| Jammu & Kashmir | 48 | (16.0) | (68.6) | (13.2) | - | (2.1) |
| Punjab | 498 | 21.6 | 20.1 | 28.3 | 25.2 | 4.8 |
| Rajasthan | 520 | 22.4 | 29.6 | 41.5 | 6.3 | 0.2 |
| **Central zone** | **1637** | **13.1** | **25.8** | **31.9** | **16.8** | **12.4** |
| Chhattisgarh | 450 | 7.9 | 33.1 | 29.7 | 25.9 | 3.4 |
| Madhya Pradesh | 283 | 17.4 | 23.9 | 14.0 | 21.5 | 23.2 |
| Uttarakhand | 564 | 31.0 | 12.2 | 13.5 | 38.9 | 4.4 |
| Uttar Pradesh | 340 | 11.1 | 25.9 | 40.9 | 10.6 | 11.5 |
| **East zone** | **1098** | **15.5** | **23.2** | **19.7** | **30.5** | **11.1** |
| Bihar | 235 | 25.1 | 19.1 | 29.1 | 11.8 | 14.9 |
| Jharkhand | 319 | 19.7 | 25.1 | 17.6 | 28.7 | 8.9 |
| Odisha | 213 | 9.1 | 23.4 | 0.5 | 31.5 | 35.5 |
| West Bengal | 331 | 8.7 | 25.4 | 19.2 | 44.6 | 2.1 |
| **North-East zone** | **3569** | **11.0** | **43.6** | **17.7** | **27.2** | **0.5** |
| Arunachal Pradesh | 562 | 24.4 | 45.1 | 18.8 | 11.5 | 0.3 |
| Assam | 311 | 11.4 | 38.5 | 15.2 | 34.3 | 0.5 |
| Manipur | 553 | 4.0 | 46.8 | 28.0 | 20.6 | 0.6 |
| Meghalaya | 431 | 10.0 | 40.1 | 38.3 | 11.0 | 0.6 |
| Mizoram | 563 | 0.4 | 83.9 | 8.5 | 7.2 | - |
| Nagaland | 336 | 9.4 | 68.9 | 7.0 | 14.6 | 0.2 |

| Percentage distribution of perception that appearance cannot mean it is a good quality salt across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Sikkim | 497 | 14.4 | 13.1 | 33.6 | 38.5 | 0.4 |
| Tripura | 316 | 16.3 | 48.4 | 8.9 | 25.5 | 0.9 |
| **West zone** | **2315** | **29.2** | **31.6** | **15.1** | **17.6** | **6.4** |
| Dadra & Nagar Haveli | 538 | 8.8 | 22.6 | 23.9 | 22.2 | 22.5 |
| Daman & Diu | 527 | 35.1 | 41.5 | 4.5 | 9.8 | 9.1 |
| Goa | 536 | 1.3 | 33.4 | 29.4 | 25.8 | 10.0 |
| Gujarat | 500 | 45.0 | 22.8 | 3.9 | 17.6 | 10.8 |
| Maharashtra | 214 | 9.6 | 43.2 | 29.4 | 17.4 | 0.4 |
| **South zone** | **3050** | **18.4** | **48.0** | **10.8** | **21.2** | **1.6** |
| Andaman & Nicobar Island | 525 | 20.8 | 37.9 | 10.0 | 26.2 | 5.2 |
| Andhra Pradesh | 113 | 5.5 | 76.4 | 0.9 | 17.2 | - |
| Karnataka | 313 | 2.6 | 41.2 | 28.2 | 26.7 | 1.3 |
| Kerala | 487 | 14.7 | 59.5 | 9.7 | 15.2 | 0.9 |
| Lakshadweep | 539 | 1.1 | 26.8 | 33.1 | 25.2 | 13.8 |
| Puducherry | 443 | 17.3 | 25.3 | 41.2 | 8.8 | 7.5 |
| Tamil Nadu | 369 | 38.9 | 45.0 | 1.0 | 13.0 | 2.0 |
| Telangana | 261 | 13.5 | 41.6 | 1.2 | 41.1 | 2.6 |

## TABLE 6.22: PERCEPTION THAT IODISATION OF SALT DRASTICALLY INCREASES THE COST

| Percentage distribution of perception that iodisation of salt drastically increases the cost across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 1900 | 4293 | 2958 | 3800 | 1165 |
| **All India** | **14116** | **18.8** | **31.8** | **18.3** | **23.7** | **7.4** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 18.4 | 31.5 | 20.6 | 22.8 | 6.6 |
| Urban | 5862 | 19.3 | 32.1 | 15.4 | 24.8 | 8.4 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 23.4 | 25.6 | 27.7 | 17.5 | 5.7 |
| Second | 2098 | 16.3 | 32.8 | 19.0 | 25.4 | 6.5 |
| Middle | 2643 | 18.8 | 30.8 | 19.7 | 24.5 | 6.2 |
| Fourth | 3805 | 18.3 | 33.1 | 17.9 | 23.3 | 7.4 |
| Highest | 4539 | 18.6 | 33.5 | 13.2 | 25.1 | 9.6 |
| **North zone** | **2447** | **19.3** | **32.9** | **25.2** | **14.8** | **7.8** |
| Chandigarh | 451 | 32.2 | 22.3 | 19.7 | 21.6 | 4.2 |
| Delhi | 218 | 15.1 | 39.8 | 10.8 | 32.4 | 2.0 |
| Haryana | 211 | 29.2 | 26.7 | 17.1 | 25.5 | 1.5 |
| Himachal Pradesh | 501 | 16.8 | 20.2 | 21.5 | 24.9 | 16.5 |
| Jammu & Kashmir | 48 | (20.7) | (63.5) | (9.0) | (6.8) | - |
| Punjab | 498 | 20.8 | 16.7 | 15.0 | 20.8 | 26.6 |
| Rajasthan | 520 | 17.7 | 40.4 | 32.6 | 8.1 | 1.1 |
| **Central zone** | **1637** | **26.5** | **33.9** | **21.1** | **14.0** | **4.6** |
| Chhattisgarh | 450 | 19.8 | 35.5 | 21.6 | 20.1 | 3.1 |
| Madhya Pradesh | 283 | 34.0 | 27.4 | 11.3 | 16.5 | 10.7 |
| Uttarakhand | 564 | 28.9 | 28.6 | 10.7 | 30.4 | 1.5 |
| Uttar Pradesh | 340 | 25.2 | 36.4 | 25.6 | 9.8 | 3.0 |
| **East zone** | **1098** | **17.1** | **22.8** | **11.6** | **34.7** | **13.8** |
| Bihar | 235 | 24.5 | 24.0 | 10.6 | 12.0 | 28.8 |
| Jharkhand | 319 | 18.6 | 38.8 | 11.2 | 19.5 | 12.0 |
| Odisha | 213 | 46.2 | 46.0 | 1.0 | 6.8 | - |
| West Bengal | 331 | 2.6 | 9.4 | 15.5 | 65.1 | 7.5 |
| **North-East zone** | **3569** | **7.1** | **32.4** | **20.4** | **38.5** | **1.5** |
| Arunachal Pradesh | 562 | 20.3 | 28.7 | 19.0 | 25.8 | 6.2 |
| Assam | 311 | 8.1 | 28.4 | 13.1 | 49.3 | 1.1 |
| Manipur | 553 | 7.5 | 33.5 | 34.9 | 24.0 | 0.1 |
| Meghalaya | 431 | 1.1 | 23.4 | 59.6 | 15.8 | 0.1 |
| Mizoram | 563 | - | 65.8 | 15.7 | 18.5 | - |
| Nagaland | 336 | 0.2 | 11.7 | 28.5 | 58.7 | 0.9 |

| Percentage distribution of perception that iodisation of salt drastically increases the cost across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Sikkim | 497 | 2.3 | 8.8 | 15.9 | 48.0 | 25.0 |
| Tripura | 316 | 8.9 | 66.2 | 13.4 | 11.0 | 0.5 |
| **West zone** | **2315** | **23.5** | **26.4** | **16.2** | **19.7** | **14.2** |
| Dadra & Nagar Haveli | 538 | 3.0 | 24.0 | 22.6 | 24.3 | 26.1 |
| Daman & Diu | 527 | 14.6 | 28.2 | 3.9 | 32.9 | 20.4 |
| Goa | 536 | 1.1 | 27.5 | 26.9 | 31.2 | 13.3 |
| Gujarat | 500 | 36.5 | 16.5 | 3.8 | 22.0 | 21.3 |
| Maharashtra | 214 | 7.3 | 39.5 | 32.2 | 16.1 | 4.8 |
| **South zone** | **3050** | **10.8** | **39.1** | **16.8** | **31.9** | **1.4** |
| Andaman & Nicobar Island | 525 | 2.9 | 30.3 | 23.9 | 41.3 | 1.6 |
| Andhra Pradesh | 113 | 5.6 | 64.0 | 5.1 | 25.4 | - |
| Karnataka | 313 | 2.0 | 24.3 | 32.2 | 41.3 | 0.2 |
| Kerala | 487 | 17.4 | 50.1 | 13.0 | 18.5 | 1.1 |
| Lakshadweep | 539 | 0.5 | 21.3 | 33.1 | 32.1 | 13.0 |
| Puducherry | 443 | 3.4 | 16.6 | 62.3 | 11.9 | 5.8 |
| Tamil Nadu | 369 | 15.0 | 35.1 | 13.2 | 34.0 | 2.8 |
| Telangana | 261 | 13.3 | 55.3 | 0.4 | 29.6 | 1.5 |

## TABLE 6.23: PERCEPTION THAT CONSUMPTION OF IODISED SALT LEADS TO DISEASES AND ILLNESS

| Percentage distribution of perception that consumption of iodised salt leads to diseases and illness across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Unweighted N | 14116 | 1276 | 2279 | 2427 | 5110 | 3024 |
| **All India** | **14116** | **11.9** | **17.1** | **16.8** | **33.1** | **21.1** |
| **Type of residence** | | | | | | |
| Rural | 8254 | 11.4 | 17.7 | 18.0 | 32.4 | 20.6 |
| Urban | 5862 | 12.5 | 16.4 | 15.3 | 33.9 | 21.9 |
| **Wealth quintile** | | | | | | |
| Lowest | 1031 | 9.1 | 11.8 | 29.2 | 30.0 | 19.9 |
| Second | 2098 | 11.1 | 16.9 | 17.5 | 35.2 | 19.4 |
| Middle | 2643 | 10.9 | 19.3 | 16.4 | 34.3 | 19.1 |
| Fourth | 3805 | 13.9 | 19.0 | 17.1 | 31.5 | 18.4 |
| Highest | 4539 | 12.6 | 16.6 | 10.8 | 33.5 | 26.5 |
| **North zone** | **2447** | **22.4** | **24.4** | **16.4** | **20.2** | **16.5** |
| Chandigarh | 451 | 14.8 | 11.3 | 17.8 | 24.0 | 32.1 |
| Delhi | 218 | 5.6 | 12.3 | 7.2 | 57.1 | 17.8 |
| Haryana | 211 | 23.0 | 23.8 | 14.7 | 27.1 | 11.5 |
| Himachal Pradesh | 501 | 17.0 | 6.3 | 14.3 | 17.7 | 44.6 |
| Jammu & Kashmir | 48 | (10.2) | (70.6) | (19.2) | - | - |
| Punjab | 498 | 22.4 | 10.5 | 7.9 | 9.1 | 50.2 |
| Rajasthan | 520 | 25.0 | 32.4 | 21.1 | 20.6 | 0.9 |
| **Central zone** | **1637** | **7.1** | **9.1** | **25.0** | **25.2** | **33.6** |
| Chhattisgarh | 450 | 6.7 | 22.8 | 20.3 | 40.9 | 9.3 |
| Madhya Pradesh | 283 | 4.8 | 9.5 | 8.0 | 22.9 | 54.8 |
| Uttarakhand | 564 | 1.0 | 4.5 | 21.6 | 40.1 | 32.8 |
| Uttar Pradesh | 340 | 8.7 | 5.9 | 32.9 | 20.6 | 32.0 |
| **East zone** | **1098** | **7.7** | **9.1** | **11.2** | **36.8** | **35.3** |
| Bihar | 235 | 21.7 | 19.9 | 8.9 | 10.0 | 39.5 |
| Jharkhand | 319 | 3.8 | 7.3 | 12.1 | 29.4 | 47.4 |
| Odisha | 213 | 2.0 | 1.7 | 3.0 | 28.5 | 64.8 |
| West Bengal | 331 | 0.5 | 4.1 | 14.9 | 61.5 | 19.1 |
| **North-East zone** | **3569** | **7.2** | **18.1** | **14.3** | **54.0** | **6.3** |
| Arunachal Pradesh | 562 | 20.3 | 18.4 | 19.2 | 30.5 | 11.5 |
| Assam | 311 | 9.1 | 12.4 | 7.4 | 64.9 | 6.3 |
| Manipur | 553 | 3.5 | 30.5 | 37.6 | 27.8 | 0.5 |
| Meghalaya | 431 | - | 9.9 | 44.8 | 43.0 | 2.3 |
| Mizoram | 563 | - | 69.9 | 7.6 | 22.0 | 0.5 |
| Nagaland | 336 | 0.5 | 8.9 | 5.0 | 70.0 | 15.7 |

| Percentage distribution of perception that consumption of iodised salt leads to diseases and illness across all India, type of residence, wealth quintile and states across all zones | | | | | | |
|---|---|---|---|---|---|---|
| | **Unweighted N** | **Strongly agree** | **Somewhat Agree** | **Neither agree nor disagree** | **Somewhat Disagree** | **Strongly disagree** |
| Sikkim | 497 | 1.2 | 1.1 | 18.2 | 51.9 | 27.6 |
| Tripura | 316 | 9.4 | 30.8 | 8.8 | 41.9 | 9.1 |
| **West zone** | **2315** | **9.4** | **17.5** | **15.1** | **34.2** | **23.7** |
| Dadra & Nagar Haveli | 538 | 5.5 | 4.2 | 22.1 | 30.0 | 38.2 |
| Daman & Diu | 527 | 18.3 | 5.3 | 2.9 | 35.1 | 38.5 |
| Goa | 536 | 0.1 | 2.1 | 23.3 | 34.6 | 39.8 |
| Gujarat | 500 | 15.2 | 8.2 | 2.0 | 41.8 | 32.9 |
| Maharashtra | 214 | 2.2 | 30.7 | 32.1 | 24.2 | 10.9 |
| **South zone** | **3050** | **14.5** | **25.1** | **14.7** | **42.7** | **3.0** |
| Andaman & Nicobar Island | 525 | 6.0 | 2.7 | 2.6 | 73.0 | 15.6 |
| Andhra Pradesh | 113 | 5.8 | 48.8 | 2.1 | 43.3 | - |
| Karnataka | 313 | 2.6 | 19.8 | 36.6 | 38.7 | 2.3 |
| Kerala | 487 | 15.5 | 20.0 | 10.4 | 51.8 | 2.3 |
| Lakshadweep | 539 | 0.6 | 11.5 | 23.8 | 50.9 | 13.2 |
| Puducherry | 443 | 5.1 | 13.6 | 56.1 | 19.5 | 5.6 |
| Tamil Nadu | 369 | 29.0 | 23.4 | 4.9 | 38.5 | 4.3 |
| Telangana | 261 | 8.2 | 38.1 | 0.8 | 49.7 | 3.2 |

( ) Based on 25-49 unweighted cases

CHAPTER – 7

# SUMMARY OF KEY FINDINGS & RECOMMENDATIONS

*According to the WHO guidelines, assessment of iodine status of the population is done based on two indicators, (i) iodine estimation in household edible salt through iodometric titration; and (ii) median urinary iodine concentration (UIC) of the population. The India Iodine Survey (IIS) 2018-19 indicates that the national household coverage of iodised salt (≥ 15 parts per million (ppm)) is 76.3 per cent and the median UIC of the non-pregnant non-lactating women, is 178 µg/L against the WHO recommended range of 100 -199 µg/L. The median UIC status of pregnant women (WHO recommended range :150 -249 µg/L) and lactating women (WHO recommended value: ≥ 100 µg/L) is 173.4 µg/L and 172.8 µg/L respectively. Thus, the three categories have adequate iodine intake as measured by urinary iodine concentration.*

## Achieving and sustaining USI

The national household coverage of iodised salt was 76.3 per cent with ≥15ppm iodine and varies from highest in Jammu and Kashmir (99.8%) to lowest in Tamil Nadu (61.9%). The state level data indicates that each of the states are at different levels of achieving USI. Considering that India is a big country with varying distribution channels and consumer preferences, efforts to improving household coverage warrants a contextual and state specific approach.

For the front runner states (states having highest coverage of iodised salt), effective enforcement and monitoring of salt should continue to be prioritized by the Food and Drug Control Administration (FDCA) to sustain the achievement. Additionally, the model of supply chain in these states should be studied for replication and adapted in aspirational states.

On the other hand, for the aspirational states (states having lowest coverage of iodised salt) a state specific strategy involving all stakeholders and convergence of all programs would be a better approach to move forward. Platforms such as Village Health Sanitation Nutrition Day (VHSND) and National Nutrition Mission, could be leveraged to promote consumption of iodised salt. Moreover, forums such as state level USI coalitions can be created to coordinate activities of all the stakeholders including salt industry, government departments, development partners and others at state level. Also, Civil Society partners such as agencies working on protection of consumer rights could be engaged in monitoring the availability of iodised salt at the retail end. They may act as a sustainable pressure group for industry as well as enforcement agency to ensure availability of iodised salt.

In addition, the National Iodine Deficiency Disorders Control Program (NIDDCP) guidelines requires revision to incorporate global evidence, current practices and preferences. Further, appropriate allocation of dedicated human and monetary resources, ensuring regular capacity building, and conducting periodic reviews to track various components to effectively implement these for sustaining the gains of the program.

## Recommendations

- *The State Government to develop a more contextual and state specific approach to improve coverage of iodised salt in their states to achieve and sustain USI.*
- *Food and Drug Control Administration (FDCA), at state level, to continue prioritizing enforcement and monitoring the quality of iodised salt samples.*
- *Development partners could assist the government in studying the supply chain established in the front runner states and develop a potentially replicable model for improving the coverage in aspirational states.*
- *The state governments could explore leveraging the existing health and nutrition platforms and programs like VHSND and National Nutrition Mission to deliver key messages to the community on benefits of consuming iodised salt.*
- *The Government of India to consider revision of the NIDDCP policy guidelines and allocate adequate and dedicated resources for effective program implementation.*
- *The Department of Consumer Affairs can consider including awareness generation on benefits of consuming iodised salt and monitoring of quality of iodised salt to consumer rights agencies or civil society organizations to effectively and sustainably ensure availability of adequately iodised salt to the population.*

# Periodic surveys to assess iodine status of the population

WHO recommends an IDD survey once in every five years. These surveys should include use of laboratory based iodometric titration as the 'gold standard' for estimation of iodine levels in edible salt and urinary iodine concentration as per the Sandell-Kolthoff reaction. The IIS 2018-19 is one of the few large-scale surveys which has used this method for estimating the iodine content in edible salt and urinary iodine concentration.

Along with estimating the coverage of adequately iodised salt at household level, WHO also recommends estimating the urinary iodine concentration (UIC) as a key biomarker for indication of iodine nutrition levels in the population.

These two indicators are essential to track the progress of the iodine status of the population. National level periodic surveys, like National Family Health Surveys (NFHS), serve as a ready platform to include the laboratory-based estimations as part of its protocol as well as median UIC for assessing the iodine nutrition status of the population.

## Recommendations

– *The Ministry of Health and Family Welfare (MOHFW), Government of India could consider including estimation of median UIC as an indicator to report the iodine status of the population along with household coverage of adequately iodised salt in NFHS. Also replace Spot Testing Kits (STKs) with laboratory based iodometric titration to estimate the iodine content in salt to provide more precise estimates.*


## Encourage production and consumption of refined edible salt

The study indicated that 82.1 per cent of the total salt samples collected was refined salt, 12.7 per cent crystal and remaining 5.3 per cent was crushed salt. It was observed that the iodisation levels in refined salt samples is better (82.6%) as compared to crystal salt (49.7%) and crushed salt (42.5%). The proportion of refined salt has been increasing over the years and efforts should be made to further improve and sustain this progress by encouraging salt processors to set up units to increase refined salt production with appropriate iodisation levels. In addition, freight benefits, quotas system and priority rake allotment for rail movement of salt, currently available to non-refined salt (crushed and crystal salt) should be withdrawn since this promotes consumption of crushed and crystal salt which is comparatively less adequately iodised. The production units for refined salt should be treated as a food processing unit and should be able to avail the same credits and tax benefits as those extended to the food industry.

Further, non-iodised crystal salt is sold under the declaration of 'Preservative salt' to consumers. This is often purchased by consumers belonging to low economic strata thereby, making them more vulnerable to IDD. There is a need to remove salt declared for 'preservative purpose' from the list of exempted categories for mandatory iodisation under the Food Safety and Standards Act, 2006. In addition, any retail salt packet which contains salt up to 2 Kgs should be considered as edible salt and mandatorily iodised irrespective of its label claim.

## Recommendations

- *Salt industry to invest in setting up units to increase production of refined salt.*
- *FSSAI to consider amending the Food Safety and Standards (Prohibition and Restrictions on Sales) Regulations, 2011 to remove salt used for preservation, from list of exception to mandatory iodisation.*
- *Railway department to discontinue freight benefits and quota system for priority rake allotment of non-refined crushed and crystal salt.*
- *Ministry of Food Processing may consider including refined salt under the definition of food processing industry to extend the credits and tax benefits as applicable to food processing industry.*

# Include and promote + F logo for iodised salt

Results from the study show that the 'Smiling Sun' logo, a voluntary quality assurance logo for Iodised salt is recognised by only 20.5 per cent of the respondents. Considering the low recognition and lack of regulation of the Smiling Sun logo usage, it is suggested that the +F logo, promoted by FSSAI as a quality assurance logo for fortified food staples, could be extended to iodised salt as well.

## Recommendations

- *FSSAI to extend the use of +F as a quality assurance logo for iodised salt and promote awareness on the logo amongst consumers.*

# Effective enforcement and monitoring of salt

The study indicates that 13 out of 36 states and UTs have achieved USI (>90%). Salt is currently categorized under the 'any other' food category of the Food Safety and Standards Act, 2006. Since, consumption of inadequately iodised salt does not result in any visible clinical manifestation neither it is fatal, often monitoring of iodised salt could be de-prioritized. Improving and sustaining the iodisation level needs prioritization. Additionally, Food Safety Officers under Food and Drug Control Administration should be sensitized to treat iodised salt as health product and prioritise it to effectively monitor and enforce.

Further, as more than 80 per cent of the edible salt is produced in 12 districts across the country, an intensive monitoring at the production end which is closely reviewed by the District Collector would go a long way in increasing iodisation level across the country.

## Recommendations

- *Food and Drug Control Administration (FDCA) to include iodised salt as one of the top 5 priority food items for enforcement.*
- *Development partners to support state FDCA department in building capacity of the Food Safety Officers (FSOs) to effectively monitor and enforce salt standards.*

# Additional studies required to assess consumption of iodine from other dietary sources

The median UIC for the six zones fall within the range of 154.2 to 213.6 µg/L for non-pregnant non-lactating women which is taken as a proxy for the population. Efforts should be made to understand the zonal variation and additional studies could be done to assess alternate sources of iodine in the diet, especially for infants, pregnant and lactating women who have special nutritional requirements.

## Recommendations

- *Additional studies to assess alternate sources of iodine in diet for suitable policy recommendations.*

# Mandate the use of iodised salt in processed foods

Over the years with changing food consumption patterns, there has been an increased consumption of processed food in the daily diet. Considering this, only iodised salt be used by the food processing industry.

## Recommendations

- *FSSAI to mandate use of only iodised salt for production of processed foods in India.*
- *Premium scientific organizations could conduct studies to landscape the salt intake through processed foods in India.*
- *Leverage electronic media to promote benefits of iodised salt*

Among half the respondents, 74.4 per cent reported electronic media (TV and radio) as the major source of information on IDD and iodised salt. Electronic media seems to be a potential medium to continue to disseminate key messages.

## Recommendations

- *The Government of India could leverage use of electronic media including TV and Radio to disseminate key messages on IDD and benefits of consuming iodised salt.*

# APPENDICES

## Appendix 1: Methodology for construction of Wealth Index

The wealth index was computed following the methodology of global demographic and health surveys. It followed the same methodology as NFHS-4, 20015-16 to determine the household's relative economic status. The wealth quintile was based on ownership of house and certain household infrastructure, assets, amenities, facilities and consumer durables and availability of bank account etc[1]. The information was collected using household questionnaire. Based on principal component analysis (PCA) technique, each variable was assigned a weight or factor loading. The value of asset score was combined to get the total asset score for each household. Thereafter, the households are ranked according to their individual Household Asset Score and divided into five quintiles at the national level.

Principal components analysis (PCA) method was used to assign the indicator weights, following the procedure that is used for the DHS wealth quintile. SPSS factor analysis procedure has been used for this purpose. Each of the categorical items considered for wealth quintile (such as type of water supply) is separated into dichotomous indicator variables (has, does not have), and together with continuous variables (such as number of persons per sleeping room) they are included in a principal components analysis (PCA).

- This procedure first standardizes the indicator variables (calculating z-scores);
- then the factor coefficient scores (factor loadings) are calculated;
- and finally, for each household, the indicator values are multiplied by the loadings and summed to produce the household's quintile value.
- In this process, only the first of the factors produced is used to represent the wealth quintile
- The resulting sum is itself a standardized score with a mean of zero and a standard deviation of one

In order to create wealth indices for both urban and rural areas, first three indices, a national quintile, an urban-specific quintile, and a rural-specific quintile were constructed. Then mappings (conversion adjustments) are made between the urban quintile and the national quintile, and between the rural quintile and the

*1. The wealth quintile is based on the following 40 assets and housing characteristics: availability of a separate kitchen for the household, type of flooring; material of exterior walls; type of roofing, ownership of the house, electrification of the household, ownership of a mattress, a pressure cooker, a chair, a cot/bed, a table, an electric fan, a radio/transistor, a black and white television, a colour television, a sewing machine, a mobile telephone, land line telephone, a desktop computer, internet, an Air conditioner/ cooler, a washing machine, a refrigerator, a watch or clock, a bicycle, a motorcycle or scooter, an animal-drawn cart, a car/jeep, a water pump, a thresher, and a tractor; drinking water source; location of the water source, type of toilet facility, main type of cooking fuel used , availability of bank account or post office account, domestic staff in the household, ownership of any livestock, ownership of any agricultural land and Mean number of persons per room used for sleeping*

national quintile. This mapping is necessary because, not only do the averages of the scores on the indices (from scores constructed to have their average as zero) represent different levels of wealth, but also the distributions of the scores of the indices (set so that the standard deviation is one) represent different dispersions of wealth.

Once the household scores have been calculated, the level and distribution adjustment values can be found by regressing the value of each household's area-specific quintile scores onto its national quintile score using linear regression.

National score for urban = urban constant + urban coefficient * urban score

National score for rural = rural constant + rural coefficient * rural score

Finally, a composite national quintile was constructed by using the estimated national wealth scores for the households in each region. The cut off points in the wealth quintile, to form the quintiles, are calculated by obtaining a weighted frequency distribution of households, the weight being the sampling weight of the household. The households are then ordered by the score, and the distribution is divided at the points that form the five 20 percent sections. In this process each member of a household also receives that household's quintile category.

# Appendix 2: Methodology for weighting

The basic objective of weighting the sample data is to make the sample representative in terms of size, distribution, and characteristics of the study population. When sample units have been selected with differing probabilities, it is common to weight the results inversely proportional to the unit selection probabilities, i.e., the design weight, to reflect the actual situation in the population.

In India Iodine Survey (IIS) 2018-19, the "multiplier" approach for weighting was used as is mostly used in large scale surveys. In this approach multipliers are computed for each stages of random sampling followed by the computation of the overall sampling probability.

The weighing calculation has been done as follows:

Step 1: PSU selection (W1)

The probability of selecting HH in a state was a product of probability of selecting a PSU in the state (f1) and probability of selecting a HH in the selected PSU ($f_2$)

$B=f_1*f_2$

PSU Factor
The probability of selecting a PSU (f1) has been calculated through following formula:

Where PSU Factor $f_1$= (a*pi)/$\sum$ pi
a = Number of household (HHs) in the ith selected PSU as per Census 2011
pi = Total PSU selected in ith selected stratum (rural / urban frame in the respective state/UT) as per census 2011
$\sum P_i$= Total number of HHs in the ith selected stratum as per census 2011

Step 2: Segmentation Factor (fs): In case of larger PSUs, where segmentation has been undertaken there was one more stage of selection namely segments. It has been calculated as follows:

fs = probability of selection of segments=sij/pk , where
sij =Total HHs listed in the one ($j_1$) segments
pk = Estimated number of HHs in the ith PSU as on the survey date (as per information provided by KI)

In PSUs with less than 150 HH, fs=1

Household Factor: The probability of selecting a HH in the selected category in each PSUs ($f_2$) is as follows:
$f_2$=ni /li
Where:
ni =Number of sampled HHs per category in in $i^{th}$ selected PSU
$l_i$ = Total number of eligible HHs as per listing listed for each category in the in $i^{th}$ selected PSU
Aggregate Factor
f=$f_1$*fs*$f_2$

The weight in i $^{th}$ PSU is
wi =1/ ($f_1$*fs*$f_2$)
Step 3: Adjust for differential response rates at PSU level:
At this stage, PSU level response rate has been calculated to take care of differential response rates across the PSUs in the region. Towards this the design weight is adjusted as follows:

Wi = wi /Ri; Where Ri is the response rate achieved in $i^{th}$ PSU.

$W_i$ is the weight attached with each sample household in the selected PSU

$$Response\ Rate\ (Ri) = \frac{Number.of\ HH\ covered\ in\ each\ category\ in\ ith\ PSU}{Number\ of\ sampled\ HH\ \ in\ each\ category\ in\ ith\ PSU}$$

Step 4: Normalization (adjusting for PPS selection method for PSUs) of weights for rural /urban strata at national level

The next step is to normalize weights. As the sample size was equal in all the state, hence it was imperative to normalize the weights at national level only (separately for rural and urban) to give the weight to state based on the size of their households.

The following formula was employed to normalize weights separately for rural and urban areas at national level:
$W_{hr} = (Wi*\sum ni) / (\sum Wi*n_i)$

$n_i$ = Number of HHs covered in each stratum ( rural/urban area) at national level;

Where $W_{hr}$ is the normalized weight for the rural sample. Similarly, $W_{hu}$ was computed for urban areas.

Similar exercise has been done separately for each household's category (PW/LW/NPNLW).

# Appendix 3: Protocol for testing of urine and salt at laboratory

The following steps were carried out for the purpose of testing iodine content in sample collected:

## For salt iodine content:

## Principle

The iodine content of iodate salt samples was measured using an iodometric titration, as described by DeMaeyer, Lowenstein, and Thilly, (1979). The reaction mechanism can be considered in two steps.

Reaction 1: Liberation of free Iodine from salt

1. Addition of $H_2SO_4$ liberates free iodine from the iodate in the salt sample.
2. Excess KI is added to help solubilise the free iodine, which is quite insoluble in pure water under normal conditions.

Reaction 2: Titration of free Iodine with thiosulfate.

1. Free iodine is consumed by sodium thiosulfate in the titration step. The amount of thiosulfate used is proportional to the amount of free iodine liberated from the salt.

2. Starch is added as an external (indirect) indicator of this reaction and reacts with free iodine to produce a purple colour. When added towards the end of the titration (that is, when only a trace amount of free iodine is left) the loss of purple colour, or endpoint, which occurs with further titration, indicates that all remaining free iodine has been consumed by thiosulfate.

**For testing iodine content in salt, Titration method was used in this study.**

**Reaction steps for iodometric titration of iodate**

1. $IO_3^-$ + $5I^-$ + $6H^+$ → $3I_2$ + $3H_2O$
   (from salt) (from KI) (from $H_2SO_4$)

2. $2NA_2S_2O_3$ + $I_2$ → $2NaI$ + $Na_2S_4O_6$
   (Sodium thiosulfate) (Iodin (Sodium iodide) (Sodium tetrathionate)

## Equipment

1. Pan Balance for weighing
2. Set of weights for above
3. Conical Flask with stopper volumetric - l00mL, 200 ml
4. Measuring cylinder - l0mL, 50 ml, l00mL
5. Beakers - 100, 200, 500 ml
6. Pipette, volumetric - 1ml, 5ml
7. Burette l0mL or 25 ml Auto Zero
8. Laboratory safety glasses
9. Parafilm
10. Glass bottles with stoppers for reagents – 100 ml,200ml,500mL
11. Funnel Glass or Plastic
12. Spatula
13. Dropper bottle 100ml/250 ml
14. Hot plate
15. Rod Stirring
16. Filter Paper-15cm diameter
17. 4L Polyethylene carboy for water storage
18. Hotplate with stirrer
19. Magnetic stirring bars

## Chemicals

1. Sodium Thiosulfate – $Na_2S_2O_3$, AR Grade
2. Sulfuric Acid concentrated – H2SO4 AR Grade
3. Potassium Iodide – KI AR Grade
4. Sodium Chloride – NaClAR Grade
5. Soluble starch
6. Boiled double-distilled water

## Reagent preparation

Water Requirements for Reagent Preparation: Water required for this method should be boiled, distilled water, which requires provision of a distillation unit.

0.005M Sodium Thiosulfate ($Na_2S_2O_3$):

1.24g $Na_2S_2O_3$ was dissolved in 1000 mL water and stored in a cool, dark place. This volume was sufficient for 100-200 samples, depending on the iodine content of samples (the solution is stable at least for two weeks, if stored properly).

2N Sulfuric acid ($H_2SO_4$):

6mL concentrated $H_2SO_4$ was slowly added to 90mL water. Make to l00 mL with water. This volume was sufficient for 100 samples (the solution is stable indefinitely).

**Note:** Always add acid to water, not water to acid, to avoid excess heat formation and spitting of acid. Stir solution while adding acid.

*10% Potassium iodide (KI):*
Dissolve l0g KI in 100mL water. Store in a cool, dark place. This volume was sufficient for 100 samples. (properly stored solution is stable for six months).

*Saturated Sodium Chloride (NaCl):*
l00 mL of a saturated NaCl solution was made by adding NaCl to approximately 80 mL water in a beaker, with stirring and/or heating, until no further solid was dissolved (this solution is stable for at least one year).

*Starch indicator solution:*
1g soluble starch was weighted into a l00 mL beaker, l0mL water was added and it was heated so that it dissolves. Saturated NaCl solution was added to the hot starch solution to make up to l00mL and stored in a cool, dark place. This volume was sufficient for 50 samples.

## Procedural Steps

Step 1 : Weigh 10g of the salt sample into a 100ml flask/50 ml measuring cylinder with a stopper

Step 2 : Add approximately 30mL water, swirl to dissolve salt sample

Step 3 : Add water to make volume up to 50mL

Step 4 : Add 1ml 2N $H_2SO_4$. (Caution - Do not pipette by mouth)

Step 5 : Add 1.0 mL 10% KI. The solution should turn yellow if iodine is present
(Caution - Do not pipette by mouth)

Step 6 : Stopper the flask and put in the dark (cupboard or drawer) for 10 minutes

Step 7 : Rinse and fill burette with 0.005M $Na_2S_20_3$, and adjust level to zero

Step 8 : Remove flask from drawer, and add some $Na_2S_20_3$ from the titration burette until solution turns pale yellow

Step 9 : Add approximately 2mL of starch indicator solution (the solution should turn dark purple) and continue titrating until the solution becomes pink, and finally colourless. (Colour sequence of titration is shown in flasks A, B, C and D

Stop 10 : Record the level of thiosulfate in the burette and convert to parts per million (ppm) using the conversion table

NOTE: Analysis time is approximately 20 minutes per sample.

**CONVERSION TABLE: IODINE CONTENT IN PARTS PER MILLION**

| Burette reading | Parts per million (ppm) | Burette reading | Parts per million (ppm) |
|---|---|---|---|
| 0.0 | 0.0 | 5.0 | 52.9 |
| 0.1 | 1.1 | 5.1 | 54.0 |
| 0.2 | 2.1 | 5.2 | 55.0 |
| 0.3 | 3.2 | 5.3 | 56.1 |
| 0.4 | 4.2 | 5.4 | 57.1 |
| 0.5 | 5.3 | 5.5 | 58.2 |
| 0.6 | 6.3 | 5.6 | 59.2 |
| 0.7 | 7.4 | 5.7 | 60.3 |
| 0.8 | 8.5 | 5.8 | 61.4 |
| 0.9 | 9.5 | 5.9 | 62.4 |
| 1.0 | 10.6 | 6.0 | 63.5 |
| 1.1 | 11.6 | 6.1 | 64.5 |
| 1.2 | 12.7 | 6.2 | 65.6 |
| 1.3 | 13.8 | 6.3 | 66.7 |
| 1.4 | 14.8 | 6.4 | 67.7 |
| 1.5 | 15.9 | 6.5 | 68.8 |
| 1.6 | 16.9 | 6.6 | 69.8 |
| 1.7 | 18.0 | 6.7 | 70.9 |
| 1.8 | 19.0 | 6.8 | 71.9 |
| 1.9 | 20.1 | 6.9 | 73.0 |

| Burette reading | Parts per million (ppm) | Burette reading | Parts per million (ppm) |
|---|---|---|---|
| 2.0 | 21.2 | 7.0 | 74.1 |
| 2.1 | 22.2 | 7.1 | 75.1 |
| 2.2 | 23.3 | 7.2 | 76.2 |
| 2.3 | 24.3 | 7.3 | 77.2 |
| 2.4 | 25.4 | 7.4 | 78.3 |
| 2.5 | 26.5 | 7.5 | 79.4 |
| 2.6 | 27.5 | 7.6 | 80.4 |
| 2.7 | 28.6 | 7.7 | 81.5 |
| 2.8 | 29.6 | 7.8 | 82.5 |
| 2.9 | 30.7 | 7.9 | 83.6 |
| 3.0 | 31.7 | 8.0 | 84.6 |
| 3.1 | 32.8 | 8.1 | 85.7 |
| 3.2 | 33.9 | 8.2 | 86.8 |
| 3.3 | 34.9 | 8.3 | 87.8 |
| 3.4 | 36.0 | 8.4 | 88.9 |
| 3.5 | 37.0 | 8.5 | 89.9 |
| 3.6 | 38.1 | 8.6 | 91.0 |
| 3.7 | 39.1 | 8.7 | 92.0 |
| 3.8 | 40.2 | 8.8 | 93.1 |
| 3.9 | 41.3 | 8.9 | 94.2 |
| 4.0 | 42.3 | 9.0 | 95.2 |
| 4.1 | 43.4 | 9.1 | 96.3 |
| 4.2 | 44.4 | 9.2 | 97.3 |
| 4.3 | 45.5 | 9.3 | 98.4 |
| 4.4 | 46.6 | 9.4 | 99.5 |
| 4.5 | 47.6 | 9.5 | 100.5 |
| 4.6 | 48.7 | 9.6 | 101.6 |
| 4.7 | 49.7 | 9.7 | 102.6 |
| 4.8 | 50.8 | 9.8 | 103.7 |
| 4.9 | 51.9 | 9.9 | 104.7 |

## Calculations

The table of iodine content as determined by the burette reading has been prepared based on the following:-

1. 1.0 ml of 0.005 N $Na_2S_2O_3$ = 0.1058 mg of iodine.
2. Thus, the burette reading x 0.1058 will give the amount of iodine in 10 gm of salt.
3. To get the iodine value in million, one has to multiply by 1,00,000 to either sides

| | | |
|---|---|---|
| i. | gms of salt | $I_2$ in mg |
| ii. | 10 x 1,00,000 | 0.1058 x 1,00,000 |

4. To convert mg to gm, divide by 1000
   Equation becomes:
   gms of Salt (10,00,000) = Burette Reading X 0.1058 X 100
   = Burette Reading X 10.58

   Thus, Burette reading x 10.58 will give the iodine content in parts per million (ppm)

## Precautions

1. The reaction mixture should be kept in the dark before titration because a side reaction can occur when the solution is exposed to light that causes iodide ions to be oxidized to iodine by atmospheric oxygen.
2. Inaccurate results may occur if starch solution is used while still warm.
3. If starch indicator is added too early, a strong iodine-starch complex is formed, which reacts slowly, and gives falsely elevated results.
4. The reaction should be performed at mild room temperature (<30°C), since the iodine is volatile, and the indicator solution loses sensitivity when exposed to high temperatures.
5. Potassium Iodide (KI) is used because of the low solubility of iodine. The liberated iodide forms an unstable complex $KI_3$ with KI

$$KI + I_2 = KI_3 \quad \text{and} \quad I^- + I_2 = I_3^-$$

As free iodine is used up in the reaction with thiosulphate, the equilibrium between $I_2$ and $I_3^-$ ions is disturbed and more iodine is dissolved in order to maintain the equilibrium.

A few minutes were allowed before titration, since the rate of reaction between $I^-$ ions and the oxidant is slow.

## For Urinary Iodine Concentration

### Principle

Urine was digested with ammonium persulfate. Iodide is the catalyst in the reduction of ceric ammonium sulfate (yellow) to cereous form (colourless), and was detected by rate of colour disappearance Sandell-Kolthoff reaction stated below :

$$I_2 + As_3 \rightarrow A_s^{5+} + 2I$$

$$2Ce^{++++}\ 2I \rightarrow I_2 + 2Ce^{+++}$$

The yellow coloured ceric ion ($Ce^{++++}$) was reduced to colourless cereous ion ($Ce^{+++}$) by iodide ion (I-). The time taken for the colour disappearance is inversely proportional to the amount of iodide catalysing it.

### Equipment

1. Stainless Steel Digestion Cassette, Microplate sets – (a) 96 well Polypropylene (digestion) and (b) 96 well Polystyrene (reading),
2. Elisa Reader with 3 mandatory filters (405 nm filter a must), shaking capable with appropriate software,
3. Digital Oven with temperature ranges up to 120 °C ± 1.0 °C controlling thermostat,
4. Weighing balance scales with 500-gram capacity and 0.1 milligram sensitivity
5. Volumetric flasks, beaker and bottles and Enamel or stainless-steel tray [(L) 24 cm x (W) 18 cm x (H) 5 cm]. Size is approximate even little bigger tray will be fine.
6. Multichannel pipette with reagent reservoir (Boat), micro pipettes 50 µl, 100 µl and 1000 µl capacity.

### Reagents

1. Ammonium persulfate (analytical grade)
2. Arsenic trioxide ($As_2O_3$) - AR Grade
3. Sodium Chloride (NaCl) - AR Grade
4. Sulfuric Acid, concentrated ($H_2SO_4$) - AR Grade
5. Tetra-ammonium cerium (IV) sulfate dihydrate Ce $(NH_4)_4$ $(SO_4)_4.2H_2O$ - AR Grade
6. De-ionized $H_2O$ OR boiled double distilled water - DDW
7. Potassium iodate ($KIO_3$) - AR Grade

**Reagent Preparation**

Ammonium persulfate solution (1.31 mol/L):
Ammonium persulfate was first weighted 3.6 gram and dissolved in 10 ml of DDW water. This solution was prepared fresh just before use (this is best done in 15 ml screw caped Nunc or Tarson tubes).

Sodium hydroxide – NaOH (0.875 mol/L ):
It was made in 100 ml volumetric flask. 40 grams of NaOH was dissolved in approximately 60 ml of DDW in the mentioned volumetric flask then final volume to 100 ml of DDW was made. The molarity of this stock solution was 10 molars. To make 0.875 mol/L NaOH solution, 43.75 ml of stock solution was taken in a 500 ml volumetric flask and 500 ml volume was made with DDW with swirling action.

Arsenious acid solution (0.05 mol/L):
Arsenic trioxide was taken and weighted 5 g and placed it in a 500 ml glass bottle/1 litter beaker and was dissolved in 100 mL of 0.875 mol/L sodium hydroxide solution. Concentrated sulfuric acid (16 mL) was then added slowly to the solution in an ice bath. After cooling, 12.5 g of sodium chloride was added to the solution, and the mixture was diluted to 500 mL with cold water and filtered.

1.75 M $H_2SO_4$:
A 500 ml glass measuring cylinder was taken and 400 ml was filled with DDW and kept it in ice bath. 48.61 ml concentrated (36 N) $H_2SO_4$ was slowly added to it. It was then allowed to cool and then DDW was added to make up the final volume to 500 ml.

Ceric ammonium sulfate solution (0.019 mol/L):
Tetra-ammonium cerium (IV) sulfate dihydrate (6 g) was dissolved in 1.75 mol/L sulfuric acid and adjusted to a final volume of 500 mL with the same acid solution.

Stock Iodine calibrators:
In a 100-mL volumetric flask, 168.6 mg of potassium iodate was dissolved in water to make a 7.88 mmol/L stock solution (1000 mg/L iodine).

Working stock (WS):
The 100 µl of stock solution was placed in another 100 ml volumetric flask and volume was made up till 100 ml by swirling motion. This gave concentration of 1000 µg per litre. This was stored in a dark bottle (the solution was stable for months)

The below **table** shows how to make **working calibrators** of 25, 50, 100, 200,300 and 400 µg/l. These were made in 15 ml screw capped plastic tubes. Once prepared, aliquots were made in 500 µl microfuge tubes and store at -20°C

| Concentration µg/litre | WS (ml) | DDW (ml) | Concentration | WS (ml) | DDW (ml) |
|---|---|---|---|---|---|
| 00 | 00 | 10 .00 | 200 | 2.0 | 8.0 |
| 25 | 0.25 | 9.75 | 300 | 3.0 | 7.0 |
| 50 | 0.5 | 9.50 | 400 | 4.0 | 6.0 |
| 100 | 1.0 | 9.00 | Nil | Nil | Nil |

**Procedure**

*Digestion step:*

1. Frozen urine samples were taken and kept at room temperature to thaw completely. This was done few hours before starting the analysis procedure.
2. Also take 1 vial each of aliquoted standards covering whole range, controls (if any) and allowed them to thaw. Once thawed they were mixed by vortexing
3. Urine samples were mixed either by vortexing or by up and down movement to suspend sediment. Samples were allowed to settle down for half an hour at room temperature on laboratory bench
4. During this time, sealing cassette was checked for proper gasket fitting and kept it in oven for pre-heating at 90°C for 60 minutes
5. Take out 96 well **polypropylene** digestion microplate and placed it on table
6. Pipette 50 µl each of iodine standards (starting from low and ending at highest), controls and urine sample into an appropriately marked wells in 96 well microplate. Iodine standards and a set of internal urine controls were included in each assay in duplicate
7. 100 µl of freshly prepared ammonium persulfate was added to each well with multichannel pipette (once done the plate is ready for transfer to sealing cassette)
8. Sealing cassette was taken out from oven with the help of **driving cotton gloves or cotton napkin**
9. Microplate was properly placed in pre-heated sealing cassette. It was sealed by tightening the screw and kept back in Oven already set at 90°C and it was incubated for 90 minutes
10. At the end of incubation sealing cassette was taken out from oven using **driving cotton gloves or cotton napkin** and placed in an enamel tray containing ice water. The water level in tray was such that only the lower part of the cassette is surrounded by water
11. It was allowed to cool for a minimum of 30 minutes
12. Sealing cassette was opened and digestion plate was removed

**Assay**

1. Polystyrene reading plate was pulled out and placed on table
2. 100 µl of Arsenious acid solution was placed to all wells polystyrene plate with the help of multichannel pipette
3. 50 µl of digested samples were transferred from each well of digestion plate to the equivalent well of polystyrene plate. It was allowed to stand for 15 minutes (or use plate shaker) then mixed at slow speed
4. 60 µl of ceric ammonium sulfate solution was added to each well with the help of multichannel pipette without interruption within 1 minute
5. It was incubated at room temperature for 20 minutes after addition of ceric ammonium sulfate to the first well
6. The plate was placed in microplate reader and read its absorbance at 405 nm.

**Calculation of results**

**Create standard Curve:** Standard value was plotted against the log of absorbance at 405 nm to produce a standard curve. Machine read values of unknowns against the standard curve

**Precautions**

1. This was modified from the former method[27] substituting ammonium persulfate for chloric acid (more toxic) as digestant
2. Since the digestion procedure has no specific end-point, it was essential to run blanks and standards with each assay to allow for variations in heating time, etc
3. The exact temperature, heating time, and cooling time may vary. However, within each assay, the interval between the time of addition of ceric ammonium sulfate and the time of the reading was the same for all samples, standards, and blanks

(Micropnlate should not be reused. If used will lead to iodine contamination)

*27. ICCIDD, UNICEF, WHO. Dunn JT et al. Methods for measuring iodine in urine. The Netherlands, ICCIDD, 1993. Jooste PL, Strydom E 2010 Methods for determination of iodine in urine and salt. Best Pract Res Clin Endocrinol Metab 24:77–88.*
*Pino S, Fang SL, Braverman LE 1998 Ammonium persulfate: a new and safe method for measuring urinary iodine by ammonium persulfate oxidation. Exp Clin Endocrinol Diabetes 106:S22–S27.*
*Ohashi T, Yamaki M, Pandav CS, Karmarkar MG 2000 Simple microplate method for determination of urinary iodine. Clin Chem 46:529–536.*
*Grimm G, Lindorfer H, Kieweg H, Marculescu R, Hoffmann M, Gessl A, Sager M, Bieglmayer C 2011A simple microphotometric method for urinary iodine determination. Clin Chem Lab Med 49:1749–1751.*

# Appendix 4A: Listing questionnaire

**India Iodine Survey (IIS), 2018-19**

STUDY QUESTIONNAIRE

(Listing Sheet)

Conventions used in this document:

Interviewer instructions are presented in orange, bold, italics font.

Interviewer observations are presented in blue font.

Programmed items and instructions are presented in green font.

| SECTION 1. IDENTIFICATION | | | | |
|---|---|---|---|---|
| **Q. No** | **Questions and Instructions** | **Coding Categories** | | **Skip to** |
| 1. | Please enter the name and code of the State | Name _____<br>Code : ☐☐☐ | | |
| 2. | Please enter the name and code of the district | Name _____<br>Code : ☐☐☐ | | |
| 3. | Please enter the name and code of the Block/ Sub District | Name _____<br>Code : ☐☐☐ | | |
| 4. | Please select the type of the area | Urban<br>Rural | | |
| 5. | Please enter the name and code of the PSU (Village/ Ward) | Name _____<br>Code : ☐☐☐ | | |
| 6. | Name of the Village/Ward Key Person | Name _____ | | |
| 6.i | Designation of Village/Ward Key Person | Name _____ | | |
| 7. | Contact Number of the Village Key Person | ☐☐☐☐☐☐☐☐☐☐ | | |
| 8. | Number of HH in the village | ☐☐☐☐ | | |
| 9. | Population of the Village | ☐☐☐☐☐ | | |
| 10. | Is the village segmented? | Yes | 1 | |
| | | No | 2 | **Skip to Q14** |
| 11. | If Yes, how many segments has formed? | ☐☐ | | |
| 12. | Name of the segment selected? | Name _____ | | |
| 13. | Number of households in this segment? | ☐☐☐ | | |
| 14. | Interview date | ☐☐/☐☐/☐☐☐☐<br>(MM/DD/YYYY) | | |
| 15. | Please enter the name and code of the interviewer | Name _____<br>Code : ☐☐☐ | | |
| 16. | Please enter the name and code of the Supervisor | Name _____<br>Code : ☐☐☐ | | |

Introduction: Good morning/afternoon, my name is _____ and I'm from Kantar Public. We are conducting asurvey on behalf of Nutrition International, to understandhousehold consumption of adequately iodised salt and the status of iodine nutrition in the community at the national level.

| 17. | 18. | 19. | 20. | 21. | 22. | | | 23. | 24. | 25 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Only ask Q21 to Q24 if >0 in Q20 | | | | | |
| Structure Number | Household Number | *Status of the HH **[ HH Serial Number to be appeared from Q18]** in structure **[ Structure Serial Number to be appeared from Q17]?**<br><br>**(Instruction: If coded 2 or 3 or 4, move to next Household)**<br><br>Available -1<br>Refused -2<br>Competent respondent is not available -3<br>Household is locked -4 | How many members are there in this HH? | How many women aged between 15-49 years are there who are regular members of the household?<br><br>**(Instruction: If Response is '0' skip to next Household)** | Out of these women how many are?<br><br>PW: Pregnant Women<br>#LW: Lactating Women<br>NPNLW: Non-Pregnant Non-Lactating Women | | | Name of the Head of the Household | Address of the household with Landmark | Contact Number of Head of the Household |
| | | | | | a | b | c | | | |
| | | | | | PW | LW | NPNLW | | | |
| 1. | | ☐ | ☐☐ | ☐☐ | ☐ | ☐ | ☐ | | | |
| 2. | | ☐ | ☐☐ | ☐☐ | ☐ | ☐ | ☐ | | | |
| 3. & so on | | ☐ | ☐☐ | ☐☐ | ☐ | ☐ | ☐ | | | |

*Any adult (above 18 years of age) member of the HH is will be respondent for this questionnaire
#Lactating Women: Women having infant of less than six months, who are currently breastfeeding their baby

| Summary of Target Respondents Covered | |
|---|---|
| Total Number of Pregnant Women in the PSU: | ☐☐ |
| Total Number of Lactating Women in the PSU: | ☐☐ |
| Total Number of Non-Pregnant Non-Lactating Women in the PSU: | ☐☐ |

## SEGMENTATION MAP

Q1. State Name and code:.....☐☐☐☐ Q.2 District Name and code:.....☐☐☐☐

Q3. Block Name and code:.....☐☐☐☐ Q4.PSU name (Village) and code:.....☐☐☐☐

# Appendix 4B: Main survey questionnaire

# India Iodine Survey (IIS), 2018-19

**STUDY QUESTIONNAIRE**
**(Household Questionnaire)**

**Conventions used in this document:**

***Interviewer instructions are presented in orange, bold, italics font.***

**Interviewer observations are presented in blue font.**

**Programmed items and instructions are presented in green font.**

**Prepared by:**

KANTAR

**Submitted to:**

NUTRITION INTERNATIONAL
Nourish Life

# INDIA IODINE SURVEY, 2018-19

## HOUSEHOLD QUESTIONNAIRE

| Schedule Number (Auto generated): | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|

| IDENTIFICATION | |
|---|---|
| Please select the Name and code of the State<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | Name _____<br>Code : ☐☐☐ |
| Please select the Name and code of the district<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | Name _____<br>Code : ☐☐☐ |
| Please select the Name and code of the Block/ Sub District<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | Name _____<br>Code : ☐☐☐ |
| Please select the Type of area<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | Name _____<br>Code : ☐☐☐ |
| Please select the Name and code of the PSU (Village/ Ward)<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | Name _____<br>Code : ☐☐☐ |
| Segment name of the PSU (if it is a big village)<br><br>**(CAPI Instruction: This will only show if the PSU is segmented)**<br>**(Instruction: Data would be push backed from Samples selected from Listing)** | |
| Segment number of the PSU (if it is a big village)<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | ☐☐ |
| Selected Structure Number<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | ☐☐ |

| | |
|---|---|
| Selected HH Number<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | ☐☐ |
| Name of the Head of the Household<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | |
| Address of the household with Landmark<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | |
| Contact Number of Head of the Household<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | |
| Type of household:<br><br>Pregnant women 1<br><br>Lactating women 2<br><br>Non-pregnant non-lactating women 3<br><br>**(Instruction: Data would be push backed from Samples selected from Listing)** | ☐ |
| Name of the respondent _____ | |
| Type of the respondent:<br><br>Head of the Household (in case female) 1<br><br>Wife of the Head of the Household 2<br><br>Any other adult woman who has been living continuously for the past three months in the Household 3<br><br>Any other adult member in the household who has been living continuously for the past 3 months 4 | ☐ |

## INTERVIEWER VISITS

| | | | |
|---|---|---|---|
| Name of Interviewer & Code | | | ☐☐ |
| Date of Interview | (DD / MM / YY) ☐☐/☐☐/☐☐ | | End Time (HH/MM) ☐☐/☐☐ |
| Time of Interview | Start Time (HH/MM) ☐☐/☐☐ | | |
| Accompaniment Done | Yes – 1 No - 2 | | ☐ |
| Field Supervisor | Name | Date | Sign: |

| | | |
|---|---|---|
| Result of the interview | **Completed** | |
| | Interview completed with salt and urine sample collected with Rs. 10 | 11 |
| | Interview completed with salt and urine sample collected without Rs. 10 | 12 |
| | Interview completed with only salt sample collected with Rs. 10 | 13 |
| | Interview completed with only salt sample collected without Rs 10 | 14 |
| | **Not Completed** | |
| | Refused | 21 |
| | Postponed | 22 |
| | Entire household absent for extended period of time | 23 |
| | No household member at home or no competent respondent at home at time of visit | 24 |
| | Dwelling vacant or address not a dwelling | 25 |
| | Dwelling Destroyed | 26 |
| | Others (Specify_____) | |

# Investigator's statement: Please read this information sheet carefully.

## Introduction

Good morning/afternoon, my name is _____ and I'm part of a research team from Kantar. We are conducting this study on behalf of Nutrition International, a renowned international development organisation, to understandhousehold consumption of adequately iodised salt and the status of iodine nutrition in the community at the national level.

## Purpose

The purpose of the study is to track the universal salt iodisation programme at state level and allow state governments to better target the programmes. According to estimates of Government of India, 303 out of 365 districts, where studies have been conducted are endemic for Iodine Deficiency Disorders. Therefore,we are here to conduct a research to access your understanding regarding iodised salt and iodine deficiency disorders.

We will take about 20 to 30 minutes of your time and at the end of the interview, with your consent, will collect 50 gms of cooking salt sample from your household and 50 ml of urine sample from **[Type of household (PW or LW or women aged 15-49 who are neither pregnant nor lactating)]**in your household.

## Benefits

This study will generate information on the household use of adequately iodised salt and on the iodine nutritional status among women of reproductive age in India. The data from this study will help in formulating policies for elimination of iodine deficiency disorders in the country. In lieu of the collected salt sample you would be paid INR. 10 against a signed voucher.

## Confidentiality

Information provided by you will not be disclosed to anyone outside the research team. The reports generated from the research will not reveal any individual information, your identity and laboratory test results of the samples provided by you. You will not be at any risk for participating in this survey.

## Voluntary Participation

Participation in this study is completely volunatary, you are free to withdrawn from the survey at any stage without any penalty. However, we hope for your full participation since your views are inportant to us.You are not required to pay for participating in this survey.

You are free to ask any question regarding this study. Please let us know if need any clarification.

## Contact Information

If you have any question about the study at any time, you maycontact Mr. Sujeet Choubey at+91-11-42697800 or contact Nutrition International Office at +91-11-46862005/7. If you have any question about the study at any time, you maycontact Mr. Sujeet Choubey at+91-11-42697800 or contact Nutrition International Office at +91-11-46862005/7. For any ethical issues, please contact Ms. Sakshi Saini of SRI-IRB at 011- 42697070.

**Consent**

| | | | |
|---|---|---|---|
| **Do you have any question ?** | Yes | 1 | |
| | No | 2 | |
| **Do you give your consent to participate in the study?** | Yes | 1 | |
| | No | 2 | |
| **Consent for the collection of the Salt sample –** We would also like to collect about 50 gm of salt that has been used to prepare the last meal in your household. This will be tested for iodine content more accurately in a laboratory Would you be willing to provide the salt sample? | Yes | 1 | |
| | No | 2 | |
| If you do not agree to provide salt sample, kindly indicate any of the reasons below and these will be used for research purposes only: | I do not have 50g of salt sample | 1 | |
| | Due to my customs and traditions, I will not be able to give salt sample | 2 | |
| | My family member have asked me not to give salt sample | 3 | |
| | Other (specify)_____ | 8 | |
| **Consent for the collection of the Urine sample –** | Yes | 1 | |
| We would also like to collect about 50 ml of urine sample from PW/LW/NPNLW person in your household. In case you qualify under this category/ in your absence another qualifying female from your household, would you be willing to/ allow her (as case maybe) to provide the urine sample in the container provided? This will be tested for iodine content more accurately in a laboratory | No | 2 | |

| | | | |
|---|---|---|---|
| If you do not agree to provide urine sample, kindly indicate any of the reasons below and these will be used for research purposes only: | Eligible women isn't available | 1 | |
| | Due to my customs and traditions, I will not be able to give Urine sample , | 2 | |
| | My family member have asked me not to give Urine sample | 3 | |
| | Other (specify)_____ | 8 | |

## Instruction to Interviewer

*After collecting the salt sample and urine sample affix the same bar code, one in the consent form, one on the salt sample packet and one on the urine sample container and one on the transmittal sheet.*

*In case the respondent refuses to provide either of the samples (salt and urine), kindly move to next interview.*

*Kindly provide a copy of signed consent form to the respondent.*

## Section A: Salt and Urine Samples

**Instructions for the Investigator:**

Kindly request approximately 50 grams of salt from the household, collect the sample in the ziplock pouch provided and label the zip lock pouch with the barcode sticker provided (identical to the number at the front of this questionnaire. Also collect the sample of urine (50 ml) from identified respondent (PW/LW/NPNLW) in the household in the container provided. Please ensure that the container is pre-marked with the volumetric mark. After collecting the urine sample, add Toluene (2 ml), close the lid tightly. Label the container with the same bar code and place in the cold chain box.

**Please remember that individuals have the right to refuse and must not be coerced into providing either of the samples**

## SECTION -B HOUSEHOLD COMPOSITION

| Line No. | Total number of members including Usual residents, visitors and domestic servants | 101. Please give me names of persons who usually live in your HH*, starting with the head of HH | 102. | 103. | 103 (i) | 104. Age (in years) | 105. Age (in month) | 106 | 107 |
|---|---|---|---|---|---|---|---|---|---|
| | **Instruction : who have been continuously living here for the past three months** | | What is the relationship of (NAME) to the head of HH? | What is the sex of (NAME)? Male…..1 Female……2 Transgender..3 | What is the current marital status of (NAME)? | How old is (NAME)? **(In completed years (as on 1st January 2018). If less than 5-year code it as '0'.)** | **If coded '0' in column 5 then state the age as number of months** | What is the highest Class (Name) has completed? **(CAPI Instructions: Only ask if AGE >6 YEARS)** Illiterate….98 NA ( if less than 6 years)…99 | Tick the person from whom the Urine sample is collected? |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(5.1)** | **(6)** | **(7)** | **(8)** | **(9)** |
| 01 | | | | | | | | | |
| 02 | | | | | | | | | |
| 03 | | | | | | | | | |
| 04 | | | | | | | | | |
| 05 | | | | | | | | | |
| 06 | | | | | | | | | |
| 07 | | | | | | | | | |
| 08 | | | | | | | | | |

| (1) | (2) | (3) | (4) | (5) | (5.1) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| 01 | | | | | | | | | |
| 02 | | | | | | | | | |
| 03 | | | | | | | | | |
| 04 | | | | | | | | | |
| 05 | | | | | | | | | |
| 06 | | | | | | | | | |
| 07 | | | | | | | | | |
| 08 | | | | | | | | | |

| Codes for col.3 | | | |
|---|---|---|---|
| Head of Household | 01 | Parent-in-law | 08 |
| Spouse (Wife or Husband) | 02 | Brother or Sister | 09 |
| Son or Daughter | 03 | Brother-in-law or Sister-in-law | 10 |
| Son-in-law or Daughter-in-law | 04 | Other Relative | 11 |
| Grand child | 05 | Adopted / Foster Child | 12 |
| Parent | 06 | Not related | 13 |
| Domestic Help | 07 | Lodgers or friends | 14 |

| Codes for 103 (i). | |
|---|---|
| Currently married | 01 |
| Married, but Gauna not performed | 02 |
| Widowed | 03 |
| Divorced | 04 |
| Separated | 05 |
| Deserted | 06 |
| Never Married | 07 |

## SECTION C: CONSUMER BEHAVIOR ON PURCHASE AND CONSUMPTION OF IODISED SALT

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| 201. | From where did you purchase the cooking salt to cook the last meal in your HH? | Kirana Store | 1 | |
| | | General Store | 2 | |
| | | Public Distribution System | 3 | |
| | | Vendor/Salesman | 4 | |
| | | Local haat/market | 5 | |
| | | Other (specify _____) | 8 | |
| | | Don't Know | 9 | |
| 202. | Who decides on the type/ brand of salt to be purchased for the household? | Head of the household | 1 | |
| | | Spouse of the household head | 2 | |
| | | Other male adult family member | 3 | |
| | | Other female adult family member | 4 | |
| | | Children (<18 years) | 5 | |
| 203. | In most cases, which member of the household buys salt for the household? | Head of the household | 1 | |
| | | Spouse of the household head | 2 | |
| | | Other male adult family member | 3 | |
| | | Other female adult family member | 4 | |
| | | Children (<18 years) | 5 | |
| 204. | How often do you purchase cooking salt from PDS?<br><br>*(Ask this question only if 201 is answered as 03)* | Weekly (<7 days) | 1 | |
| | | >one week but ≤ 4 weeks | 2 | |
| | | >one month but ≤ 3 months | 3 | |
| | | >3 months but ≤6 months | 4 | |
| | | >6 months | 5 | |
| | | Don't know | 8 | |
| | | Others (specify_____) | 9 | |
| 205. | What characteristics determines what kind of salt you buy?<br><br>*(Multiple response possible)* | Saltiness | 1 | |
| | | Texture | 2 | |
| | | Colour | 3 | |
| | | Price | 4 | |
| | | Brand | 5 | |
| | | Tradition | 6 | |
| | | Purity (absence of any foreign particles) | 7 | |
| | | Others (specify) _____ | 8 | |
| | | Don't Know | 9 | |

| No. | Question | Coding categories | | Code | Skip |
|---|---|---|---|---|---|
| 206. | Type of cooking salt purchased for your household to cook the last meal in your HH? | Packaged crushed salt | | 1 | |
| | | Packaged crystal salt | | 2 | |
| | | Loose crushed salt | | 3 | |
| | | Loose crystal salt | | 4 | |
| 207. | What kind of salt did you use for cooking purposes?<br><br>**(Multiple response possible)**<br><br>***Instructions: aided response, investigator to carry picture cards*** | **Spontaneous** | **Aided** | | If coded 2, 3, 4, 9 skip to 209 |
| | | Iodised | Iodised | 1 | |
| | | Non-Iodised | Non-Iodised | 2 | |
| | | Salt declared as "for preservative purpose" | Salt declared as "for preservative purpose" | 3 | |
| | | Not sure whether iodised or not | Not sure whether iodised or not | 4 | |
| | | Don't know | Don't know | 9 | |
| 208. | Why do you buy iodised salt?<br><br>**(Multiple response possible)** | I know that it is healthy | | 1 | |
| | | Because other kinds of salt are not available | | 2 | |
| | | Because doctor advised | | 3 | |
| | | Because the ANM/ ASHA/ AWW advised | | 4 | |
| | | The shopkeeper asked me to buy iodised salt | | 5 | |
| | | Household members asked me to buy iodised salt | | 6 | |
| | | Friends asked me to buy iodised salt | | 7 | |
| | | Panchayat member asked me to buy | | 8 | |
| | | Teacher told our children to buy | | 9 | |
| | | Others (Specify)..... | | 88 | |
| 209. | What was the quantity of the salt you last purchased which you used for cooking the last meal?<br><br>Interviewers instructions:<br>Please note down the exact quantity if 1 or 8 is selected. | Exact Quantity | Select Range | | |
| | | ☐☐:☐☐☐<br>KG Grams | Less than half KG | 1 | |
| | | | Half KG | 2 | |
| | | | 1 Kg | 3 | |
| | | | 5 KG | 4 | |
| | | | Other (Specify_____) | 8 | |
| 210 A | What was the price you paid for your last purchase of 1 KG of cooking salt ? | Price | Rs.<br><br>☐☐ | Paisa<br><br>☐☐ | |
| | | | Don't Know | 9 | |

| No. | Question | Coding categories | | Code | Skip |
|---|---|---|---|---|---|
| 210 B | **Ask only If coded "Don't Know" in Q210 A**<br><br>How much did you pay for the last salt purchased for cooking?<br><br>**Instruction: Auto Calculate the rate for 1KG of Salt** | Price | Rs.<br>☐☐ | Paisa<br>☐☐ | |
| | | | Don't Know | 9 | |
| 211. | You said you purchased [**XX kg/gm Q209**] cooking salt last time. How many days does it take to use up this amount of cooking salt? [**XX kg/gm Q209**] ?<br><br>***Instructions: in case the respondent states in months, convert the same into days*** | Days<br>☐☐☐ | | | |
| | | Don't Know | | 9 | |
| 212. | Except cooking food, Is there any other use of salt in your household? | Yes | | 1 | |
| | | No | | 2 | **Go to 214** |
| | | Don't know | | 8 | |
| 213. | If yes, for what purpose the salt was used?<br><br>***(Multiple response possible)*** | Earthing /electrical purposes | | 1 | |
| | | Animal feed | | 2 | |
| | | Agriculture | | 3 | |
| | | Othes (specify_____) | | 8 | |
| 214. | Where do you store your cooking salt?<br><br>***(Multiple response possible)*** | Plastic container with lid | | 1 | |
| | | Plastic container without lid | | 2 | |
| | | Metal container with lid | | 3 | |
| | | Metal container without lid | | 4 | |
| | | Glass container with lid | | 5 | |
| | | Glass container without lid | | 6 | |
| | | Earthen pot with cover | | 7 | |
| | | Earthen pot without cover | | 8 | |
| | | Wooden container with cover | | 9 | |
| | | Wooden container without cover | | 10 | |
| | | In the same pouch | | 11 | |
| | | In sack/bag | | 12 | |
| | | Other(Specify_____) | | 88 | |

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| 215. | How do you perceive the quality of cooking salt used at your household? | Good | 1 | |
| | | Average | 2 | |
| | | Poor | 3 | |
| 216. | In your perception what are the characteristics of good quality cooking salt?<br><br>*(Multiple response possible)* | It looks white | 1 | |
| | | Look is attractive | 2 | |
| | | Taste is good | 3 | |
| | | Packaged/branded salt | 4 | |
| | | Loose/unbranded salt | 5 | |
| | | Powdered salt | 6 | |
| | | Granular/crystal salt | 7 | |
| | | No moisture content | 8 | |
| | | Free flow | 9 | |
| | | Iodised salt | 10 | **Go to 219** |
| | | Other (Specify_____) | 88 | |
| 217. | Have you heard about iodised salt? | Yes | 1 | |
| | | No | 2 | **Go to 221** |
| 218. | What is the source from which you came to know about iodised salt?<br><br>*(Multiple response possible)* | TV | 1 | |
| | | Radio | 2 | |
| | | Newspaper / Magazine | 3 | |
| | | Hoarding / Placard / Poster / Billboards / Wall writing | 4 | |
| | | Hand bills / Pamphlets / Booklets | 5 | |
| | | Public Announcements | 6 | |
| | | Bus | 7 | |
| | | Drama/skit/street plays/puppet shows/health exhibitions | 8 | |
| | | SHGs/ Health Groups | 9 | |
| | | Doctor | 10 | |
| | | ASHA/AWW/ANM | 11 | |
| | | Friends/ Relative | 12 | |
| | | Shopkeeper | 13 | |
| | | Others (Specify) | 88 | |
| | | Don't Know | 99 | |
| 219. | What are the benefits of consuming iodised salt regularly?<br><br>*(Multiple response possible)* | Prevents Goitre | 1 | |
| | | Prevents Cretinism | 2 | |
| | | Prevents complication during birth | 3 | |
| | | Protects child foetus | 4 | |
| | | Improves intelligence levels | 5 | |

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| | | Improves maternal health | 6 | |
| | | Others | 8 | |
| | | DK/CS | 9 | |
| 220. | How do you know if the salt is iodised?<br><br>*(Multiple response possible)* | Smiling sun logo | 1 | |
| | | Name of the brand | 2 | |
| | | Word "iodised" | 3 | |
| | | Shopkeeper tells me so | 4 | |
| | | Others (Specify)..... | 8 | |
| 221. | Would you be willing to pay more, if better quality of cooking salt was made available to you? | Yes | 1 | **Go to 223** |
| | | No | 2 | |
| | | **Don't Know** | 99 | |
| 222. | What is the maximum additional amount you would pay for 1 KG of better-quality cooking salt?<br><br>CAPI instruction: show the amount entered in Q210 A | Rupees Paisa<br><br>☐: ☐☐ | | |
| | | DK/CS | 88 | |
| 223. | Have you heard of Anemia? | Yes | 1 | |
| | | No | 2 | **Skip to 225** |
| | | Don't know | 8 | |
| 224. | Can you tell me some symptoms of Anemia?<br><br>*(Multiple response possible)* | Headache | 1 | |
| | | Weakness/fatigue | 2 | |
| | | Shortness of breath | 3 | |
| | | Poor appetite | 4 | |
| | | Paleness of skin under eyes and tongue | 5 | |
| | | Brittle nails | 6 | |
| | | Inflammation/soreness of tongue | 7 | |
| | | Cold hands and feet/swelling of feet | 8 | |
| | | Dizziness/fast heartbeat | 9 | |
| | | Tingling/crawling in legs | 10 | |
| | | Other (please specify) | 88 | |
| | | Don't know | 99 | |
| 225. | Have you heard of salt fortified with iron and iodine? | Yes | 1 | |
| | | No | 2 | **Skip to 227** |
| 226. | Have you consumed salt fortified with iron and iodine in the last 6 months? **(unaided)** | Yes | 1 | **Skip to 228** |
| | | No | 2 | |
| 227. | Have you consumed salt fortified with iron and iodine in the last 6 months? **(aided-use the pictorial aid to explain about DFS)** | Yes | 1 | |
| | | No | 2 | **Skip to 230** |

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| 228. | From where did you purchase salt fortified with iron and iodine? | Kirana Store | 1 | |
| | | General Store | 2 | |
| | | Public Distribution System | 3 | |
| | | Vendor/Salesman | 4 | |
| | | Local haat/market | 5 | |
| | | Other (Specify_____) | 8 | |
| | | Don't Know | 9 | |
| 229. | If yes, what was the price you paid for purchasing salt fortified with iron and iodine? | ☐☐:☐☐<br>Rupees Paisa | | |
| | | Don't know/ Can't say | 88 | |
| 230. | **Instructions: Skip this question if 'Yes' is selected in 226 or 227**<br><br>Would you be interested in purchasing salt fortified with iron and iodine? | Yes | 1 | |
| | | No | 2 | **Skip to 301** |
| | | Don't know | 8 | |
| 231. | If yes, what is the maximum amount you would pay for 1 KG of double fortified cooking salt? | ☐☐:☐☐<br>Rupees Paisa | | |
| | | Don't know/ Can't say | 88 | |

## SECTION D: PERCEPTION OF IODISED SALT

301. **Ask these questions only if coded '1' in Q217 and Option '10' is coded in Q216**
I am going to state some concepts people have about Iodised salt, please share your agreement with the statement in a scale of 1 to 5 where 1 denotes Strongly Agree and 5 denotes Strongly Disagree.
**(Ask to all)**

| | | Strongly Agree | Some what Agree | Neither agree nor disagree | Somewhat Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| A | Iodised salt does tastes different | 1 | 2 | 3 | 4 | 5 |
| B | Iodine does change colour, odour or taste | 1 | 2 | 3 | 4 | 5 |
| C | All packaged salts are iodised | 1 | 2 | 3 | 4 | 5 |
| D | Refined iodised salt is unhealthy | 1 | 2 | 3 | 4 | 5 |
| E | Availability of iodine in our normal diet is not sufficient and iodised salt is required. | 1 | 2 | 3 | 4 | 5 |
| F | Consumption of Iodised salt is related to normal growth of foetus in pregnant women | 1 | 2 | 3 | 4 | 5 |
| G | Just appearance cannot mean it is a good quality salt | 1 | 2 | 3 | 4 | 5 |
| H | Iodisation of salt drastically increases the cost | 1 | 2 | 3 | 4 | 5 |
| I | Consumption of iodised salt leads to disease and illness | 1 | 2 | 3 | 4 | 5 |

Please share your agreement with the following statements on the importance of Iodised Salt, in a scale of 1 to 5 where 1 denotes Strongly Agree and 5 denotes Strongly Disagrees. **(these will be asked only to those whose responses were among the options of 1-8 in Q 219)**

| | | | | | | |
|---|---|---|---|---|---|---|
| 302. | Eating iodised salt regularly will help prevent goitre | 1 | 2 | 3 | 4 | 5 |
| 303. | Preventing goitre is good for health | 1 | 2 | 3 | 4 | 5 |
| 304. | Eating iodised salt regularly will help in mental development of my child | 1 | 2 | 3 | 4 | 5 |
| 305. | I can protect my unborn child from disorders if I eat iodised salt | 1 | 2 | 3 | 4 | 5 |

## SECTION E: HOUSEHOLD PROFILE

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| 401. | What is the religion of the head of the household? | Hindu | 1 | |
| | | Muslim | 2 | |
| | | Christian | 3 | |
| | | Sikh | 4 | |
| | | Buddhist/Neo Buddhist | 5 | |
| | | Jain | 6 | |
| | | Jewish | 7 | |
| | | Zoroastrian/ Parsi | 8 | |
| | | No Religion | 9 | |
| | | Don't want to disclose | 10 | |
| | | Other (Specify_____¬_) | 96 | |
| 402. | What is the category of the head of the household? | SC | 1 | |
| | | ST | 2 | |
| | | OBC | 3 | |
| | | General | 5 | |
| | | No caste/tribe | 6 | |
| | | Other (Specify_____¬_) | 96 | |
| Now I am going to ask some questions about your house and household assets | | | | |
| 403. | Does your household own this house or any other house? | Yes | | **skip to 405 if coded '2'** |
| | | No | | |
| 404. | Who owns the house? | Male ☐☐ | 1 | |
| | | Female ☐☐ | 2 | |
| | | Both ☐☐ | 3 | |
| | | Don't know | 4 | |
| 405. | Main material of the floor<br><br>**Record observation.** | **Natural floor** | | |
| | | Mud/clay/earth | 11 | |
| | | Sand | 12 | |
| | | Dung | 13 | |
| | | **Rudimentary floor** | | |
| | | Raw wood planks | 21 | |
| | | Palm/bamboo | 22 | |
| | | Brick | 23 | |
| | | Stone | 24 | |
| | | **Finished floor** | | |
| | | Parquet or polished wood | 31 | |
| | | Vinyl or asphalt | 32 | |
| | | Ceramic tiles | 33 | |

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| | | Cement | 34 | |
| | | Carpet | 35 | |
| | | Polished stone/marble/Granite | 36 | |
| | | Other (specify_____) | 96 | |
| 406 | Main material of the roof.<br><br>**Record observation.** | **Natural roofing** | | |
| | | No roof | 11 | |
| | | Thatch/palm leaf/ | 12 | |
| | | Reed/grass | 13 | |
| | | Mud | 14 | |
| | | Sod/mud and grass mixture | 15 | |
| | | Plastic/polythene sheeting | 16 | |
| | | **Rudimentary roofing** | | |
| | | Rustic mat | 21 | |
| | | Palm/bamboo | 22 | |
| | | Raw wood planks/timber | 23 | |
| | | Unburnt brick | 24 | |
| | | Loosely packed stone | 25 | |
| | | **Finished roofing** | | |
| | | Metal/GI | 31 | |
| | | Wood | 32 | |
| | | Calamine/cement fiber | 33 | |
| | | Asbestos sheets | 34 | |
| | | RCC/RBC/cement/concrete | 35 | |
| | | Roofing shingles | 36 | |
| | | Tiles | 37 | |
| | | Slate | 38 | |
| | | Burnt brick | 39 | |
| | | Other (specify_____) | 96 | |
| 407. | Main material of the exterior walls.<br><br>Record observation. | **Natural walls** | | |
| | | No walls | 11 | |
| | | Cane/palm/trunks/bamboo | 12 | |
| | | Mud | 13 | |
| | | Grass/reeds/thatch | 14 | |
| | | **Rudimentary walls** | | |
| | | Bamboo with mud | 21 | |
| | | Stone with mud | 22 | |
| | | Plywood | 23 | |
| | | Cardboard | 24 | |
| | | Unburnt brick | 25 | |
| | | Raw wood/reused wood | 26 | |

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| | | **Finished walls** | | |
| | | Cement/concrete | 31 | |
| | | Stone with lime/cement | 32 | |
| | | Burnt bricks | 33 | |
| | | Cement blocks | 34 | |
| | | Wood planks/shingles | 35 | |
| | | GI/metal/asbestos sheets | 36 | |
| | | Other (specify_____) | 96 | |
| 408. | How many rooms in this household are used for sleeping? | Rooms ☐☐ | | |
| 409. | Do you have a separate room which is used as a kitchen? | Yes | 1 | |
| | | No | 2 | |
| 410. | Does your household own any agricultural land? | Yes | 1 | |
| | | No | 2 | **Go to 412** |
| 411. | Who owns this agricultural land? | Male | 1 | |
| | | Female | 2 | |
| | | Both | 3 | |
| | | Don't know | 4 | |
| 412. | What is the main source of drinking water for members of your household? | **Piped water** | | |
| | | Piped into dwelling | 11 | |
| | | Piped to yard/plot | 12 | |
| | | Public tap/standpipe | 13 | |
| | | **Tube well or borehole.** | 21 | |
| | | **Dug well** | | |
| | | Protected well | 31 | |
| | | Unprotected well | 32 | |
| | | **Water from spring** | | |
| | | Protected spring | 41 | |
| | | Unprotected spring | 42 | |
| | | Rainwater. | 51 | |
| | | Tanker truck | 61 | |
| | | Cart with small tank | 71 | |
| | | Surface water (river/dam/ Lake/ pond/ stream/canal/ Irrigation channel) | 81 | |
| | | Bottled water | 91 | |
| | | Community RO plant | 92 | |
| | | Other (specify_____) | 99 | |
| 413. | Where is the water source located? | In own dwelling | 1 | |
| | | In own yard/ plot | 2 | |
| | | Elsewhere | 3 | |

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| 414. | What type of fuel does your household commonly used for cooking? | Electricity | 1 | |
| | | Solar | 2 | |
| | | LPG/natural gas | 3 | |
| | | Biogas | 4 | |
| | | Kerosene | 5 | |
| | | Coal/lignite | 6 | |
| | | Charcoal | 7 | |
| | | Wood | 8 | |
| | | Straw/shrubs/grass | 9 | |
| | | Agricultural crop waste | 10 | |
| | | Dung cakes | 11 | |
| | | No food cooked in household | 12 | |
| | | Other (specify_____) | 99 | |
| 415. | What kind of toilet facility do members of your household usually use? | **Own Flush or pour flush toilet** | | |
| | | Flush to piped sewer System | 11 | |
| | | Flush to septic tank. | 12 | |
| | | Flush to pit latrine | 13 | |
| | | Flush to somewhere else | 14 | |
| | | Flush don't know where | 15 | |
| | | **Own Pit latrine** | | |
| | | Ventilated improved | 21 | |
| | | Pit (vip)/biogas latrine | 22 | |
| | | Pit latrine with slab | 23 | |
| | | Pit latrine without slab/ Open pit | 24 | |
| | | Twin pit/composting toilet | 31 | |
| | | Dry toilet | 41 | |
| | | No facility/uses open space or field | 51 | |
| | | Others | 99 | |
| 416. | **ASK If coded 11 – 41 in Q415**<br><br>Do you share this toilet facility with other households? | Yes | 1 | |
| | | No | 2 | |
| 417. | **ASK If coded 1 in Q416**<br><br>How many households use this toilet facility? | ☐☐☐ | | |
| | | Don't know | 88 | |

| No. | Question | Coding categories | | | Code | Skip |
|---|---|---|---|---|---|---|
| 418. | Does your household own any livestock? | Cows/bulls/ buffaloes | 1 | | 2 | |
| | | Camels | 1 | | 2 | |
| | | Horses/ donkeys/mules | 1 | | 2 | |
| | | Goats | 1 | | 2 | |
| | | Sheep | 1 | | 2 | |
| | | Chickens/ducks | 1 | | 2 | |
| 419. | Does your household own any of the following assets?<br><br>**Read one by one.**<br><br>**(Items are to be in working condition)** | **Sl. No** | **Items** | **Yes** | **No** | |
| | | 1 | Electricity | 1 | 2 | |
| | | 2 | Mattress | 1 | 2 | |
| | | 3 | Pressure cooker | 1 | 2 | |
| | | 4 | Chair | 1 | 2 | |
| | | 5 | Cot/bed | 1 | 2 | |
| | | 6 | Table | 1 | 2 | |
| | | 7 | Electric fan | 1 | 2 | |
| | | 8 | Radio/transistor | 1 | 2 | |
| | | 9 | B & W television | 1 | 2 | |
| | | 10 | Colour television | 1 | 2 | |
| | | 11 | Sewing machine | 1 | 2 | |
| | | 12 | Mobile telephone | 1 | 2 | |
| | | 13 | Land line telephone | 1 | 2 | |
| | | 14 | Internet | 1 | 2 | |
| | | 15 | Computer | 1 | 2 | |
| | | 16 | Refrigerator | 1 | 2 | |
| | | 17 | Air conditioner/ cooler | 1 | 2 | |
| | | 18 | Washing machine | 1 | 2 | |
| | | 19 | Watch/clock | 1 | 2 | |
| | | 20 | Bicycle | 1 | 2 | |
| | | 21 | Motorcycle/ | 1 | 2 | |
| | | 22 | Animal-drawn cart | 1 | 2 | |
| | | 23 | Car | 1 | 2 | |
| | | 24 | Water pump | 1 | 2 | |
| | | 25 | Thresher | 1 | 2 | |
| | | 26 | Tractor | 1 | 2 | |
| 420. | **Does any usual member of this household have a bank account or a post office account?** | Yes- Male member | | | 1 | |
| | | Yes – Female member | | | 2 | |
| | | Both male and female members | | | 3 | |
| | | No | | | 4 | |
| | | Don't know | | | 8 | |
| Now I am going to ask about access of any household member to social security schemes | | | | | | |

| No. | Question | Coding categories | | Code | Skip |
|---|---|---|---|---|---|
| 421. | Is any usual member of this household covered by a health scheme or health insurance? | Yes | | 1 | |
| | | No | | 2 | |
| | | Don't know | | 8 | |
| 422. | **ASK only If coded '1' in Q421**<br><br>What type of health scheme or health insurance?<br><br>**Any other type** | Scheme | Yes | No | |
| | | Employees state Insurance scheme (ESIS) | 1 | 2 | |
| | | Central government health scheme (CGHS) | 1 | 2 | |
| | | State health insurance scheme | 1 | 2 | |
| | | Rashtriya Swasthya Bima Yojana(RSBY) | 1 | 2 | |
| | | Community health insurance programme | 1 | 2 | |
| | | Other health insurance through employer | 1 | 2 | |
| | | Medical reimbursement from employer | 1 | 2 | |
| | | Other privately purchased commercial health insurance | 1 | 2 | |
| | | Others (specify_____) | | 9 | |
| 423. | When members of your household get sick, where do they generally go for treatment? | **Public health sector** | | | |
| | | Govt./municipal hospital | | 11 | |
| | | Govt. Dispensary | | 12 | |
| | | UHC / UHP/UFWC | | 13 | |
| | | CHC/rural hospital/block PHC | | 14 | |
| | | PHC / additional PHC | | 15 | |
| | | Sub-Centre | | 16 | |
| | | Vaidya/hakim/homeopath (ayush) | | 17 | |
| | | Anganwadi/ICDS center | | 18 | |
| | | Asha | | 19 | |
| | | Govt. Mobile clinic | | 20 | |
| | | Other public sector | | 21 | |
| | | Health facility | | 22 | |
| | | NGO or trust hospital/clinic | | 31 | |
| | | **Private health sector** | | | |
| | | Pvt. Hospital | | 41 | |
| | | Pvt. Doctor/clinic | | 42 | |
| | | Pvt. Paramedic | | 43 | |
| | | Vaidya/hakim/homeopath (ayush) | | 44 | |

| No. | Question | Coding categories | Code | Skip |
|---|---|---|---|---|
| | | Traditional healer | 45 | |
| | | Pharmacy/drugstore | 46 | |
| | | Dai (TBA) | 47 | |
| | | Other private sector | 48 | |
| | | Health facility | 49 | |
| | | **Other** | | |
| | | Shop | 51 | |
| | | Home treatment | 52 | |
| | | Others (specify_____) | 99 | |
| 424. | Does any female person have membership of Self-Help Group (SHG)? | Yes | 1 | |
| | | No | 2 | |
| | | Don't know | 3 | |
| 425. | Does the household have a ration card?<br><br>***(Please ask them to show the card)*** | Yes (Card Shown) | 1 | |
| | | Yes (Card Not Shown) | 2 | |
| | | No | 3 | |
| | | Don't Know | 8 | |
| 426. (A) | **ASK only If coded '1' in Q425**<br><br>Record from the ration card whether HH belongs to APL/BPL/ AAY category– **VERIFIED FROM RATION CARD** | APL | 1 | |
| | | BPL | 2 | |
| | | AAY | 3 | |
| | | Not ascertained | 4 | |
| 426. (B) | **ASK only If coded '2' in Q425**<br><br>Ask the economic status of the household – **SELF VERIFIED BY RESPONDENT** | APL | 1 | |
| | | BPL | 2 | |
| | | AAY | 3 | |
| | | Not ascertained | 4 | |
| Instruction to interviewer: Please provide a copy of flyers to respondent | | | | |
| **Please save and submit the questionnaire**<br><br>**Please carry the salt and urine sample as per protocol**<br><br>**If respondent has been provided Rs.10 for the salt sample, ensure voucher is duly filled** | | | | |

**Thank you**

# Appendix 5: Transmittal sheet

**Transmittal sheet**
**India Iodine Survey (IIS) - 2018-19**

**Conventions used in this document:**

*Interviewer instructions are presented in orange, bold, italics font.*

*Interviewer observations are presented in blue font.*

**Prepared by:**

KANTAR

**Submitted to:**

NUTRITION INTERNATIONAL
Nourish Life

## TRANSMITTAL SHEET (ONE FOR EACH PSU)

| | | | | |
|---|---|---|---|---|
| 1. | Please enter the name and code of the State | Name _____ | | |
| | | Code : ☐☐☐ | | |
| 2. | Please enter the name and code of the district | Name _____ | | |
| | | Code : ☐☐☐ | | |
| 3. | Please enter the name and code of the Block/ Sub District | Name _____ | | |
| | | Code : ☐☐☐ | | |
| 4. | Please select the type of the area | Urban | 1 | |
| | | Rural | 2 | |
| 5. | Please enter the name and code of the PSU (Village/ Ward) | Name _____ | | |
| | | Code : ☐☐☐ | | |
| 6. | Date of Interview (Sample Collection) | ☐☐/☐☐/☐☐☐☐ (MM/DD/YYYY) | | |
| 7. | Please enter the name and code of the interviewer | Name _____ | | |
| | | Code : ☐☐☐ | | |
| 8. | Please enter the name and code of the Supervisor | Name _____ | | |
| | | Code : ☐☐☐ | | |

| S No | Date of Specimen Collection | Sample Collected | | Unique ID (Paste the sticker) | Category of Target Women (15-49 years) for Urine Sample Collection (PW: Pregnant Women LW: Woman with <6 month old child (who are currently breast feeding NPNLW: Women neither pregnant nor lactating women) | | | Date of Dispatch | | Consignment Number | *To be filled in by the Laboratory* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Status of Sample received by Lab 1. Intact Sample 2. Damaged Sample 3. Sample not received | | Date of Sample received by lab? | Date of Test? | | Test Result? | |
| | | Salt | Urine | | PW | LW | NPNLW | From Supervisor | From Field Office | | Salt | Urine | | Salt | Urine | Salt | Urine |
| 1. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 2. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 3. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 4. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 5. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 6. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 7. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 8. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 9. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 10. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 11. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 12. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 13. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |
| 14. | | ☐ | ☐ | | ☐ | ☐ | ☐ | | | | ☐ | ☐ | | | | | |

# Appendix 6: Sampling errors of coverage of iodised salt in India and States /UTs for salt iodised at 15 to 30 ppm

| India/ States/ UTs | Value (r) | Standard error (se) | Relative Standard Error (se/r) | DEFT | Unweighted count |
|---|---|---|---|---|---|
| All India | 0.4140 | 0.0100 | 0.0243 | 2.9824 | 21406 |
| Andaman & Nicobar Islands | 0.3100 | 0.0494 | 0.1594 | 0.3154 | 600 |
| Andhra Pradesh | 0.4169 | 0.0431 | 0.1033 | 2.6010 | 600 |
| Arunachal Pradesh | 0.5140 | 0.0601 | 0.1170 | 0.5421 | 603 |
| Assam | 0.5531 | 0.0153 | 0.0276 | 0.7049 | 601 |
| Bihar | 0.4738 | 0.0459 | 0.0968 | 3.6008 | 600 |
| Chandigarh | 0.2971 | 0.0266 | 0.0897 | 0.2634 | 600 |
| Chhattisgarh | 0.5732 | 0.0225 | 0.0392 | 1.0519 | 600 |
| Dadar & Nagar Haveli | 0.4676 | 0.0349 | 0.0747 | 0.1859 | 601 |
| Daman & Diu | 0.3563 | 0.0465 | 0.1304 | 0.2493 | 600 |
| Delhi | 0.2811 | 0.0388 | 0.1380 | 1.4332 | 611 |
| Goa | 0.6633 | 0.0568 | 0.0856 | 0.7241 | 601 |
| Gujarat | 0.4817 | 0.0370 | 0.0768 | 2.6696 | 600 |
| Haryana | 0.3832 | 0.0351 | 0.0915 | 1.5446 | 601 |
| Himachal Pradesh | 0.3739 | 0.0479 | 0.1280 | 1.1270 | 600 |
| Jammu & Kashmir | 0.0233 | 0.0136 | 0.5838 | 1.3102 | 355 |
| Jharkhand | 0.4157 | 0.0441 | 0.1060 | 2.1078 | 600 |
| Karnataka | 0.4118 | 0.0319 | 0.0775 | 2.5283 | 601 |
| Kerala | 0.2737 | 0.0345 | 0.1261 | 1.9561 | 601 |
| Lakshwadeep | 0.3448 | 0.0416 | 0.1206 | 0.0921 | 600 |
| Madhya Pradesh | 0.4052 | 0.0287 | 0.0709 | 2.0733 | 603 |
| Maharashtra | 0.4691 | 0.0404 | 0.0862 | 3.7463 | 600 |
| Manipur | 0.1366 | 0.0217 | 0.1591 | 0.4349 | 600 |
| Meghalya | 0.2734 | 0.0651 | 0.2382 | 1.1471 | 600 |
| Mizoram | 0.0153 | 0.0077 | 0.5047 | 0.3116 | 605 |
| Nagaland | 0.2802 | 0.0576 | 0.2056 | 0.7919 | 600 |
| Odisha | 0.5206 | 0.0615 | 0.1182 | 3.2386 | 601 |
| Pudhucherry | 0.2858 | 0.0301 | 0.1053 | 0.3543 | 600 |
| Punjab | 0.4084 | 0.0387 | 0.0948 | 1.8195 | 600 |
| Rajasthan | 0.3959 | 0.0284 | 0.0718 | 2.0730 | 604 |
| Sikkim | 0.4438 | 0.0487 | 0.1097 | 0.3142 | 600 |
| Tamil Nadu | 0.2357 | 0.0360 | 0.1528 | 3.1984 | 610 |
| Telengana | 0.3355 | 0.0394 | 0.1176 | 2.3009 | 600 |
| Tripura | 0.4514 | 0.0262 | 0.0581 | 0.4677 | 608 |
| Uttar Pradesh | 0.4220 | 0.0242 | 0.0573 | 2.5565 | 600 |
| Uttarakhand | 0.4214 | 0.0699 | 0.1660 | 1.8007 | 600 |
| West Bengal | 0.4516 | 0.0422 | 0.0935 | 3.2671 | 600 |

# Appendix 7 : Sampling errors of coverage of iodised salt in India and States /UTs for salt iodised at ≥15 ppm

| India/ States/ UTs | Value (r) | Standard error (se) | Relative Standard Error (se/r) | DEFT | Unweighted count |
|---|---|---|---|---|---|
| All India | 0.7633 | 0.0112 | 0.0146 | 3.8460 | 21406 |
| Andaman & Nicobar Islands | 0.9685 | 0.0111 | 0.0114 | 0.1867 | 600 |
| Andhra Pradesh | 0.6389 | 0.0598 | 0.0937 | 3.7097 | 600 |
| Arunachal Pradesh | 0.9404 | 0.0147 | 0.0156 | 0.2792 | 603 |
| Assam | 0.8519 | 0.0216 | 0.0254 | 1.3952 | 601 |
| Bihar | 0.7289 | 0.0415 | 0.0570 | 3.6623 | 600 |
| Chandigarh | 0.9647 | 0.0085 | 0.0088 | 0.2087 | 600 |
| Chhattisgarh | 0.9298 | 0.0135 | 0.0145 | 1.2218 | 600 |
| Dadar & Nagar Haveli | 0.8622 | 0.0292 | 0.0338 | 0.2249 | 601 |
| Daman & Diu | 0.7426 | 0.0356 | 0.0480 | 0.2095 | 600 |
| Delhi | 0.8726 | 0.0420 | 0.0481 | 2.0909 | 611 |
| Goa | 0.9681 | 0.0114 | 0.0118 | 0.3912 | 601 |
| Gujarat | 0.8014 | 0.0354 | 0.0442 | 3.2005 | 600 |
| Haryana | 0.8672 | 0.0179 | 0.0206 | 1.1294 | 601 |
| Himachal Pradesh | 0.7390 | 0.0456 | 0.0617 | 1.1825 | 600 |
| Jammu & Kashmir | 0.9982 | 0.0018 | 0.0018 | 0.6165 | 355 |
| Jharkhand | 0.6884 | 0.0536 | 0.0779 | 2.7293 | 600 |
| Karnataka | 0.7460 | 0.0418 | 0.0560 | 3.7423 | 601 |
| Kerala | 0.9381 | 0.0172 | 0.0184 | 1.8053 | 601 |
| Lakshwadeep | 0.9192 | 0.0168 | 0.0183 | 0.0648 | 600 |
| Madhya Pradesh | 0.7326 | 0.0380 | 0.0519 | 3.0451 | 603 |
| Maharashtra | 0.8472 | 0.0287 | 0.0339 | 3.6908 | 600 |
| Manipur | 0.9954 | 0.0026 | 0.0027 | 0.2675 | 600 |
| Meghalya | 0.9843 | 0.0072 | 0.0073 | 0.4523 | 600 |
| Mizoram | 0.9919 | 0.0047 | 0.0048 | 0.2618 | 605 |
| Nagaland | 0.9970 | 0.0029 | 0.0029 | 0.3297 | 600 |
| Odisha | 0.6583 | 0.0654 | 0.0994 | 3.6272 | 601 |
| Pudhucherry | 0.6992 | 0.0302 | 0.0432 | 0.3504 | 600 |
| Punjab | 0.8512 | 0.0374 | 0.0439 | 2.4265 | 600 |
| Rajasthan | 0.6546 | 0.0495 | 0.0756 | 3.7139 | 604 |
| Sikkim | 0.9814 | 0.0062 | 0.0063 | 0.1476 | 600 |
| Tamil Nadu | 0.6190 | 0.0632 | 0.1021 | 4.9072 | 610 |
| Telengana | 0.7974 | 0.0479 | 0.0601 | 3.2834 | 600 |
| Tripura | 0.7400 | 0.0314 | 0.0424 | 0.6354 | 608 |
| Uttar Pradesh | 0.7233 | 0.0368 | 0.0508 | 4.2909 | 600 |
| Uttarakhand | 0.8410 | 0.0381 | 0.0454 | 1.3260 | 600 |
| West Bengal | 0.7994 | 0.0302 | 0.0378 | 2.9045 | 600 |

**The India Iodine Survey 2018 - 19 is a first-of-its kind national level survey covering 21,406 households in 702 primary sampling units (PSUs) in 29 states and 7 union territories of India to estimate household coverage of iodised salt and urinary iodine concentration among women in the reproductive age (15 - 49 years).**

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