

एनएसएस के आई / NSS KI (69/1.2)



सत्यमेव जयते

भारत में पेयजल, स्वच्छता, आरोग्यता एवं  
आवासीय स्थिति के मुख्य संकेतक

**Key Indicators of Drinking Water, Sanitation,  
Hygiene and Housing Condition in India**

एनएसएस 69 वॉ दौर  
NSS 69th Round  
(जुलाई 2012 - दिसम्बर 2012)  
July 2012 - December 2012



भारत सरकार  
Government of India  
सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय  
Ministry of Statistics & Programme Implementation  
राष्ट्रीय प्रतिदर्श सर्वेक्षण कार्यालय  
National Sample Survey Office

दिसम्बर 2013  
December 2013





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## प्राक्स्थान

आवास मानक-कल्याण की एक बुनियादी आवश्यकता है। जमीनी स्तर पर आवासीय स्थिति के नजरिये से देखा जाए तो, आश्रय की आवश्यकता के साथ-साथ, आवासीय इकाई का प्रकार, पेय जल की सुविधा, स्वच्छता और आरोग्यता आदि जैसी अन्य सुविधाएं भी लोगों के बेहतर रहन-सहन का महत्वपूर्ण हिस्सा हैं। राष्ट्रीय प्रतिदर्श सर्वेक्षण कार्यालय (एनएसएसओ) ने 59वें दौर के अपने सर्वेक्षण (जुलाई 2012-दिसम्बर 2012) में 'पेय जल, स्वच्छता, आरोग्यता और आवासीय स्थिति' के बारे में एक राष्ट्र-व्यापी सर्वेक्षण किया था। अधिकांश राज्य सरकारों ने भी कमोवेश समान प्रतिदर्श आकार के आधार पर इस सर्वेक्षण कार्यक्रम में भाग लिया। इस सर्वेक्षण का उद्देश्य पारिवारिक सदस्यों के अच्छे और स्वस्थ जीवन-यापन के लिये आवश्यक आवासीय स्थितियों के विभिन्न पहलुओं के बारे में जानकारी एकत्र करना और समुचित संकेतक विकसित करना था। सर्वेक्षण की सम्पूर्ण अवधि के दौरान एनएसएसओ द्वारा संकलित केंद्रीय प्रतिदर्श आंकड़ों के आधार पर, रहन-सहन सुविधाओं के महत्वपूर्ण संकेतक तैयार किये गये हैं और इन्हें इस दस्तावेज में प्रस्तुत किया गया है।

एनएसएसओ का निरंतर गह प्रयास रहा है कि सर्वेक्षण-निष्कर्ष यथाशीघ्र जारी कर दिए जाएं ताकि इसकी उपयोगकर्ताओं की सामयिक आवश्यकताओं को पूरा किया जा सके। इस उद्देश्य को ध्यान में रखते हुए और सर्वेक्षण के प्रमुख निष्कर्ष उपलब्ध कराने के मद्देनजर, एनएसएसओ अपनी रिपोर्ट जारी करने से काफी पहले केंद्रीय प्रतिदर्श आंकड़ों पर आधारित 'भारत में पेय जल, स्वच्छता, आरोग्यता और आवासीय स्थिति के मुख्य संकेतक' नामक यह दस्तावेज प्रकाशित कर रहा है।

एनएसएसओ के सर्वेक्षण अभिकल्प और अनुसंधान प्रभाग (एसडीआरडी) ने सर्वेक्षण पद्धति, सर्वेक्षण साधन विकसित करने और यह दस्तावेज तैयार करने का कार्य संभाला। एनएसएसओ के क्षेत्र संकार्य प्रभाग (एफओडी) ने सर्वेक्षण का फील्ड कार्य किया जिसमें केंद्रीय प्रतिदर्शों को शामिल किया गया था। आंण्डा विधायन और राष्ट्रीयन का कार्य एनएसएसओ के समक विधायन प्रभाग (डीपीडी) ने किया। एनएसएसओ के ही सन्नयन एवं प्रकाशन प्रभाग (सीपीडी) ने सर्वेक्षण के विभिन्न कार्यक्रमों में सगन्धन का कार्य किया।

मैं सर्वेक्षण के विभिन्न चरणों में अपना बहुमूल्य मार्गदर्शन प्रदान करने हेतु राष्ट्रीय प्रतिदर्श सर्वेक्षण के 69वें दौर के कार्य दल और राष्ट्रीय सांख्यिकीय आयोग (एनएससी) के अध्यक्ष और सदस्यों का अत्यंत आभारी हूँ। मैं इस दस्तावेज को तैयार करने में शामिल एनएसएसओ के विभिन्न प्रभागों के अधिकारियों द्वारा किये गये प्रयासों के प्रति भी अपना आभार प्रकट करता हूँ। मैं आशा करता हूँ कि यह दस्तावेज योजनाकारों, नीति-निर्माताओं, शिक्षाविदों, और शोधकर्ताओं के लिए उपयोगी सिद्ध होगा। इस दस्तावेज की विषयवस्तु और कवरेज में सुधार के लिये सुझावों का स्वागत है।



(ए. के. मेहरा)

महा निदेशक एवं मुख्य कार्यकारी अधिकारी  
राष्ट्रीय प्रतिदर्श सर्वेक्षण कार्यालय

नई दिल्ली

दिसम्बर 2013

## Foreword

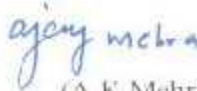
Housing is a basic requirement of human well-being. Along with the requirement of shelter, other facilities such as type of dwelling unit, drinking water, sanitation, hygiene, etc. in the micro-environment of housing form vital components of overall quality of life of the population. National Sample Survey Office (NSSO) conducted a nation-wide survey on 'Drinking water, Sanitation, Hygiene and Housing condition' in its 69th round (July 2012-December 2012) of survey. Most of the State Governments also participated in the survey programme at least on equal matching sample size basis. The objective of the survey was to collect information on the different aspects of living conditions necessary for decent and healthy living of the household members and develop suitable indicators. Based on the central sample data collected by NSSO during the entire period of survey, important indicators of living facilities have been developed and presented in this document.

It has been the persistent endeavour of NSSO to bring out its survey results at the earliest to meet the timely requirements of its users. With that aim in mind and with a view to making available the salient results of the survey, well in advance of the release of its reports, NSSO is bringing out this document 'Key Indicators of Drinking Water, Sanitation, Hygiene and Housing Condition in India' based on central sample data.

The Survey Design & Research Division (SDRD) of NSSO undertook the development of survey methodology, survey instruments and the preparation of this document. Field work of the survey was carried out by the Field Operations Division (FOD) of NSSO in which the central samples were covered. The data processing and tabulation work was handled by the Data Processing Division (DPD) of NSSO. The Coordination and Publication Division (CPD) also of NSSO coordinated various activities in the survey.

I am highly thankful to the Chairman and Members of the Working Group for NSS 69<sup>th</sup> round and National Statistical Commission (NSC) for providing their valuable guidance at various stages of the survey. I also place on record my appreciation of efforts made by officers of the different Divisions of NSSO involved in preparation of this document. I hope this document will be found useful by planners, policy makers, academicians and researchers. Suggestions for improvement of its content and coverage will be highly appreciated.

New Delhi  
December 2013

  
(A.K. Mehra)  
Director General & Chief Executive Officer  
National Sample Survey Office

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# Chapter One

## Introduction

### 1.1 Background

1.1.1 The National Sample Survey (NSS), set up by the Government of India in 1950 to collect socio-economic data employing scientific sampling methods, conducted nation-wide survey on 'Drinking water, Sanitation, Hygiene, Housing condition' and survey on 'Particulars of slums' in its 69<sup>th</sup> round (July 2012-December 2012) of operation. The last survey on these subjects was covered in 65<sup>th</sup> round of NSS (July 2008- June 2009).

### 1.2 Objective and conduct of the survey

1.2.1 Housing is a basic requirement of human well-being. Along with the requirement of shelter, other facilities in the micro environment of housing such as type of dwelling unit, drinking water, sanitation, hygiene, etc., form vital components of overall quality of life of the population. The objective of the survey on 'Drinking water, Sanitation, Hygiene and Housing condition' was to collect information on the different aspects of living conditions necessary for decent and healthy living of the household members and develop suitable indicators.

1.2.2 Information on the aspects outlined in the previous paragraph was related to the household as a whole. On drinking water, important information was collected on (i) sources and sufficiency of drinking water, (ii) distance to the source of drinking water and (iii) quality of drinking water. On the sanitation facilities, information was collected on (i) access to latrine, in terms of exclusive use, common use or no access, (ii) type of latrine, (iii) reason for not using latrine despite having access. Some information on micro-environment surrounding the house that was collected relates to (i) garbage disposal, (ii) drainage arrangement, (iii) problem of flies/mosquitoes. Other information on housing condition like, age of the house, condition of the house, type of the dwelling unit (*viz.*, *pucca*, *semi-pucca* and *katcha*), floor area of the dwelling unit, sources of financing for construction/purchase of houses/flats for residential purpose was also collected.

1.2.3 Using the collected information, important indicators of living facilities have been developed and presented in this document. Some of the important indicators are: proportion of households (i) using improved sources of drinking water, (ii) getting sufficient drinking water, (iii) fetching drinking water from outside premises, (iv) using improved latrine facilities, (v) having no arrangement for garbage disposal, (vi) having draining arrangement. On the characteristics of the house and dwelling unit, important indicators that have been developed are

(i) proportion of households with secure tenure status of dwelling, (ii) proportion of households having electricity for domestic use, (iii) average floor area of the dwelling etc.

### **1.3 Reports of the 69<sup>th</sup> round survey on Drinking Water, Sanitation, Hygiene and Housing Condition**

1.3.1 The results of NSS rounds are released in reports based on comprehensive tabulation of subject parameters and indicators in various cross classifications generated from the central sample data. Corresponding to NSS 69<sup>th</sup> round survey on Drinking Water, Sanitation, Hygiene and Housing Condition, besides this document on key results, the results are planned for release in one report. The tentative title of the other report is 'Drinking Water, Sanitation, Hygiene and Housing Condition in India'.

### **1.4 Contents of this document**

1.4.1 This document brings out the results of NSS 69<sup>th</sup> round within a year of completion of the field work for decision support, policy inferences and salient analysis. It contains Three Chapters and Three Appendices. Following the present introductory chapter (Chapter One), Chapter Two outlines the main features of the survey along with the definition of some key concepts. A brief summary of key indicators of Drinking Water, Sanitation, Hygiene and Housing Condition based on the survey is presented in Chapter Three. Appendix A contains table showing the estimated number of persons and average household size of each State/UT categorised by sector (rural, urban). It also provides estimated number of households in slums/squatter settlements for each State/UT. An outline of the sample design and estimation procedure is presented in Appendix B. Appendix C gives a facsimile of the Schedule 1.2 canvassed in the survey.

1.4.2 The estimates of key indicators of the survey have been presented for all the States and UTs. While using the estimates for the smaller States, it may be kept in mind that the sample sizes for them may not be adequate enough for getting sufficiently reliable estimates and interpretation thereof should be made with caution.

## Chapter Two

### Main Features of the Survey

#### 2.1 Schedules of enquiry

2.1.1 The schedule of enquiry on ‘Drinking Water, Sanitation, Hygiene and Housing Condition’ (known as Schedule 1.2) was designed to collect information on housing condition with wider coverage on the aspects of drinking water, sanitation and hygiene. A copy of the Schedule is given in Appendix C. Considering all the aspects of current data demand and usefulness of the survey results, some important improvisations, additions and deletions in the content of the schedule of enquiry were made in comparison to the schedule on housing condition which was canvassed during NSS 65<sup>th</sup> round survey. Some of the major changes are discussed below in brief.

2.1.2 In ‘household characteristics’ block, new items of information such as (i) age of the head of household, (ii) highest level of education among the members of the household separately for males and females were added.

2.1.3 In the block devoted to collect ‘particulars of living facilities’ like drinking water, bathroom, sanitation etc., some major improvements had been made. The codes for collecting information on drinking water and sanitation facilities had been restructured to suit the data requirements of corresponding Millennium Development Goals (MDGs). For the households, whose principal source of drinking water was outside premises, additional information was collected on (i) who fetches drinking water, (ii) time taken, in a day, to reach the source of drinking water and back, and (iii) waiting time, in a day, at the source of drinking water. Questions were also added on some other characteristics of drinking water such as quality of drinking water from the principal source, method of treatment of drinking water by the household, frequency of supply of water, whether the household gets sufficient water throughout the year for all household activities (viz., drinking, cooking, washing, bathing, etc.), average amount of water charges paid (payable) per month to the delivery agency/organisation/office etc., to get an overall idea about the facilities available for decent living of a household.

2.1.4 On the aspects of latrine facility, some additional information like reason for not using latrine even if household has access to it, whether all household members of specified age groups are using latrine, separately for male and female, were collected. Some questions were added for the first time regarding the problem of flies and mosquitoes faced by the households during the reference period. The impact of hygiene on health was also considered by collecting some



information on whether any of the household members has suffered from specified types of illness during last 30 days.

2.1.5 In 'housing characteristics and micro environment' block, some additional information such as (i) number of floor (s) in the house, (ii) household waste water disposal system, (iii) site where garbage is deposited after removal from the household and (iv) frequency of garbage clearance from the community dumping spot was collected. However, the information on plinth area of the house was not collected in this survey although it was collected during NSS 65<sup>th</sup> round.

2.1.6 In the block where some general particulars of the households living in houses were collected, some additional information like duration of stay of the household in the present village or present slum/squatter settlement/other areas of the town, some particulars regarding movement of the household to the present village or present slum/squatter settlement/other areas of the town during the last 365 days, etc. were also collected.

2.1.7 Detailed information on 'particulars of construction and repair for residential purpose' which was collected in NSS 65<sup>th</sup> round was not collected in NSS 69<sup>th</sup> round. Instead, three items have been included in corresponding 'block of household characteristics' to collect information on 'amount spent' and 'sources of finance' for those households which had spent some amount on construction/first-hand purchase of houses/flats for residential purpose during last 365 days.

## 2.2 Scope and coverage

2.2.1 *Geographical coverage:* The survey covered the whole of the Indian Union. Generally the rural areas such as (i) interior villages of Nagaland situated beyond five kilometres of the bus route and (ii) villages in Andaman and Nicobar Islands which remain inaccessible throughout the year were excluded from coverage in NSS surveys. But in this round, these areas were covered after forming a State/UT level special stratum comprising these villages.

2.2.2 *Population coverage:* The following rules were adhered to:

1. Under-trial prisoners in jails and indoor patients of hospitals, nursing homes etc., were excluded, but residential staff therein was included. The persons of the first category were considered as normal members of their parent households and were counted there. Convicted prisoners undergoing sentence were outside the coverage of the survey.
2. Floating population, i.e., persons without any normal residence were excluded. But households residing in open space, roadside shelter, under a bridge, etc., more or less regularly in the same place, were included.

3. Foreign nationals were excluded, as well as their domestic servants, if by definition the latter belonged to the foreign national's household. A foreign national who had become an Indian citizen for all practical purposes, was, however, covered.
4. Persons residing in barracks of military and paramilitary forces (like police, BSF, etc.) were kept outside the survey coverage. However, the civilian population residing in their neighbourhood, including the family quarters of service personnel, was covered.
5. Orphanages, rescue homes, *ashrams* and vagrant houses were outside the survey coverage. However, persons staying in old age homes, students staying in ashrams/ hostels and the residential staff (other than monks/ nuns) of these ashrams were covered. Although orphans living in orphanages were excluded, the persons looking after them and staying there were covered.

### 2.2.3 Sample size

2.2.3.1 *First-stage units*: As is usual in the regular NSS rounds, most States and Union Territories participated in the survey: a 'State sample' was surveyed by State Government officials whereas the 'Central sample' was surveyed by NSSO. For rural India, the number of villages surveyed in the Central sample was 4,475 and the number of urban blocks surveyed was 3,522. This document is based on the estimates obtained from the Central sample only.

2.2.3.2 *Second-stage units*: For this particular survey, from each sample village and urban block, 12 households were selected respectively for canvassing Schedule 1.2. The total number of households in which Schedule 1.2 was canvassed was 53,393 in rural India and 42,155 in urban India.

2.2.3.3 Table 2.1 (page 10) shows the number of villages and urban blocks surveyed, and the number of households in which Schedule 1.2 was canvassed, for each State and Union Territory.

### 2.2.4 Period of survey

2.2.4.1 The survey was conducted for six months (1<sup>st</sup> July 2012 to 31<sup>st</sup> December 2012). The whole period of six months was divided into two sub-rounds (sub-round one and two), each with three months' duration. The sub-round one consisted of the period 'July - September 2012' whereas the other sub-round spread over 'October - December 2012'. Equal number of sample villages/ blocks (FSUs) was allotted to each sub-round for survey with a view to ensuring uniform spread of sample FSUs over the entire survey period.

### 2.2.5 Reference period

2.2.5.1 For most of the items under particulars of living facilities, housing characteristics and micro environment, particulars of the dwelling, general particulars of the households living in houses; the reference period of last 365 days was used. However for some items like specific

types of illness, water charges, rent, consumer expenditure etc. reference period of last 30 days was used.

## 2.3 Conceptual framework

2.3.1 A broad outline of concepts and definitions which were used in this particular survey is given below:

2.3.2 *Household*: A group of persons normally living together and taking food from a common kitchen constituted a household. It included temporary stay-aways (those whose total period of absence from the household was expected to be less than 6 months) but exclude temporary visitors and guests (expected total period of stay less than 6 months).

2.3.3 *Household type*: The household type, based on the means of livelihood of a household, was decided on the basis of the sources of the household's income during the 365 days preceding the date of survey. For this purpose, only the household's income (net income and not gross income) from economic activities was considered and the incomes of servants and paying guests were not taken into account.

2.3.3.1 In rural areas, a household belongs to any one of the six household types viz. (a) self-employed in agriculture, (b) self-employed in non-agriculture, (c) regular wage/salary earning, (d) casual labour in agriculture, (e) casual labour in non-agriculture and (f) others. In urban area, four different types of households may be obtained. These types are (a) self-employed, (b) regular wage/salary earners, (c) casual labour and (d) others.

2.3.3.2 The broad household types in rural areas used in this round were *self-employed*, *regular wage/salary earning*, *casual labour* and *others*. A household which did not have any income from economic activities was classified under *others*. Within each of the broad category of *self-employed* and *casual labours* two specific household types were distinguished, depending on their major income from agricultural activities (section A of NIC-2008) and non-agricultural activities (all NIC-2008 sections, excluding section A). The specific household types for self-employed were considered as *self-employed in agriculture* and *self-employed in non-agriculture*. For casual labour, the specific household types were considered as *casual labour in agriculture* and *casual labour in non-agriculture*. In the determination of the household type in the rural areas, first the household's income from economic activities was considered. A rural household was first categorized as '*self-employed*', '*regular wage/salary earning*' or '*casual labour*' depending on the single major source of its income from economic activities during last 365 days. Further, for those households which were categorized either as *self-employed* or *casual labours*, specific household type (*self-employed in agriculture or self-employed in non-agriculture* and *casual labour in agriculture or casual labour in non-agriculture*) was assigned depending on the single major source of income from agricultural or non-agricultural activities.

2.3.3.3 An urban household was assigned the household type *self-employed, regular wage/salary earning, casual labour* or *others* depending on the major source of its income from economic activities during the last 365 days. A household which did not have any income from economic activities was classified as *others*.

2.3.4 *Household monthly per capita expenditure*: Generally household consumer expenditure is measured as the expenditure incurred by a household on domestic account during a specified period, called reference period. It also includes the imputed values of goods and services, which are not purchased but procured otherwise for consumption. In other words, it is the sum total of monetary values of all the items (i.e. goods and services) consumed by the household on domestic account during the reference period. The imputed rent of owner-occupied houses is excluded from consumption expenditure. Any expenditure incurred towards the productive enterprises of the households is also excluded from the household consumer expenditure. Monthly per capita expenditure (MPCE) is the household consumer expenditure over a period of 30 days divided by household size.

2.3.5 *Land possessed*: In this survey, the 'area of land possessed' included land 'owned', 'leased in' and 'land neither owned nor leased in' (i.e. encroached) by the household and excluded land 'leased out'. The total land area possessed by the household as on the date of survey was taken into account.

2.3.6 *Dwelling unit*: It is the accommodation availed of by a household for its residential purpose. It may be an entire structure or a part thereof or consisting of more than one structure. In general, a dwelling unit consists of living room, kitchen, store, bath, latrine, garage, open and closed veranda etc. A structure or a portion thereof used exclusively for non-residential purposes or let out to other households does not form part of the dwelling unit of the household under consideration. However, a portion of a structure used for both residential and non-residential purposes is treated as part of the dwelling unit except when the use of such portion for residential purpose is very nominal. The dwelling unit covers all pucca, semi-pucca and katcha structures used by a household.

2.3.7 *Building*: Building is a free-standing structure comprising one or more rooms or other spaces covered by a roof and usually enclosed within external walls or dividing walls which extend from the foundation to the roof. If more than one physically separated structure constitute one living unit, all of them together also form a building.

2.3.8 *Independent house*: A dwelling unit is considered as an independent house if it has a separate structure and the structure is not shared with any other household. In some parts, particularly in rural areas, two or more structures together may constitute a single housing unit.



While the main residence may be in one of the structures, the other structures may be used for sleeping, sitting and for store, bath etc. In all such cases, all the structures together will form a single housing unit and will be treated as an independent house.

2.3.9 *Flat*: A dwelling unit is considered as a flat if it is a part of a structure which is shared with at least one other household and the dwelling unit has housing facilities of water supply, bathroom and latrine, which are used exclusively by the households or shared with households residing in that structure.

2.3.10 *Pucca structure*: A pucca structure is one whose walls and roofs are made of pucca materials such as cement, concrete, oven burnt bricks, hollow cement / ash bricks, stone, stone blocks, jack boards (cement plastered reeds), iron, zinc or other metal sheets, timber, tiles, slate, corrugated iron, asbestos cement sheet, veneer, plywood, artificial wood of synthetic material and poly vinyl chloride (PVC) material.

2.3.11 *Katcha structure*: A structure which has walls and roof made of non-pucca materials is regarded as a katcha structure. Non-pucca materials include unburnt bricks, bamboo, mud, grass, leaves, reeds, thatch, etc. Katcha structures can be of the following two types:

- (a) *Unserviceable katcha structure* includes all structures with thatch walls and thatch roof, i.e., walls made of grass, leaves, reeds, etc. and roof of a similar material and
- (b) *Serviceable katcha structure* includes all katcha structures other than unserviceable katcha structures.

2.3.12 *Semi-pucca structure*: A structure which cannot be classified as a pucca or a katcha structure as per definition is a semi-pucca structure. Such a structure will have either the walls or the roof but not both, made of pucca materials.

2.3.13 *Room*: A constructed area with walls or partitions on all side with at least one door way and a roof overhead. Wall / partition means a continuous solid structure (except for the doors, windows, ventilators, air-holes, etc.) extending from floor to ceiling. A constructed space with grill or net on one or more sides in place of wall or partition is not treated as a room.

2.3.14 *Living room*: A room with floor area (carpet area) of at least 4 square metres (i.e., approximately 43 square feet), a height of at least 2 metres (i.e., approximately 6.6 feet) from the floor to the highest point in the ceiling and used for living purposes will be considered as a living room

2.3.15 *Notified slums*: These are areas notified as slums by the concerned State governments, municipalities, corporations, local bodies or development authorities.

2.3.16 *Non-notified slums*: In this survey any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, is considered a slum provided at least 20 households live there. If such a settlement is not notified as a slum, it will be called a non-notified slum.

2.3.17 *Slums*: The word “slum” refers to both notified slums and non-notified slums.

2.3.18 *Squatter settlement*: Slum like settlements with less than 20 households are considered as squatter settlements.

**Table 2.1: Number of fsu's (villages/blocks) surveyed and number of households surveyed for Schedule 1.2: NSS 69<sup>th</sup> round, Central sample**

| State / UT        | number of fsu's (villages/blocks) surveyed |             |               | number of households surveyed |              |               |
|-------------------|--|-------------|---------------|-------------------------------|--------------|---------------|
|                   | rural                                      | urban       | rural + urban | rural                         | urban        | rural + urban |
| (1)               | (2)  | (3)         | (4)           | (5)                           | (6)          | (7)           |
| Andhra Pradesh    | 244  | 242         | 486           | 2916                          | 2903         | 5819          |
| Arunachal Pradesh | 47   | 31          | 78            | 549                           | 372          | 921           |
| Assam             | 194  | 63          | 257           | 2328                          | 756          | 3084          |
| Bihar             | 264  | 104         | 368           | 3132                          | 1248         | 4380          |
| Chhattisgarh      | 83   | 66          | 149           | 984                           | 792          | 1776          |
| Delhi             | 8  | 148         | 156           | 96                            | 1758         | 1854          |
| Goa               | 12   | 12          | 24            | 144                           | 144          | 288           |
| Gujarat           | 164  | 168         | 332           | 1944                          | 2013         | 3957          |
| Haryana           | 76   | 72          | 148           | 912                           | 844          | 1756          |
| Himachal Pradesh  | 88   | 24          | 112           | 1042                          | 288          | 1330          |
| Jammu & Kashmir   | 92   | 70          | 162           | 1104                          | 840          | 1944          |
| Jharkhand         | 104  | 70          | 174           | 1248                          | 838          | 2086          |
| Karnataka         | 168  | 172         | 340           | 2016                          | 2064         | 4080          |
| Kerala            | 160  | 160         | 320           | 1919                          | 1918         | 3837          |
| Madhya Pradesh    | 248  | 202         | 450           | 2964                          | 2420         | 5384          |
| Maharashtra       | 328  | 326         | 654           | 3924                          | 3894         | 7818          |
| Manipur           | 96   | 80          | 176           | 1140                          | 955          | 2095          |
| Meghalaya         | 68   | 36          | 104           | 816                           | 432          | 1248          |
| Mizoram           | 48   | 48          | 96            | 563                           | 576          | 1139          |
| Nagaland          | 44   | 28          | 72            | 528                           | 336          | 864           |
| Odisha            | 208  | 88          | 296           | 2488                          | 1056         | 3544          |
| Punjab            | 92   | 88          | 180           | 1068                          | 1056         | 2124          |
| Rajasthan         | 212  | 142         | 354           | 2521                          | 1702         | 4223          |
| Sikkim            | 40   | 24          | 64            | 480                           | 288          | 768           |
| Tamil Nadu        | 244  | 238         | 482           | 2928                          | 2856         | 5784          |
| Tripura           | 104  | 72          | 176           | 1248                          | 864          | 2112          |
| Uttarakhand       | 40   | 34          | 74            | 480                           | 408          | 888           |
| Uttar Pradesh     | 616  | 350         | 966           | 7391                          | 4172         | 11563         |
| West Bengal       | 324  | 286         | 610           | 3862                          | 3426         | 7288          |
| A & N Islands     | 20   | 12          | 32            | 202                           | 144          | 346           |
| Chandigarh        | 8  | 16          | 24            | 96                            | 192          | 288           |
| D & N Haveli      | 8  | 8           | 16            | 84                            | 96           | 180           |
| Daman & Diu       | 8  | 8           | 16            | 96                            | 96           | 192           |
| Lakshadweep       | 7  | 8           | 15            | 84                            | 96           | 180           |
| Puducherry        | 8  | 26          | 34            | 96                            | 312          | 408           |
| <b>All-India</b>  | <b>4475</b>                                | <b>3522</b> | <b>7997</b>   | <b>53393</b>                  | <b>42155</b> | <b>95548</b>  |

## Chapter Three

### Key Results of the Survey

#### 3.1 Introduction

3.1.1 Information on housing condition with wider coverage on the aspects of drinking water, sanitation and hygiene was collected during NSS 69<sup>th</sup> round (July 2012-December 2012). The information collected can be categorised into three broad groups. Firstly, information was collected from all the selected households on the particulars of various facilities available to the sample households for decent living such as availability of drinking water, latrine, bathroom, electricity etc. Secondly, information was collected on some of the characteristics of the houses, particulars of the dwelling unit and the micro environment surrounding the dwelling unit, from the households that were living in houses. Finally, information was collected on some general particulars of the households living in houses. Apart from this, some information was also collected on construction/first hand purchase of houses or flats by the households during the last 365 days.

3.1.2 This chapter presents estimates of some key indicators of each of these broad aspects. The estimates are generally presented as ratios. As the results are generally presented as ‘per 1000 distribution’ or ‘proportion (no. per 1000)’, the figures are rounded off and in the ‘per 1000 distribution’, the figures may not add up to 1000 due to rounding off and/or non-response cases. Thus, while using the ratios from the survey results, it is to be noted that the accuracy of these derived aggregates will be limited to the number of significant digits available in the ratios. The estimated aggregates, wherever possible, can be used to get ratios with more significant digits. Also wherever statewise results have been presented in this document, estimates have been given for all the states and UTs. However, because of small sample sizes for some of the North-eastern and smaller states, users may, while using estimates, take necessary care in interpreting a result based on meagre sample size.

3.1.3 While describing the results, estimated proportions (numbers per 1000) of indicators are given for rural and urban sector. Because of different scenario observed in rural and urban sector, separate table for the combined (‘rural + urban’) sector is not given. Although the figures are given for all States and UTs, the description of each table has been restricted to the comparison among bigger States and UTs. Also for convenience of presentation, we write the reference period as ‘2012’ instead of ‘July- December 2012’ and ‘State and UTs’ as ‘states’ only.



## 3.2 Facilities for living

3.2.1 Facilities necessary for decent and healthy living on whose availability to households data were collected were those of drinking water, sanitation, bathroom, electricity, etc. The basic facilities, such as drinking water and sanitation, have wider significance in ensuring hygienic and healthy living. Similarly, particulars of tenurial status of the households are also relevant to estimate the number of households with secured tenure. Some of the indicators, pertaining to facilities for living, which come under the coverage of Millennium Development Goals (MDG), are also discussed.

### 3.2.1 Drinking water facility

3.2.1.1 The study of the drinking water facility requires analysing the access to different sources of drinking water and sufficiency of drinking water. The accessibility of drinking water at household level has other aspect like the distances travelled by members of a household to reach the source of drinking water. It would be interesting to know the proportion of households whose members have to travel a good distance to reach their principal source of drinking water. Also it would be interesting to know, for those households whose members had to travel some distance to fetch drinking water, how much time they took to reach the principal source of drinking water and come back and also, how much time they had to wait in a day at the source for fetching drinking water.

3.2.1.2 The quality of drinking water is also a very important component in maintaining good health of the population. Many households attempt to improve the quality of water they drink by adopting various methods for treating the water before drinking. It would be interesting to know how many households are actually treating drinking water.

3.2.1.3 In this round, the data on source of drinking water were collected using a code structure which can be used to get one of the MDG indicators viz. 'improved source of drinking water'. In this analysis, the improved source of drinking water include: 'bottled water', 'piped water into dwelling', 'piped water to yard/plot', 'public tap/standpipe', 'tube well/borehole', 'protected well', 'protected spring', and 'rainwater collection'. Table T1 shows the number per 1000 households having improved source of drinking water. It is observed that during 2012 in rural India, 88.5 percent households had improved source of drinking water while the figure was 95.3 percent in urban India. The survey also shows that while in rural Kerala only 29.5 percent of households got drinking water from 'improved sources', the proportion was 80 percent or more for most of the other bigger states except Jharkhand (64.4 percent). On the other hand, in the urban areas of most of the bigger states, more than 90 percent of households got drinking water from 'improved sources' with the notable exception of Kerala (56.8 percent).

Table T1: Number per 1000 households having 'sufficient' and 'improved source' of drinking water during 2012

| State/UT                   | improved source of drinking water |            | sufficient drinking water throughout the year |            |
|----------------------------|-----------------------------------|------------|---|------------|
|                            | rural                             | urban      | rural   | urban      |
| (1)                        | (2)                               | (3)        | (4)   | (5)        |
| Andhra Pradesh             | 919                               | 975        | 865   | 876        |
| Arunachal Pradesh          | 962                               | 984        | 803   | 783        |
| Assam                      | 851                               | 928        | 961   | 945        |
| Bihar                      | 976                               | 997        | 924   | 952        |
| Chhattisgarh               | 948                               | 936        | 804   | 841        |
| Delhi                      | 836                               | 977        | 703   | 844        |
| Goa                        | 839                               | 996        | 917   | 950        |
| Gujarat                    | 892                               | 956        | 863   | 961        |
| Haryana                    | 926                               | 923        | 958   | 913        |
| Himachal Pradesh           | 958                               | 1000       | 768   | 959        |
| Jammu & Kashmir            | 806                               | 979        | 744   | 848        |
| Jharkhand                  | 644                               | 883        | 703   | 793        |
| Karnataka                  | 951                               | 960        | 750   | 795        |
| Kerala                     | 295                               | 568        | 860   | 916        |
| Madhya Pradesh             | 832                               | 971        | 762   | 762        |
| Maharashtra                | 855                               | 987        | 735   | 931        |
| Manipur                    | 570                               | 698        | 753   | 672        |
| Meghalaya                  | 704                               | 945        | 731   | 640        |
| Mizoram                    | 868                               | 991        | 845   | 890        |
| Nagaland                   | 919                               | 906        | 161   | 275        |
| Odisha                     | 824                               | 955        | 833   | 862        |
| Punjab                     | 995                               | 997        | 931   | 908        |
| Rajasthan                  | 791                               | 923        | 747   | 814        |
| Sikkim                     | 852                               | 988        | 730   | 951        |
| Tamil Nadu                 | 940                               | 950        | 932   | 925        |
| Tripura                    | 873                               | 997        | 834   | 987        |
| Uttarakhand                | 928                               | 999        | 877   | 900        |
| Uttar Pradesh              | 966                               | 992        | 971   | 966        |
| West Bengal                | 950                               | 947        | 880   | 935        |
| A & Nicobar Is.            | 824                               | 1000       | 960   | 989        |
| Chandigarh                 | 999                               | 1000       | 828   | 791        |
| D & Nagar Haveli           | 946                               | 935        | 878   | 980        |
| Daman & Diu                | 874                               | 909        | 824   | 995        |
| Lakshadweep                | 215                               | 849        | 1000  | 1000       |
| Puducherry                 | 1000                              | 915        | 1000  | 997        |
| <b>all-India (2012)</b>    | <b>885</b>                        | <b>953</b> | <b>858</b>                                    | <b>896</b> |
| <b>all-India (2008-09)</b> | *                                 | *          | <b>862</b>                                    | <b>911</b> |

\*:comparative figure for 2008-09 (NSS 65<sup>th</sup> round) is not available

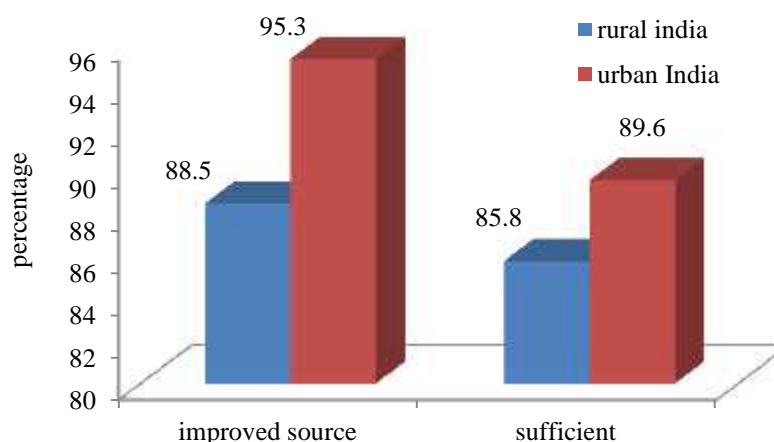
3.2.1.4 Another important aspect of drinking water facility is its sufficiency. In this survey, it has been ascertained whether households are getting sufficient amount of drinking water throughout the year. The availability of drinking water from the principal source was taken as sufficient throughout the year if, in each of the calendar months of the year, availability of drinking water was sufficient. If in any calendar month, the availability of drinking water was not sufficient for

majority of the days of the month, availability of drinking water was considered as not sufficient in that month.

3.2.1.5 Table T1 also shows the number per 1000 households having ‘sufficient drinking water throughout the year’. The table shows that during 2012, 85.8 percent households in rural India had sufficient drinking water, the figure being 89.6 percent in urban India. Among rural areas of bigger states, Uttar Pradesh had the highest (97.1 percent) and Jharkhand, the lowest (70.3 percent) proportion of households having sufficient drinking water. Similarly among urban areas of bigger states, Uttar Pradesh had the highest (96.6 percent) and Madhya Pradesh, the lowest (76.2 percent) proportion of households having sufficient drinking water.

3.2.1.6 Chart C1 shows the percentage of households having ‘improved source of drinking water’ and ‘sufficient drinking water’ for rural and urban India during 2012. The result shows that for both of these characteristics there does not exist much difference on household coverage in terms of percentage.

Chart C1: Percentage of households having ‘improved source of drinking water and sufficient drinking water for rural and urban India during 2012



3.2.1.7 If a member of a household has to travel a considerable distance to reach the principal source of water, then that household is at a disadvantage compared to a household having drinking water facility within its premises. Table T2 shows the number per 1000 households by distance to their principal source of drinking water during 2012. Here ‘within premises’ includes both ‘within dwelling’ and ‘outside dwelling but within premises’. The survey reveals that, during 2012, 46.1 percent households in rural India got drinking water within premises compared to 76.8 percent households in urban India. Among rural areas of bigger states, Punjab had the highest (84.7 percent) and Chhattisgarh had the lowest (17.3 percent) proportion of households who got drinking water within the premises. Similarly among urban areas of bigger states,

Himachal Pradesh had the highest (94.4 percent) and West Bengal had the lowest (49.0 percent) proportion of households who got drinking water within the premises.

Table T 2: Number per 1000 households having drinking water within premises and proportions of households travelling different distances to reach principal source of drinking water during 2012

| State/UT                   | households having drinking water facilities within premises |            | distance household members have to travel to reach principal source of drinking water |            |                     |           |
|----------------------------|---|------------|---|------------|---------------------|-----------|
|                            |   |            | less than 0.2 k.m.  |            | 0.2 k.m. - 0.5 k.m. |           |
|                            | rural   | urban      | rural   | urban      | rural               | urban     |
| (1)                        | (2)   | (3)        | (4)   | (5)        | (6)                 | (7)       |
| Andhra Pradesh             | 406   | 778        | 423   | 176        | 97                  | 30        |
| Arunachal Pradesh          | 523   | 920        | 282   | 18         | 14                  | 0         |
| Assam                      | 791   | 922        | 160   | 55         | 40                  | 16        |
| Bihar                      | 717   | 856        | 258   | 133        | 21                  | 3         |
| Chhattisgarh               | 173   | 619        | 636   | 349        | 186                 | 31        |
| Delhi                      | 785   | 858        | 194   | 138        | 1                   | 2         |
| Goa                        | 811   | 996        | 140   | 0          | 48                  | 3         |
| Gujarat                    | 576   | 841        | 263   | 114        | 92                  | 36        |
| Haryana                    | 717   | 873        | 165   | 108        | 53                  | 13        |
| Himachal Pradesh           | 538   | 944        | 366   | 52         | 69                  | 4         |
| Jammu & Kashmir            | 493   | 882        | 298   | 67         | 84                  | 23        |
| Jharkhand                  | 186   | 659        | 491   | 221        | 275                 | 94        |
| Karnataka                  | 357   | 819        | 541   | 146        | 85                  | 19        |
| Kerala                     | 735   | 819        | 227   | 162        | 34                  | 12        |
| Madhya Pradesh             | 194   | 708        | 563   | 252        | 194                 | 32        |
| Maharashtra                | 468   | 874        | 381   | 100        | 83                  | 15        |
| Manipur                    | 99  | 476        | 616   | 456        | 203                 | 42        |
| Meghalaya                  | 233   | 676        | 552   | 240        | 145                 | 9         |
| Mizoram                    | 108   | 777        | 696   | 127        | 186                 | 43        |
| Nagaland                   | 290   | 841        | 494   | 112        | 27                  | 7         |
| Odisha                     | 191   | 722        | 608   | 221        | 154                 | 32        |
| Punjab                     | 847   | 901        | 101   | 61         | 11                  | 19        |
| Rajasthan                  | 396   | 830        | 322   | 85         | 190                 | 37        |
| Sikkim                     | 781   | 949        | 137   | 31         | 40                  | 3         |
| Tamil Nadu                 | 314   | 647        | 590   | 290        | 72                  | 41        |
| Tripura                    | 386   | 821        | 476   | 170        | 82                  | 1         |
| Uttarakhand                | 546   | 858        | 291   | 124        | 118                 | 8         |
| Uttar Pradesh              | 581   | 776        | 383   | 177        | 30                  | 15        |
| West Bengal                | 301   | 490        | 547   | 384        | 132                 | 76        |
| A & Nicobar Is.            | 554   | 917        | 271   | 14         | 125                 | 12        |
| Chandigarh                 | 890   | 779        | 110   | 198        | 0                   | 23        |
| D & Nagar Haveli           | 544   | 520        | 285   | 470        | 52                  | 1         |
| Daman & Diu                | 554   | 635        | 430   | 234        | 0                   | 115       |
| Lakshadweep                | 848   | 564        | 152   | 402        | 0                   | 34        |
| Puducherry                 | 799   | 878        | 201   | 119        | 0                   | 3         |
| <b>all-India (2012)</b>    | <b>461</b>  | <b>768</b> | <b>409</b>  | <b>182</b> | <b>93</b>           | <b>29</b> |
| <b>all-India (2008-09)</b> | <b>405</b>  | <b>745</b> | <b>480</b>  | <b>228</b> | <b>92</b>           | <b>20</b> |



3.2.1.8 Table T2 also shows that 50.2 percent and 21.1 percent households in rural India and urban India respectively had to travel less than half a kilometre to fetch drinking water. If one considers the corresponding estimates across rural areas of bigger states, it has been observed that during 2012, Chhattisgarh had the highest (82.2 percent) and Punjab, the lowest (11.2 percent) proportion of households who had to travel less than half a kilometre to fetch drinking water. Similarly among urban areas of bigger states, West Bengal had the highest (46.0 percent) and Himachal Pradesh, the lowest (5.6 percent) proportion of households who had to travel less than half a kilometre to fetch drinking water.

3.2.1.9 For the households whose members had to go outside the premises to fetch the drinking water, another two important indicators are (i) the time taken, in a day, by the household to reach the source of drinking water and back and (ii) waiting time, in a day, at the source of drinking water. Table T3 shows average time (in minutes) taken in a day by household members to fetch drinking water from outside premises during 2012.

Table T3: Average time (in minutes) taken in a day by household members to fetch drinking water from outside the premises during 2012

| State/UT          | rural | urban | State/UT         | rural     | urban     |
|-------------------|-------|-------|------------------|-----------|-----------|
| (1)               | (2)   | (3)   | (1)              | (2)       | (3)       |
| Andhra Pradesh    | 14    | 10    | Mizoram          | 13        | 12        |
| Arunachal Pradesh | 18    | 11    | Nagaland         | 6         | 9         |
| Assam             | 10    | 13    | Odisha           | 16        | 13        |
| Bihar             | 33    | 25    | Punjab           | 16        | 15        |
| Chhattisgarh      | 18    | 25    | Rajasthan        | 31        | 33        |
| Delhi             | 9     | 6     | Sikkim           | 16        | 9         |
| Goa               | 12    | 12    | Tamil Nadu       | 14        | 15        |
| Gujarat           | 21    | 14    | Tripura          | 28        | 18        |
| Haryana           | 26    | 15    | Uttarakhand      | 25        | 13        |
| Himachal Pradesh  | 19    | 12    | Uttar Pradesh    | 22        | 20        |
| Jammu & Kashmir   | 26    | 22    | West Bengal      | 12        | 10        |
| Jharkhand         | 40    | 40    | A & Nicobar Is.  | 14        | 24        |
| Karnataka         | 17    | 15    | Chandigarh       | 13        | 29        |
| Kerala            | 16    | 11    | D & Nagar Haveli | 11        | 8         |
| Madhya Pradesh    | 22    | 14    | Daman & Diu      | 8         | 24        |
| Maharashtra       | 24    | 15    | Lakshadweep      | 21        | 13        |
| Manipur           | 15    | 14    | Puducherry       | 7         | 8         |
| Meghalaya         | 22    | 13    | <b>all-India</b> | <b>20</b> | <b>15</b> |

3.2.1.10 The survey depicts that during 2012 a person in rural India who had to go outside the premises for fetching drinking water had to spend, on an average, 20 minutes in a day for this purpose. Similarly at all India level a typical urban household member, on an average, took 15 minutes to fetch drinking water from outside the premises. Among the bigger states, if one considers rural areas only, Jharkhand was the State with the highest (40 minutes) and Assam, the lowest (10 minutes) average time a person spent in fetching drinking water. Similarly among

urban areas of bigger states, Jharkhand exhibited the highest (40 minutes) and Delhi, the lowest (6 minutes) average time spent for fetching drinking water.

3.2.1.11 The households whose members had to go outside the premises to fetch drinking water not only required to travel a little bit (and spend time) to reach the respective source of drinking water and return from it but also had to wait for some time in a queue before they got the opportunity of collecting drinking water from the source. Therefore for a typical household, the average waiting time (in minutes) in a day spent by its members at the principal source of drinking water can be thought of as an important indicator associated with drinking water facilities.

3.2.1.12 Table T4 shows that during 2012, members of rural households had, on an average, to wait for 15 minutes and members of urban households, 16 minutes in a day at the principal source of drinking water. Among rural areas of bigger states, Jharkhand had the longest (22 minutes) and Assam had the shortest (7 minutes) average waiting time spent in fetching drinking water from outside the premises. Similarly among urban areas of bigger states, Rajasthan had the longest (24 minutes) and Assam had the shortest (6 minutes) average waiting time.

Table T4: Average waiting time (in minutes) in a day for household members at the principal source of drinking water at outside the premises during 2012

| State/UT          | rural | urban | State/UT         | rural     | urban     |
|-------------------|-------|-------|------------------|-----------|-----------|
| (1)               | (2)   | (3)   | (1)              | (2)       | (3)       |
| Andhra Pradesh    | 13    | 11    | Mizoram          | 5         | 5         |
| Arunachal Pradesh | 12    | 3     | Nagaland         | 2         | 3         |
| Assam             | 7     | 6     | Odisha           | 13        | 15        |
| Bihar             | 17    | 16    | Punjab           | 10        | 10        |
| Chhattisgarh      | 13    | 14    | Rajasthan        | 20        | 24        |
| Delhi             | 21    | 19    | Sikkim           | 5         | 6         |
| Goa               | 7     | 5     | Tamil Nadu       | 13        | 18        |
| Gujarat           | 12    | 20    | Tripura          | 12        | 11        |
| Haryana           | 17    | 13    | Uttarakhand      | 18        | 15        |
| Himachal Pradesh  | 11    | 10    | Uttar Pradesh    | 16        | 14        |
| Jammu & Kashmir   | 12    | 14    | West Bengal      | 13        | 16        |
| Jharkhand         | 22    | 20    | A & Nicobar Is.  | 10        | 7         |
| Karnataka         | 17    | 18    | Chandigarh       | 40        | 22        |
| Kerala            | 9     | 9     | D & Nagar Haveli | 10        | 14        |
| Madhya Pradesh    | 18    | 16    | Daman & Diu      | 21        | 13        |
| Maharashtra       | 17    | 18    | Lakshadweep      | 16        | 7         |
| Manipur           | 7     | 8     | Puducherry       | 12        | 7         |
| Meghalaya         | 14    | 14    | <b>all-India</b> | <b>15</b> | <b>16</b> |

3.2.1.7 The treatment of drinking water is an important indicator of quality of drinking water and hygienic living as many households treat water by one or more methods before drinking. Treatment of water can be done through boiling, filtering, by using chemicals, by using electronic purifier or by any other method. Table T5 shows that in 2012, 32.3 percent and 54.4

percent of households in rural India and urban India respectively had treated water ‘by any method’ before drinking. Among rural areas of bigger states, Gujarat had the highest (85.4 percent) proportion of households who had treated drinking water ‘by any method’ before drinking while proportion of such households below that at all-India level were in Uttar Pradesh (1.7 percent), Bihar (2.2 percent), Haryana (6.6 percent), to name a few. Similarly among urban areas of bigger states, proportions of households which had treated drinking water ‘by any method’ before drinking varied from 90.1 percent (for Kerala) to 11.9 percent (for Bihar) with Delhi (44.1 percent), Haryana (41.1 percent), Odisha (46.9 percent), Punjab (31.0 percent), Tamil Nadu (45.3 percent), to name a few, all below the all-India proportion of such households.

Table T5: Number per 1000 households treating drinking water by any method during 2012

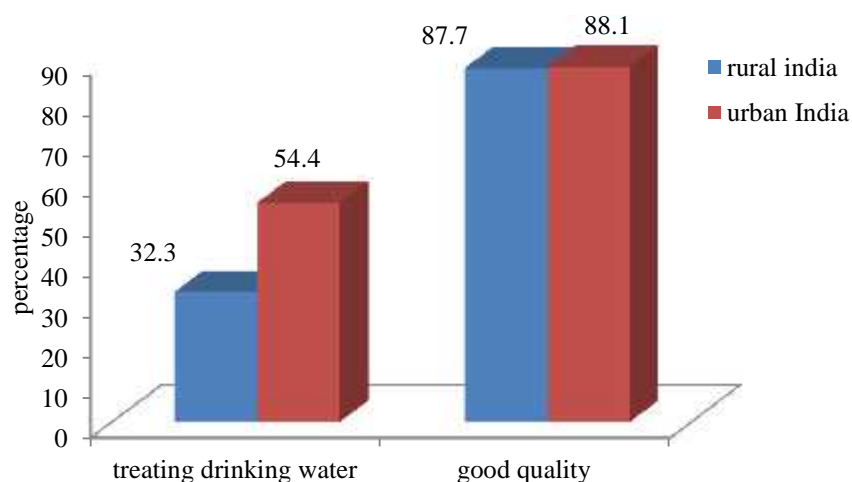
| State/UT          | rural | urban | State/UT         | rural      | urban      |
|-------------------|-------|-------|------------------|------------|------------|
| (1)               | (2)   | (3)   | (1)              | (2)        | (3)        |
| Andhra Pradesh    | 331   | 493   | Mizoram          | 716        | 838        |
| Arunachal Pradesh | 616   | 939   | Nagaland         | 999        | 992        |
| Assam             | 583   | 895   | Odisha           | 230        | 469        |
| Bihar             | 22    | 119   | Punjab           | 120        | 310        |
| Chhattisgarh      | 451   | 697   | Rajasthan        | 611        | 703        |
| Delhi             | 596   | 441   | Sikkim           | 926        | 878        |
| Goa               | 765   | 895   | Tamil Nadu       | 248        | 453        |
| Gujarat           | 854   | 879   | Tripura          | 601        | 884        |
| Haryana           | 66    | 411   | Uttarakhand      | 198        | 407        |
| Himachal Pradesh  | 143   | 599   | Uttar Pradesh    | 17         | 195        |
| Jammu & Kashmir   | 306   | 573   | West Bengal      | 104        | 315        |
| Jharkhand         | 303   | 542   | A & Nicobar Is.  | 675        | 633        |
| Karnataka         | 397   | 627   | Chandigarh       | 122        | 242        |
| Kerala            | 824   | 901   | D & Nagar Haveli | 380        | 610        |
| Madhya Pradesh    | 500   | 725   | Daman & Diu      | 732        | 290        |
| Maharashtra       | 706   | 768   | Lakshadweep      | 774        | 764        |
| Manipur           | 923   | 918   | Puducherry       | 239        | 501        |
| Meghalaya         | 697   | 965   | <b>all-India</b> | <b>323</b> | <b>544</b> |

3.2.1.8 The survey had ascertained the selected households’ perception on the quality of drinking water they received from the principal source. It was ascertained whether the water was ‘bad in taste’, ‘bad in smell’, ‘bad in taste and smell’, ‘bad due to other reasons’ or had ‘no defect’. The proportion of households reporting ‘no defect’ of drinking water from respective principal source can be interpreted as the proportion of households that were satisfied with the quality of the drinking water they got. The result (in Table T6) shows that 87.7 percent and 88.1 percent households in rural India and urban India respectively were getting good quality of drinking water. The table shows that in rural areas of most of the bigger states, more than 75 percent of households got ‘good quality’ of drinking water except in Assam (58.0 percent). Similarly in urban areas of most of the bigger states more than 70 percent of households got ‘good quality’ of drinking water except in Assam (63.8 percent) and Jammu and Kashmir (65.6 percent).

Table T6: Number per 1000 households getting good quality of drinking water during 2012

| State/UT          | rural | urban | State/UT         | rural      | urban      |
|-------------------|-------|-------|------------------|------------|------------|
| (1)               | (2)   | (3)   | (1)              | (2)        | (3)        |
| Andhra Pradesh    | 880   | 932   | Mizoram          | 999        | 1000       |
| Arunachal Pradesh | 911   | 829   | Nagaland         | 944        | 971        |
| Assam             | 580   | 638   | Odisha           | 873        | 914        |
| Bihar             | 801   | 850   | Punjab           | 849        | 729        |
| Chhattisgarh      | 905   | 901   | Rajasthan        | 806        | 871        |
| Delhi             | 942   | 900   | Sikkim           | 941        | 964        |
| Goa               | 897   | 723   | Tamil Nadu       | 865        | 884        |
| Gujarat           | 941   | 831   | Tripura          | 793        | 846        |
| Haryana           | 924   | 771   | Uttarakhand      | 944        | 856        |
| Himachal Pradesh  | 945   | 887   | Uttar Pradesh    | 922        | 870        |
| Jammu & Kashmir   | 780   | 656   | West Bengal      | 821        | 889        |
| Jharkhand         | 899   | 839   | A & Nicobar Is.  | 849        | 837        |
| Karnataka         | 938   | 919   | Chandigarh       | 901        | 847        |
| Kerala            | 947   | 902   | D & Nagar Haveli | 952        | 1000       |
| Madhya Pradesh    | 908   | 885   | Daman & Diu      | 985        | 989        |
| Maharashtra       | 941   | 926   | Lakshadweep      | 957        | 878        |
| Manipur           | 948   | 993   | Puducherry       | 825        | 802        |
| Meghalaya         | 943   | 965   | <b>all-India</b> | <b>877</b> | <b>881</b> |

Chart C2: Percentage of households 'treating drinking water' and having 'good quality of drinking water' in rural and urban India during 2012



3.2.1.9 Chart C2 shows the percentage of households in rural and urban India 'treating drinking water' and having 'good quality of drinking water' during 2012. The chart shows that if one considers the quality of water, then there does not exist much difference at all between rural and urban India. But when the question of treatment of drinking water arises, there exist considerable

difference on percentage of households treating drinking water in urban India as compared to rural India, which is much lower.

### 3.2.2 Water for all household activities

3.2.2.1 Water is used by households not only for drinking purposes but also for other household activities. Examples of such household activities are use of water in cooking, bathing, latrine, washing utensils, washing clothes, cleaning household goods, cleaning of floors, etc. This survey, in addition to sufficiency of drinking water, was also aimed at ascertaining whether households got sufficient water throughout the year for all such household activities. However, sufficiency of water used for enterprises of the household was not investigated by the survey. Thus, water used for the livestock, farming, etc., by the household was not considered. The principal source of water for uses of the household other than drinking was understood as the source which was most commonly used (in terms of frequency) by the household during the last 365 days for purposes other than drinking.

Table T7: Number per 1000 households who got sufficient water throughout the year for all household activities during 2012

| State/UT          | rural | urban | State/UT         | rural      | urban      |
|-------------------|-------|-------|------------------|------------|------------|
| (1)               | (2)   | (3)   | (1)              | (2)        | (3)        |
| Andhra Pradesh    | 867   | 866   | Mizoram          | 643        | 504        |
| Arunachal Pradesh | 891   | 795   | Nagaland         | 368        | 310        |
| Assam             | 944   | 955   | Odisha           | 832        | 882        |
| Bihar             | 934   | 952   | Punjab           | 955        | 932        |
| Chhattisgarh      | 837   | 896   | Rajasthan        | 777        | 846        |
| Delhi             | 710   | 925   | Sikkim           | 649        | 940        |
| Goa               | 886   | 979   | Tamil Nadu       | 949        | 944        |
| Gujarat           | 881   | 934   | Tripura          | 879        | 960        |
| Haryana           | 947   | 875   | Uttarakhand      | 875        | 912        |
| Himachal Pradesh  | 833   | 927   | Uttar Pradesh    | 965        | 964        |
| Jammu & Kashmir   | 758   | 836   | West Bengal      | 849        | 933        |
| Jharkhand         | 735   | 842   | A & Nicobar Is.  | 852        | 903        |
| Karnataka         | 717   | 733   | Chandigarh       | 825        | 790        |
| Kerala            | 846   | 888   | D & Nagar Haveli | 981        | 1000       |
| Madhya Pradesh    | 787   | 776   | Daman & Diu      | 824        | 944        |
| Maharashtra       | 729   | 924   | Lakshadweep      | 1000       | 999        |
| Manipur           | 895   | 850   | Puducherry       | 1000       | 997        |
| Meghalaya         | 785   | 624   | <b>all-India</b> | <b>860</b> | <b>895</b> |

3.2.2.2 Table T7 shows the number per 1000 households who got sufficient water throughout the year for all household activities. It may be observed that 86.0 percent and 89.5 percent of households in rural India and urban India respectively got sufficient water throughout the year for performing all household activities. The table shows that in rural areas of all the bigger states, more than 70 percent of households got sufficient water throughout the year for all household activities. Similarly more than 70 percent of households in urban areas of all the bigger states got

sufficient water throughout the year for all household activities. Among these states the percentage was highest (96.4 percent) in Uttar Pradesh and lowest (73.3 percent) in Karnataka.

3.2.2.3 Many households had used ‘piped water into dwelling’ or ‘piped water to yard/plot’ or ‘public tap/standpipe’ either as a principal source for drinking water, or as a supplementary source for drinking water, or as a principal source of water for other uses of the household. For these households, the frequency of water supply was ascertained. Table T8 shows the number per 1000 households who got daily supply of water during 2012. At all India level, it is estimated that 75.3 percent of such rural households and 78.1 percent of such urban households received daily supply of water.

3.2.2.4 Among rural areas of bigger states, Chhattisgarh (as well as Jharkhand) had the highest (100.0 percent) and Bihar, the lowest (51.5 percent) proportion of such households getting daily supply of water throughout the year. Similarly among urban areas of bigger states, Uttarakhand had the highest (100.0 percent) and Karnataka, the lowest (46.1 percent) proportion of such households getting daily supply water throughout the year. It has to be kept in mind while interpreting these results that all these estimates relate to a restricted set of households – those which had used ‘piped water into dwelling’ or ‘piped water to yard/plot’ or ‘public tap/standpipe’ as source of water.

Table T8: Number per 1000 households\* who got daily supply of water during 2012

| State/UT          | rural | urban | State/UT         | rural      | urban      |
|-------------------|-------|-------|------------------|------------|------------|
| (1)               | (2)   | (3)   | (1)              | (2)        | (3)        |
| Andhra Pradesh    | 758   | 559   | Mizoram          | 547        | 21         |
| Arunachal Pradesh | 793   | 873   | Nagaland         | 677        | 333        |
| Assam             | 908   | 923   | Odisha           | 844        | 965        |
| Bihar             | 515   | 889   | Punjab           | 981        | 962        |
| Chhattisgarh      | 1000  | 957   | Rajasthan        | 671        | 694        |
| Delhi             | 419   | 970   | Sikkim           | 961        | 990        |
| Goa               | 738   | 946   | Tamil Nadu       | 798        | 642        |
| Gujarat           | 780   | 817   | Tripura          | 879        | 999        |
| Haryana           | 828   | 926   | Uttarakhand      | 997        | 1000       |
| Himachal Pradesh  | 859   | 860   | Uttar Pradesh    | 883        | 964        |
| Jammu & Kashmir   | 855   | 855   | West Bengal      | 963        | 979        |
| Jharkhand         | 1000  | 964   | A & Nicobar Is.  | 496        | 81         |
| Karnataka         | 743   | 461   | Chandigarh       | 1000       | 998        |
| Kerala            | 622   | 843   | D & Nagar Haveli | 1000       | 1000       |
| Madhya Pradesh    | 626   | 593   | Daman & Diu      | 325        | 817        |
| Maharashtra       | 619   | 852   | Lakshadweep      | 760        | 1000       |
| Manipur           | 418   | 355   | Puducherry       | 1000       | 995        |
| Meghalaya         | 999   | 886   | <b>all-India</b> | <b>753</b> | <b>781</b> |

\*: only for those households with ‘piped water into dwelling/yard/plot’ or ‘public tap/standpipe’ as source of water

### 3.2.3 Bathroom and sanitation facility

3.2.3.1 In collecting information on bathroom facilities available to the members of the household, two categories of bathroom facilities were distinguished for the households that had bathroom facilities, viz., attached bathroom and detached bathroom. A bathing place which does not satisfy the criteria distinguishing a room was not considered as a bathroom. If the dwelling unit had one or more bathrooms attached to the dwelling unit (i.e., with direct access from its rooms, veranda or corridor), it was considered to have an attached bathroom. On the other hand, if the households had a bathroom within the premises but not attached to the dwelling units, they were considered to have a detached bathroom.

3.2.3.2 One of the important indicators is the availability/non-availability of bathroom facility. Table T9 shows the number per 1000 households without any bathroom facility during 2012. The table shows that 62.3 percent and 16.7 percent of households in rural India and urban India respectively did not have any bathroom facility. Among rural areas of bigger states, Jharkhand had the highest (89.4 percent) and Kerala, the lowest (9.7 percent) proportion of households without any bathroom. This situation is relatively better in urban areas. Among all bigger states in urban areas, Bihar had the highest (39.0 percent) and Uttarakhand, the lowest (2.4 percent) proportion of households without any bathroom.

Table T9: Number per 1000 households without bathroom facility during 2012

| State/UT<br>(1)   | rural<br>(2) | urban<br>(3) | State/UT<br>(1)            | rural<br>(2) | urban<br>(3) |
|-------------------|--------------|--------------|----------------------------|--------------|--------------|
| Andhra Pradesh    | 454          | 68           | Mizoram                    | 128          | 9            |
| Arunachal Pradesh | 525          | 14           | Nagaland                   | 130          | 22           |
| Assam             | 456          | 92           | Odisha                     | 882          | 259          |
| Bihar             | 819          | 390          | Punjab                     | 226          | 181          |
| Chhattisgarh      | 849          | 345          | Rajasthan                  | 586          | 158          |
| Delhi             | 67           | 68           | Sikkim                     | 63           | 22           |
| Goa               | 77           | 22           | Tamil Nadu                 | 577          | 155          |
| Gujarat           | 539          | 157          | Tripura                    | 897          | 488          |
| Haryana           | 144          | 46           | Uttarakhand                | 205          | 24           |
| Himachal Pradesh  | 317          | 126          | Uttar Pradesh              | 796          | 242          |
| Jammu & Kashmir   | 405          | 71           | West Bengal                | 730          | 266          |
| Jharkhand         | 894          | 299          | A & Nicobar Is.            | 358          | 92           |
| Karnataka         | 481          | 112          | Chandigarh                 | 179          | 217          |
| Kerala            | 97           | 53           | D & Nagar Haveli           | 841          | 676          |
| Madhya Pradesh    | 756          | 149          | Daman & Diu                | 520          | 683          |
| Maharashtra       | 542          | 179          | Lakshadweep                | 0            | 1            |
| Manipur           | 502          | 299          | Puducherry                 | 256          | 54           |
| Meghalaya         | 449          | 79           | <b>all-India (2012)</b>    | <b>623</b>   | <b>167</b>   |
|                   |              |              | <b>all-India (2008-09)</b> | <b>644</b>   | <b>215</b>   |

3.2.3.3 The next important indicator is the distance that majority of the household members had to travel for bathing purpose. In this survey, the bathing place of the household was defined as the place which was used by majority of the household members for bathing purposes. It might



be a bathroom or any other place. An enclosed area without a roof used for bathing purposes was also considered as a bathing place, but not as a bathroom. The distance of the bathing place from the dwelling unit was ascertained in this survey. Further if the household members had used more than one bathing place, the one used by the majority of the household members was taken as its bathing place.

3.2.3.4 Table T10 shows number per 1000 households having bathing places within premises during 2012. It is observed that 80.2 percent and 95.7 percent of households in rural India and urban India respectively had a bathing facility within their premises. Here ‘within the premises’ includes ‘within dwelling’ and ‘outside dwelling but within the premises’. The survey shows that during 2012, in rural areas of most of the bigger states, more than 70 percent of households had a bathing facility within their premises except in states like Odisha (25.1 percent), Chhattisgarh (27.8 percent), Jharkhand (37.9 percent), and West Bengal (47.0 percent). It is also seen that more than 75 percent of households in urban areas of each of the bigger states had a bathing facility within their premises. Among such states it was highest (99.7 percent) in Uttarakhand and lowest (76.4 percent) in Chhattisgarh.

Table T10: Number per 1000 households having bathing places within premises during 2012

| State/UT          | rural | urban | State/UT                   | rural      | urban      |
|-------------------|-------|-------|----------------------------|------------|------------|
| (1)               | (2)   | (3)   | (1)                        | (2)        | (3)        |
| Andhra Pradesh    | 959   | 978   | Mizoram                    | 897        | 996        |
| Arunachal Pradesh | 786   | 986   | Nagaland                   | 966        | 1000       |
| Assam             | 934   | 996   | Odisha                     | 251        | 828        |
| Bihar             | 811   | 916   | Punjab                     | 978        | 988        |
| Chhattisgarh      | 278   | 764   | Rajasthan                  | 841        | 966        |
| Delhi             | 1000  | 974   | Sikkim                     | 995        | 990        |
| Goa               | 997   | 1000  | Tamil Nadu                 | 799        | 939        |
| Gujarat           | 939   | 987   | Tripura                    | 468        | 872        |
| Haryana           | 973   | 992   | Uttarakhand                | 949        | 997        |
| Himachal Pradesh  | 976   | 986   | Uttar Pradesh              | 886        | 979        |
| Jammu & Kashmir   | 839   | 980   | West Bengal                | 470        | 833        |
| Jharkhand         | 379   | 858   | A & Nicobar Is.            | 787        | 974        |
| Karnataka         | 981   | 995   | Chandigarh                 | 754        | 835        |
| Kerala            | 957   | 988   | D & Nagar Haveli           | 995        | 1000       |
| Madhya Pradesh    | 825   | 973   | Daman & Diu                | 982        | 891        |
| Maharashtra       | 977   | 993   | Lakshadweep                | 1000       | 1000       |
| Manipur           | 825   | 939   | Puducherry                 | 947        | 999        |
| Meghalaya         | 761   | 976   | <b>all-India (2012)</b>    | <b>802</b> | <b>957</b> |
|                   |       |       | <b>all-India (2008-09)</b> | <b>630</b> | <b>762</b> |

3.2.3.5 The study of the sanitation facilities available to the households and the changes in the facilities over time is an important aspect of living facilities and it is closely related to the health and hygiene of the members of households and its micro-environment.

Table T 11: Indicators on households with sanitation facilities during 2012

| State/UT                   | number per 1000 households |            |                                 |            |   |            |
|----------------------------|----------------------------|------------|---------------------------------|------------|---|------------|
|                            | without latrine facility   |            | having exclusive use of latrine |            | having access to improved source of latrine |            |
|                            | rural                      | urban      | rural                           | urban      | rural                                       | urban      |
| (1)                        | (2)                        | (3)        | (4)                             | (5)        | (6)   | (7)        |
| Andhra Pradesh             | 543                        | 81         | 345                             | 681        | 445   | 910        |
| Arunachal Pradesh          | 126                        | 0          | 492                             | 679        | 465   | 979        |
| Assam                      | 137                        | 3          | 794                             | 703        | 754   | 971        |
| Bihar                      | 728                        | 208        | 188                             | 443        | 258   | 784        |
| Chhattisgarh               | 767                        | 249        | 188                             | 552        | 200   | 749        |
| Delhi                      | 0                          | 0          | 744                             | 668        | 1000  | 987        |
| Goa                        | 97                         | 40         | 711                             | 743        | 858   | 960        |
| Gujarat                    | 587                        | 62         | 366                             | 743        | 407   | 936        |
| Haryana                    | 254                        | 14         | 639                             | 818        | 742   | 982        |
| Himachal Pradesh           | 257                        | 43         | 595                             | 701        | 737   | 957        |
| Jammu & Kashmir            | 443                        | 60         | 494                             | 672        | 441   | 794        |
| Jharkhand                  | 905                        | 177        | 75                              | 570        | 89  | 801        |
| Karnataka                  | 708                        | 90         | 244                             | 672        | 284   | 877        |
| Kerala                     | 28                         | 12         | 927                             | 887        | 969   | 988        |
| Madhya Pradesh             | 790                        | 140        | 153                             | 640        | 207   | 849        |
| Maharashtra                | 540                        | 69         | 322                             | 580        | 443   | 927        |
| Manipur                    | 12                         | 0          | 786                             | 741        | 796   | 912        |
| Meghalaya                  | 45                         | 2          | 918                             | 793        | 860   | 994        |
| Mizoram                    | 7                          | 0          | 980                             | 975        | 934   | 999        |
| Nagaland                   | 0                          | 0          | 972                             | 791        | 981   | 994        |
| Odisha                     | 813                        | 182        | 124                             | 496        | 173   | 805        |
| Punjab                     | 222                        | 62         | 655                             | 581        | 776   | 933        |
| Rajasthan                  | 730                        | 142        | 215                             | 606        | 261   | 783        |
| Sikkim                     | 2                          | 0          | 857                             | 556        | 991   | 1000       |
| Tamil Nadu                 | 664                        | 122        | 275                             | 606        | 330   | 866        |
| Tripura                    | 14                         | 1          | 727                             | 555        | 886   | 981        |
| Uttarakhand                | 197                        | 16         | 644                             | 644        | 802   | 976        |
| Uttar Pradesh              | 753                        | 107        | 195                             | 642        | 224   | 867        |
| West Bengal                | 397                        | 54         | 400                             | 574        | 580   | 932        |
| A & Nicobar Is.            | 288                        | 50         | 614                             | 740        | 712   | 950        |
| Chandigarh                 | 3                          | 16         | 350                             | 567        | 997   | 984        |
| D & Nagar Haveli           | 493                        | 322        | 89                              | 291        | 507   | 678        |
| Daman & Diu                | 268                        | 1          | 380                             | 119        | 732   | 999        |
| Lakshadweep                | 0                          | 23         | 1000                            | 628        | 1000  | 977        |
| Puducherry                 | 474                        | 63         | 409                             | 772        | 526   | 936        |
| <b>all-India (2012)</b>    | <b>594</b>                 | <b>88</b>  | <b>319</b>                      | <b>639</b> | <b>388</b>                                  | <b>896</b> |
| <b>all-India (2008-09)</b> | <b>652</b>                 | <b>113</b> | <b>279</b>                      | <b>581</b> | <b>*</b>                                    | <b>*</b>   |

\*:comparative figure for 2008-09 (NSS 65<sup>th</sup> round) is not available

3.2.3.6 In *World Health Organization and United Nations Children's Fund's Global Water Supply and Sanitation Assessment 2000* Report, sanitation was defined to include connection to a sewer or septic tank system, pour-flush latrine, simple pit or ventilated improved pit latrine, with allowance for acceptable local technologies. The excreta disposal system was considered adequate if it was private or shared (but not public) and if it hygienically separated human

excreta from human contact. Information on the types of latrines, and use of latrine facilities by the households, collected in this survey, can be used to study some aspects of sanitation facilities of the households. These include ‘type of latrines available to the households’, ‘type of use of latrine’ etc.

3.2.3.7 In this survey, ‘access to latrine’ was defined in relation to the latrine that could be used by the majority of the household members, irrespective of whether it was being used or not. Information was collected on whether the household’s latrine facility was for its exclusive use or was shared with one or more households in the building, or whether households had to use public/community latrine with and without payment, or whether the household did not have access to any latrine at all. Table T11 shows number per 1000 households ‘without any latrine facilities’ and ‘having exclusive use of latrine’.

3.2.3.8 The table shows that 59.4 percent and 8.8 percent households in rural India and urban India respectively had no latrine facilities. If one considers the corresponding estimates across rural areas of bigger states, it is observed that during 2012, Jharkhand had the highest (90.5 percent) proportion of households that had no latrine facilities, much higher than the all India proportion (59.4 percent). Other states among the bigger states where the estimated proportion (among rural households) was higher than the corresponding all India figure include Tamil Nadu (66.4 percent), Karnataka (70.8 percent), Bihar (72.8 percent), Rajasthan (73.0 percent), Uttar Pradesh (75.3 percent), Chhattisgarh (76.7 percent), Madhya Pradesh (79.0 percent) and Odisha (81.3 percent). The same pattern is also observed in urban areas of these states.

3.2.3.9 Table T11 also shows that during 2012, 31.9 percent and 63.9 percent households in rural India and urban India respectively had exclusive use of latrine facilities. If one considers the corresponding estimates across rural areas of bigger states, it has been observed that during 2012, Kerala had the highest (92.7 percent) and Jharkhand, the lowest (7.5 percent) proportion of households having exclusive use of latrine facilities. In urban areas of most of the bigger states, more than 55 percent of household had exclusive use of latrine except in Bihar (44.3 percent), and Odisha (49.6 percent).

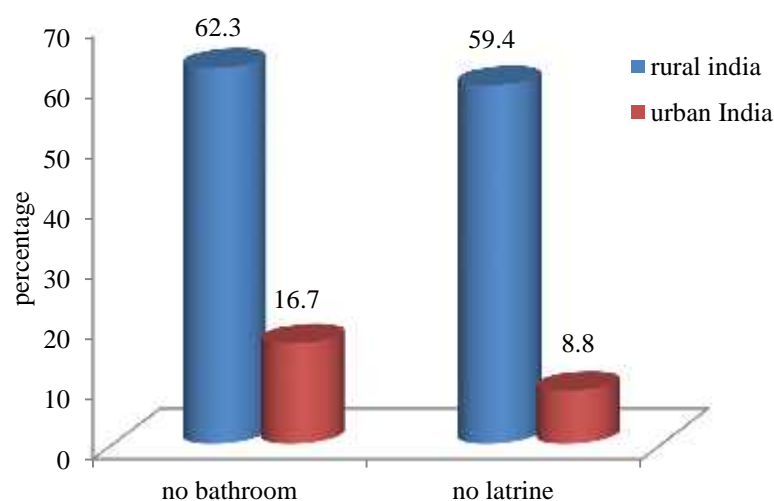
3.2.3.10 Another important aspect of the sanitation facility is whether the households have access to ‘improved source of latrine’ - this is an MDG indicator. Here ‘improved source’ of latrine includes sources such as ‘flush/pour-flush to: piped sewer system/septic tank/pit latrine’, ‘ventilated improved pit latrine’, ‘pit latrine with slab’ and ‘compositing toilet’. Table T11 shows number per 1000 households having access to ‘improved source’ of latrine.

3.2.3.11 It has been observed that during 2012, 38.8 percent and 89.6 percent households in rural and urban India respectively had access to ‘improved source’ of latrine. If one considers the corresponding estimates across rural areas of bigger states, it has been observed that during 2012,

Kerala had the highest (96.9 percent) and Jharkhand, the lowest (8.9 percent) proportion of households having access to ‘improved source’ of latrine. In urban areas of each of the bigger states, more than 75 percent of households had access to ‘improved source’ of latrine and it was highest (98.8 percent) in Kerala and lowest (74.9 percent) in Chhattisgarh.

3.2.3.12 Chart C3 shows the percentage of households without ‘bathroom’ and ‘latrine’ in rural and urban area during 2012. It reveals wide gap between rural and urban India in respect of bathroom and sanitation facilities.

Chart C3: Percentage of households without ‘bathroom’ and ‘latrine’ in rural and urban India during 2012



### 3.2.4 Facility in use of electricity

3.2.4.1 Electricity is an important facility to households and has a bearing on the quality of life of the population. The proportion of households who got electricity for domestic use during 2012 is, obviously, a matter of great interest. In this survey, information was collected on availability of electricity to households for domestic use. Besides, for the households that had electricity for domestic use, data on the type of electrical wiring were also collected.

3.2.4.2 Table T12 shows the number per 1000 households who had electricity for domestic purposes during 2012. The table shows that during 2012, 80.0 percent and 97.9 percent households in rural and urban India respectively had electricity for domestic use. If one considers the corresponding estimates across rural areas of bigger states, it has been observed that during 2012 Himachal Pradesh had the highest (99.8 percent) and Bihar had the lowest (46.7 percent)

proportion of households having electricity for domestic use. In urban areas of each of the bigger states, more than 85 percent of households had electricity for domestic use and it was highest (99.9 percent) in Delhi as well as in Jammu and Kashmir and lowest (89.2 percent) in Bihar.

Table T12: Number per 1000 households having electricity for domestic use during 2012

| State/UT          | rural | urban | State/UT                   | rural      | urban      |
|-------------------|-------|-------|----------------------------|------------|------------|
| (1)               | (2)   | (3)   | (1)                        | (2)        | (3)        |
| Andhra Pradesh    | 983   | 993   | Mizoram                    | 908        | 1000       |
| Arunachal Pradesh | 667   | 981   | Nagaland                   | 997        | 995        |
| Assam             | 708   | 989   | Odisha                     | 752        | 973        |
| Bihar             | 467   | 892   | Punjab                     | 993        | 997        |
| Chhattisgarh      | 878   | 991   | Rajasthan                  | 832        | 984        |
| Delhi             | 971   | 999   | Sikkim                     | 991        | 1000       |
| Goa               | 998   | 1000  | Tamil Nadu                 | 973        | 988        |
| Gujarat           | 959   | 989   | Tripura                    | 898        | 989        |
| Haryana           | 996   | 993   | Uttarakhand                | 964        | 991        |
| Himachal Pradesh  | 998   | 997   | Uttar Pradesh              | 557        | 924        |
| Jammu & Kashmir   | 955   | 999   | West Bengal                | 818        | 968        |
| Jharkhand         | 626   | 944   | A & Nicobar Is.            | 870        | 999        |
| Karnataka         | 953   | 995   | Chandigarh                 | 1000       | 983        |
| Kerala            | 967   | 987   | D & Nagar Haveli           | 993        | 1000       |
| Madhya Pradesh    | 844   | 994   | Daman & Diu                | 1000       | 1000       |
| Maharashtra       | 934   | 991   | Lakshadweep                | 1000       | 1000       |
| Manipur           | 948   | 994   | Puducherry                 | 1000       | 991        |
| Meghalaya         | 796   | 983   | <b>all-India (2012)</b>    | <b>800</b> | <b>979</b> |
|                   |       |       | <b>all-India (2008-09)</b> | <b>660</b> | <b>961</b> |

### 3.2.5 Secured tenure

3.2.5.1 The accommodation used by the households for living is an important aspect of housing condition and ‘tenure type of the dwelling unit’ of the households is considered as one of the important parameters in this connection. The tenure type of the dwelling unit provides an overview of the tenurial status and corresponding security in the housing condition. Ownership of the dwelling unit can be considered as the most secured tenure status. Besides, tenancy can also offer a fairly safe tenure to the households, especially when formal contract exists. Households residing in the employer’s dwelling may also enjoy safe tenurial status. As per Indicator of MDG, secured tenure means those households that own or are purchasing their homes, are renting privately or are in social housing or sub-tenancy.

3.2.5.2 In this survey, the code structure was made elaborate with splitting of tenure type ‘owned dwelling’ into freehold and leasehold, and other hired dwelling (except the employer quarter) into hired dwelling with written contract and without written contract. In this analysis the ‘secured tenure’ of the dwelling includes the tenurial statuses: ‘owned- freehold/leasehold’, ‘hired: employer quarter’ and ‘hired dwelling units with written contract’.

3.2.5.3 Table T13 shows number per 1000 households ‘with secured tenure’ during 2012. The table shows that 94.2 percent and 71.3 percent households in rural India and urban India respectively had secured tenure. If one considers the corresponding estimates across rural areas of bigger states, it is observed that more than 80 percent of households in each of the bigger states had secured tenure. Among them the proportion was highest (99.2 percent) in Jammu & Kashmir and lowest (81.6 percent) in Uttarakhand. Among urban areas of bigger states, Kerala had the highest (90.2 percent) and Andhra Pradesh, the lowest (45.8 percent) proportion of households with ‘secured tenure’.

Table T13: Number per 1000 households with secured tenure during 2012

| State/UT          | rural | urban | State/UT                   | rural      | urban      |
|-------------------|-------|-------|----------------------------|------------|------------|
| (1)               | (2)   | (3)   | (1)                        | (2)        | (3)        |
| Andhra Pradesh    | 833   | 458   | Mizoram                    | 969        | 732        |
| Arunachal Pradesh | 956   | 640   | Nagaland                   | 984        | 708        |
| Assam             | 969   | 652   | Odisha                     | 923        | 569        |
| Bihar             | 988   | 695   | Punjab                     | 954        | 746        |
| Chhattisgarh      | 954   | 838   | Rajasthan                  | 966        | 756        |
| Delhi             | 659   | 665   | Sikkim                     | 815        | 399        |
| Goa               | 816   | 877   | Tamil Nadu                 | 870        | 596        |
| Gujarat           | 961   | 761   | Tripura                    | 953        | 736        |
| Haryana           | 948   | 771   | Uttarakhand                | 816        | 710        |
| Himachal Pradesh  | 946   | 477   | Uttar Pradesh              | 985        | 789        |
| Jammu & Kashmir   | 992   | 828   | West Bengal                | 977        | 789        |
| Jharkhand         | 990   | 645   | A & Nicobar Is.            | 617        | 645        |
| Karnataka         | 910   | 714   | Chandigarh                 | 279        | 507        |
| Kerala            | 972   | 902   | D & Nagar Haveli           | 578        | 502        |
| Madhya Pradesh    | 957   | 776   | Daman & Diu                | 649        | 147        |
| Maharashtra       | 916   | 824   | Lakshadweep                | 943        | 585        |
| Manipur           | 985   | 914   | Puducherry                 | 890        | 666        |
| Meghalaya         | 976   | 743   | <b>all-India (2012)</b>    | <b>942</b> | <b>713</b> |
|                   |       |       | <b>all-India (2008-09)</b> | <b>958</b> | <b>713</b> |

### 3.2.6 Distance travel to place of work

3.2.6.1 Distance travelled to the place of work is an important aspect of the lives of the people. Considered important by town planners, it is a prime factor in the study of different aspects of place of residence and place of work of the people. In the present survey, however, collection of data on this aspect was limited to the maximum distance (in kilometres) to the place of work normally travelled by any earner of the household (hereafter referred to as distance travelled). The pattern of variation in the maximum distance required to be travelled by any earner of the household is discussed in Table T14.

Table T14: Particulars of maximum distance normally travelled to the place of work by any earner of the household during 2012

| State/UT          | number per 1000 households |       |                                     |       | State/UT                   | number per 1000 households |            |                                     |            |
|-------------------|----------------------------|-------|-------------------------------------|-------|----------------------------|----------------------------|------------|-------------------------------------|------------|
|                   | not required to travel     |       | required to travel less than 5 k.m. |       |                            | not required to travel     |            | required to travel less than 5 k.m. |            |
|                   | rural                      | urban | rural                               | urban |                            | rural                      | urban      | rural                               | urban      |
| (1)               | (2)                        | (3)   | (4)                                 | (5)   | (1)                        | (2)                        | (3)        | (4)                                 | (5)        |
| Andhra Pradesh    | 144                        | 225   | 636                                 | 425   | Mizoram                    | 283                        | 332        | 573                                 | 575        |
| Arunachal Pradesh | 216                        | 343   | 707                                 | 548   | Nagaland                   | 181                        | 168        | 575                                 | 711        |
| Assam             | 74                         | 223   | 773                                 | 580   | Odisha                     | 141                        | 220        | 688                                 | 481        |
| Bihar             | 108                        | 306   | 679                                 | 433   | Punjab                     | 108                        | 179        | 562                                 | 468        |
| Chhattisgarh      | 88                         | 115   | 760                                 | 487   | Rajasthan                  | 168                        | 202        | 601                                 | 468        |
| Delhi             | 66                         | 124   | 602                                 | 434   | Sikkim                     | 413                        | 306        | 467                                 | 575        |
| Goa               | 279                        | 144   | 267                                 | 277   | Tamil Nadu                 | 95                         | 168        | 527                                 | 452        |
| Gujarat           | 110                        | 118   | 654                                 | 541   | Tripura                    | 123                        | 255        | 634                                 | 465        |
| Haryana           | 117                        | 121   | 612                                 | 515   | Uttar Pradesh              | 111                        | 288        | 771                                 | 494        |
| Himachal Pradesh  | 156                        | 305   | 608                                 | 474   | Uttaranchal                | 111                        | 202        | 705                                 | 493        |
| Jammu & Kashmir   | 123                        | 178   | 460                                 | 517   | West Bengal                | 99                         | 182        | 609                                 | 422        |
| Jharkhand         | 135                        | 232   | 621                                 | 519   | A & Nicobar Is.            | 121                        | 159        | 525                                 | 510        |
| Karnataka         | 89                         | 197   | 714                                 | 378   | Chandigarh                 | 138                        | 139        | 372                                 | 315        |
| Kerala            | 219                        | 238   | 426                                 | 325   | D & Nagar Haveli           | 0                          | 28         | 758                                 | 723        |
| Madhya Pradesh    | 85                         | 216   | 733                                 | 485   | Daman & Diu                | 34                         | 41         | 549                                 | 877        |
| Maharashtra       | 112                        | 158   | 682                                 | 402   | Lakshadweep                | 1                          | 361        | 749                                 | 431        |
| Manipur           | 114                        | 186   | 660                                 | 549   | Puducherry                 | 160                        | 273        | 457                                 | 404        |
| Meghalaya         | 95                         | 255   | 636                                 | 475   | <b>all-India (2012)</b>    | <b>117</b>                 | <b>186</b> | <b>653</b>                          | <b>449</b> |
|                   |                            |       |                                     |       | <b>all-India (2008-09)</b> | <b>150</b>                 | <b>197</b> | <b>637</b>                          | <b>475</b> |

3.2.6.2 The results show, firstly, that during 2012, earners of 11.7 percent of households in rural India and 18.6 percent of the households in urban India did not require to travel to their place of work. For majority of households in both rural and urban areas, distance travelled by the earners was less than 5 k.m. In 77.0 percent households of rural India, any earners either did not have to travel to work or, even if they did, travelled 5 km or less to reach their place of work. The corresponding figure for urban India was 63.5 percent. Across rural areas of bigger states, it is observed Assam had the highest (77.3 percent) and Kerala, the lowest (42.6 percent) proportion of households for which the maximum distance travelled by any earner to reach the place of work was less than 5 k.m. Similarly among urban areas of bigger states, Assam had the highest (58.0 percent) and Kerala, the lowest (32.5 percent) proportion of households for which the maximum distance travelled by any earner to reach the place of work was less than 5 k.m.

### 3.3 Particulars of dwelling

3.3.1 The characteristics of the house and the dwelling unit of the households viz. the type of structure of dwelling unit, use of house, condition of the structure, availability of floor area, etc., constitute important aspects of housing condition. In this survey, type of structures of the dwelling unit of households was categorised as pucca, semi-pucca and katcha, the last one, i.e. katcha, being further split into two categories: serviceable katcha and unserviceable katcha. This



categorisation of the dwelling unit into different types of structures was on the basis of materials used in the construction of roof and wall of the dwelling unit.

3.3.2 A 'pucca structure' was one whose walls and roofs were made of materials such as cement, concrete, oven burnt bricks, hollow cement / ash bricks, stone, stone blocks, jack boards (cement plastered reeds), iron, zinc or other metal sheets, timber, tiles, slate, corrugated iron, asbestos cement sheet, veneer, plywood, artificial wood of synthetic material and poly vinyl chloride (PVC) material. A structure which had walls and roof made of non-pucca materials was regarded as a katcha structure where unburnt bricks, bamboo, mud, grass, leaves, reeds, thatch, etc were considered as 'non-pucca' materials. Table T15 shows number per 1000 households living in a house with 'pucca structure', 'semi-pucca structure' and 'good ventilation' during 2012.

3.3.3 The results show that 65.8 percent and 93.6 percent households in rural India and urban India respectively lived in a house with pucca structure, whereas 24.6 percent and 5.0 percent of the households in rural and urban areas respectively lived in a house with semi-pucca structure during 2012. In rural areas among bigger states, Uttarakhand (97.0 percent), Punjab (96.2 percent), Haryana (93.2 percent) had relatively large proportion of households living in a house with pucca structure, whereas for most of the North-eastern states like Arunachal Pradesh (20.1 percent), Tripura (14.8 percent), Manipur (12.1 percent), Assam (26.6 percent), the proportion was relatively low. In urban areas too, the proportion of households that lived in pucca structures was low in relation to the all-India average in most of the North-eastern states, such as Manipur (33.8 percent), Tripura (66.1 percent) and Arunachal Pradesh (68.8 percent).

3.3.4 Following the same pattern, a large proportion of urban households in North-eastern states lived in houses with semi-pucca structure, like Manipur (64.0 percent), Tripura (33.3 percent), Arunachal Pradesh (21.9 percent). In rural India, apart from some North-eastern states, semi-pucca houses were prevalent in Jharkhand (60.6 percent) and Chhattisgarh (58.7 percent).

3.3.5 Ventilation in dwelling unit is an important aspect of health of the dwellers. The status of the ventilation of dwelling unit was also ascertained in this survey. It was ascertained whether the ventilation of the dwelling unit is 'good' or 'satisfactory' or 'bad'. Table T15 shows the number per 1000 households living in a house (dwelling unit) with 'good ventilation' irrespective of structure type. It is observed that 26.3 percent and 47.1 percent households in rural India and urban India respectively had dwelling units with 'good ventilation'.

3.3.6 Considering the corresponding estimates across rural areas of bigger states, it is observed that during 2012 the proportion of households that had dwelling units with 'good ventilation' was low in states like Jharkhand (9.8 percent), Odisha (12.6 percent), Chhattisgarh (13.9 percent). In urban areas of bigger states, Jharkhand had the lowest (32.4 percent) proportion of households with dwelling units having 'good ventilation'. Among North-eastern states, in Arunachal Pradesh (33.3 percent) and Manipur (34.1 percent), the proportion of households that had dwelling units with 'good ventilation' was relatively low.

Table T15: Number per 1000 households living in a house with 'pucca structure', 'semi-pucca structure' and 'good ventilation' during 2012

| State/UT                   | number per 1000 households living in a house with |            |                      |           |                  |            |
|----------------------------|---|------------|----------------------|-----------|------------------|------------|
|                            | pucca structure                                   |            | semi-pucca structure |           | good ventilation |            |
|                            | rural   | urban      | rural                | urban     | rural            | urban      |
| (1)                        | (2)   | (3)        | (4)                  | (5)       | (6)              | (7)        |
| Andhra Pradesh             | 796   | 953        | 136                  | 29        | 328              | 518        |
| Arunachal Pradesh          | 201   | 688        | 255                  | 219       | 142              | 333        |
| Assam                      | 266   | 804        | 580                  | 183       | 157              | 469        |
| Bihar                      | 588   | 901        | 213                  | 50        | 256              | 372        |
| Chhattisgarh               | 293   | 844        | 587                  | 141       | 139              | 349        |
| Delhi                      | 1000  | 996        | 0                    | 2         | 209              | 378        |
| Goa                        | 852   | 878        | 143                  | 110       | 409              | 449        |
| Gujarat                    | 801   | 979        | 182                  | 17        | 292              | 560        |
| Haryana                    | 932   | 976        | 51                   | 22        | 216              | 459        |
| Himachal Pradesh           | 848   | 976        | 150                  | 24        | 341              | 419        |
| Jammu & Kashmir            | 632   | 930        | 180                  | 53        | 346              | 485        |
| Jharkhand                  | 322   | 903        | 606                  | 94        | 98               | 324        |
| Karnataka                  | 654   | 927        | 316                  | 69        | 312              | 589        |
| Kerala                     | 854   | 908        | 129                  | 80        | 505              | 529        |
| Madhya Pradesh             | 599   | 932        | 375                  | 56        | 235              | 586        |
| Maharashtra                | 771   | 971        | 212                  | 23        | 225              | 409        |
| Manipur                    | 121   | 338        | 618                  | 640       | 299              | 341        |
| Meghalaya                  | 495   | 931        | 377                  | 66        | 384              | 731        |
| Mizoram                    | 574   | 897        | 213                  | 92        | 333              | 561        |
| Nagaland                   | 414   | 843        | 519                  | 152       | 417              | 432        |
| Odisha                     | 441   | 864        | 271                  | 80        | 126              | 363        |
| Punjab                     | 962   | 985        | 22                   | 6         | 361              | 384        |
| Rajasthan                  | 762   | 965        | 152                  | 23        | 273              | 416        |
| Sikkim                     | 606   | 969        | 340                  | 31        | 701              | 833        |
| Tamil Nadu                 | 691   | 891        | 189                  | 81        | 446              | 527        |
| Tripura                    | 148   | 661        | 797                  | 333       | 297              | 607        |
| Uttarakhand                | 970   | 991        | 14                   | 4         | 600              | 613        |
| Uttar Pradesh              | 730   | 950        | 159                  | 30        | 175              | 413        |
| West Bengal                | 476   | 895        | 400                  | 95        | 259              | 417        |
| A & Nicobar Is.            | 671   | 950        | 310                  | 50        | 485              | 471        |
| Chandigarh                 | 995   | 941        | 2                    | 0         | 398              | 474        |
| D & Nagar Haveli           | 626   | 858        | 365                  | 142       | 79               | 204        |
| Daman & Diu                | 991   | 997        | 7                    | 1         | 229              | 62         |
| Lakshadweep                | 981   | 1000       | 14                   | 0         | 558              | 539        |
| Puducherry                 | 617   | 940        | 211                  | 44        | 479              | 659        |
| <b>all-India (2012)</b>    | <b>658</b>  | <b>936</b> | <b>246</b>           | <b>50</b> | <b>263</b>       | <b>471</b> |
| <b>all-India (2008-09)</b> | <b>554</b>  | <b>917</b> | <b>276</b>           | <b>62</b> | <b>*</b>         | <b>*</b>   |

\*:comparative figure for 2008-09 (NSS 65<sup>th</sup> round) is not available

3.3.7 The survey also ascertained the floor area of the dwelling. Average floor area of dwelling can be considered as an important indicator of quality of housing in any region. Table T16 shows the average floor area (in sq. m.) of dwelling units for all States and Union Territories in both rural and urban sector. The table shows that during 2012, the average floor area of the dwelling in rural India and urban India were 40.03 sq. m. and 39.20 sq. m. respectively.

Table T16: Average floor area ( sq. m.) of the dwelling, number per 1000 households with separate kitchen and separate room for married couples, number ('00) of households with married couples during 2012

| State/UT          | avg. floor area<br>(sq. m.) of the dwelling |              | number per 1000 households with |            |                                      |            | number ('00) of<br>households with<br>married couples |               |
|-------------------|---|--------------|---------------------------------|------------|--------------------------------------|------------|---|---------------|
|                   |   |              | separate kitchen                |            | separate room for<br>married couples |            |   |               |
|                   | rural                                       | urban        | rural                           | urban      | rural                                | urban      | rural   | urban         |
| (1)               | (2)   | (3)          | (4)                             | (5)        | (6)                                  | (7)        | (8)   | (9)           |
| Andhra Pradesh    | 29.85                                       | 32.75        | 401                             | 634        | 509                                  | 547        | 126248  | 58596         |
| Arunachal Pradesh | 37.47                                       | 47.94        | 365                             | 711        | 560                                  | 689        | 1688  | 408           |
| Assam             | 57.78                                       | 53.75        | 862                             | 803        | 729                                  | 702        | 45075   | 5246          |
| Bihar             | 31.65                                       | 32.42        | 249                             | 422        | 707                                  | 523        | 147924  | 14273         |
| Chhattisgarh      | 54.01                                       | 45.02        | 584                             | 725        | 579                                  | 594        | 35389   | 9520          |
| Delhi             | 39.24                                       | 30.60        | 906                             | 647        | 862                                  | 617        | 4820  | 25707         |
| Goa               | 58.88                                       | 55.74        | 897                             | 888        | 538                                  | 589        | 1170  | 1564          |
| Gujarat           | 48.40                                       | 44.46        | 486                             | 730        | 572                                  | 628        | 61197   | 50027         |
| Haryana           | 54.34                                       | 51.15        | 685                             | 821        | 625                                  | 722        | 29413   | 16614         |
| Himachal Pradesh  | 60.14                                       | 36.17        | 868                             | 809        | 692                                  | 551        | 10673   | 1787          |
| Jammu & Kashmir   | 56.08                                       | 57.51        | 555                             | 590        | 726                                  | 658        | 13115   | 3816          |
| Jharkhand         | 40.25                                       | 37.36        | 340                             | 665        | 558                                  | 518        | 39627   | 10257         |
| Karnataka         | 35.91                                       | 36.52        | 647                             | 718        | 488                                  | 545        | 70671   | 42410         |
| Kerala            | 64.01                                       | 68.91        | 939                             | 918        | 687                                  | 719        | 42784   | 18462         |
| Madhya Pradesh    | 42.26                                       | 45.73        | 331                             | 651        | 585                                  | 593        | 97803   | 33956         |
| Maharashtra       | 39.05                                       | 34.94        | 540                             | 616        | 579                                  | 511        | 121605  | 87917         |
| Manipur           | 69.58                                       | 68.77        | 594                             | 666        | 833                                  | 820        | 2902  | 1127          |
| Meghalaya         | 52.21                                       | 53.57        | 850                             | 879        | 824                                  | 721        | 3705  | 827           |
| Mizoram           | 60.50                                       | 58.14        | 58                              | 85         | 698                                  | 660        | 918   | 855           |
| Nagaland          | 67.90                                       | 60.36        | 726                             | 820        | 947                                  | 777        | 3537  | 750           |
| Odisha            | 31.27                                       | 34.04        | 474                             | 633        | 636                                  | 548        | 67522   | 9636          |
| Punjab            | 58.19                                       | 40.47        | 654                             | 635        | 703                                  | 582        | 28582   | 17103         |
| Rajasthan         | 42.71                                       | 41.40        | 424                             | 639        | 559                                  | 628        | 80385   | 28355         |
| Sikkim            | 51.98                                       | 38.14        | 902                             | 562        | 787                                  | 506        | 852   | 210           |
| Tamil Nadu        | 32.58                                       | 35.76        | 577                             | 735        | 529                                  | 552        | 83891   | 67864         |
| Tripura           | 44.37                                       | 39.33        | 917                             | 803        | 734                                  | 592        | 6554  | 1111          |
| Uttarakhand       | 39.13                                       | 43.29        | 765                             | 772        | 610                                  | 549        | 13722   | 3339          |
| Uttar Pradesh     | 40.87                                       | 41.86        | 253                             | 571        | 565                                  | 603        | 233590  | 68144         |
| West Bengal       | 32.93                                       | 35.23        | 565                             | 580        | 595                                  | 553        | 135162  | 52150         |
| A & Nicobar Is.   | 55.78                                       | 48.13        | 891                             | 869        | 547                                  | 556        | 438   | 275           |
| Chandigarh        | 24.99                                       | 29.66        | 429                             | 628        | 367                                  | 548        | 128   | 1771          |
| D & Nagar Haveli  | 48.69                                       | 39.11        | 491                             | 432        | 265                                  | 473        | 223   | 173           |
| Daman & Diu       | 35.70                                       | 15.93        | 478                             | 119        | 490                                  | 203        | 98  | 298           |
| Lakshadweep       | 83.41                                       | 58.99        | 975                             | 776        | 909                                  | 538        | 53  | 36            |
| Puducherry        | 36.79                                       | 37.94        | 547                             | 826        | 451                                  | 617        | 945   | 1689          |
| <b>all-India</b>  | <b>40.03</b>                                | <b>39.20</b> | <b>474</b>                      | <b>660</b> | <b>594</b>                           | <b>576</b> | <b>1512409</b>  | <b>636273</b> |

3.3.8 Considering corresponding estimates across rural areas of bigger states, it is observed that Kerala had the highest (64.01 sq. m.) and Andhra Pradesh (29.85 sq. m.), the lowest average floor area of the dwelling. Among North-eastern states, the same was 69.58 sq m. in Manipur and 67.90 sq. m. in Nagaland. Similarly among urban areas of bigger states, Kerala had the highest (68.91 sq. m.) and Delhi had the lowest (30.60 sq. m.) average floor area of the dwelling.

3.3.9 Table T16 also shows the number per 1000 households with ‘separate kitchen’ during 2012. It is observed that, 47.4 percent households in rural India and 66.0 percent households in urban India had a separate kitchen in their dwellings. In rural areas of bigger states, Kerala had the highest (93.9 percent) proportion of households having a separate kitchen followed by Himachal Pradesh (86.8 percent) and Assam (86.2 percent); whereas Bihar had the lowest (24.9 percent) proportion of households having a separate kitchen preceded by Uttar Pradesh (25.3 percent), Madhya Pradesh (33.1 percent) and Jharkhand (34.0 percent). Similarly among urban areas of bigger states, Kerala had the highest (91.8 percent) and Bihar had the lowest (42.2 percent) proportion of households having a separate kitchen.

3.3.10 Overcrowding has various adverse effects to leading a healthy and undisturbed life and hence is considered as an important problem to be addressed by urban planning. Availability of a separate room within a dwelling for married couples means less overcrowding within a household. In this survey, ‘married couples’ were the couples either formed through marriage or through the system of living-in. Total number of married couples in the household was recorded irrespective of their ages. When both the husband and the wife (or, the male and female partners) were household members, they were considered for counting of the number of married couples. If one of them was a household member and the other was not, they were not counted as a married couple. Further in this survey, a man with two wives in a household constituted two married couples but one woman with two husbands in a household formed a single couple.

3.3.11 Number per 1000 households with ‘separate room for married couples’ during 2012 is presented in Table T16. In this survey, a couple was considered ‘having separate room’ even if they had to share the room with children of age 10 years or less. Also a couple living in a single room-cum-kitchen was considered to have a separate room. For this indicator, all households had been considered irrespective of whether they had any married couples or not. It is observed that 59.4 percent households in rural India and 57.6 percent households in urban India had a separate room for married couples. The corresponding estimates across rural areas of bigger states shows that Assam had the highest (72.9 percent) and Karnataka had the lowest (48.8 percent) proportion of households having separate room for married couples. Similarly among urban areas of all the states, Haryana had the highest (72.2 percent) and Maharashtra, the lowest (51.1 percent) proportion of households having separate room for married couples.

### **3.4 Micro environment**

3.4.1 The environment in which members of household live is very important in maintaining their health and hygiene. It is also very important for maintaining environmental balance and overall cleanliness of the household’s surroundings. In this section, three main aspects, viz. drainage arrangement, garbage disposal system and availability of direct opening to roads are discussed.

3.4.2 Proper drainage arrangement meant a system of easy carrying -off waste water and liquid waste of the house without any overflow or seepage. This is an essential requirement for maintaining hygienic condition surrounding the house. In this survey, for households living in a house, it was ascertained whether the household had any drainage system or not. And if a household had some drainage system, then it was ascertained whether the drainage system was underground or covered pucca or open pucca or open katcha.

Table T 17R: Some Key Indicators of households on micro environment during 2012

| State/UT          | number per 1000 households with |                              |                            | State/UT                   | number per 1000 households with |                              |                            |
|-------------------|---------------------------------|------------------------------|----------------------------|----------------------------|---------------------------------|------------------------------|----------------------------|
|                   | improved drainage facility      | garbage disposal arrangement | no direct opening to road* |                            | improved drainage facility      | garbage disposal arrangement | no direct opening to road* |
| (1)               | (2)                             | (3)                          | (4)                        | (1)                        | (2)                             | (3)                          | (4)                        |
| <b>rural</b>      |                                 |                              |                            |                            |                                 |                              |                            |
| Andhra Pradesh    | 422                             | 502                          | 59                         | Mizoram                    | 48                              | 439                          | 116                        |
| Arunachal Pradesh | 112                             | 353                          | 419                        | Nagaland                   | 288                             | 767                          | 74                         |
| Assam             | 41                              | 275                          | 61                         | Odisha                     | 91                              | 163                          | 129                        |
| Bihar             | 206                             | 128                          | 201                        | Punjab                     | 793                             | 289                          | 22                         |
| Chhattisgarh      | 182                             | 639                          | 137                        | Rajasthan                  | 222                             | 285                          | 204                        |
| Delhi             | 913                             | 775                          | 0                          | Sikkim                     | 374                             | 119                          | 464                        |
| Goa               | 550                             | 295                          | 60                         | Tamil Nadu                 | 290                             | 363                          | 76                         |
| Gujarat           | 261                             | 496                          | 171                        | Tripura                    | 12                              | 71                           | 49                         |
| Haryana           | 817                             | 760                          | 46                         | Uttarakhand                | 425                             | 262                          | 276                        |
| Himachal Pradesh  | 240                             | 227                          | 275                        | Uttar Pradesh              | 495                             | 276                          | 187                        |
| Jammu & Kashmir   | 342                             | 185                          | 367                        | West Bengal                | 87                              | 112                          | 160                        |
| Jharkhand         | 110                             | 141                          | 206                        | A & Nicobar Is.            | 241                             | 306                          | 222                        |
| Karnataka         | 433                             | 569                          | 93                         | Chandigarh                 | 954                             | 976                          | 16                         |
| Kerala            | 413                             | 123                          | 144                        | D & Nagar Haveli           | 181                             | 186                          | 260                        |
| Madhya Pradesh    | 197                             | 215                          | 134                        | Daman & Diu                | 598                             | 225                          | 256                        |
| Maharashtra       | 430                             | 549                          | 158                        | Lakshadweep                | 322                             | 564                          | 644                        |
| Manipur           | 100                             | 661                          | 127                        | Puducherry                 | 279                             | 594                          | 0                          |
| Meghalaya         | 179                             | 206                          | 163                        | <b>all-India (2012)</b>    | <b>317</b>                      | <b>320</b>                   | <b>146</b>                 |
|                   |                                 |                              |                            | <b>all-India (2008-09)</b> | <b>245</b>                      | <b>243</b>                   | <b>177</b>                 |

\*: includes road/lane/constructed path

3.4.3 Table T17R and Table 17U shows number per 1000 households with improved drainage facility for rural and urban areas respectively, where ‘improved drainage’ includes the drainage systems like ‘underground’, ‘covered pucca’ and ‘open pucca’. The table shows that in rural India and urban India 31.7 percent and 82.5 percent households respectively had ‘improved drainage’ facility during 2012. From the estimates across rural areas of bigger states, it is observed that Haryana had the highest (81.7 percent) and Assam, the lowest (4.1 percent) proportion of households with ‘improved drainage’ facility. The proportion was also seen to be low in states like West Bengal (8.7 percent) and Odisha (9.1 percent). Similarly among urban areas of all bigger states, Delhi had the highest (96.4 percent) proportion of households with ‘improved drainage’ facility. It is observed that this proportion was low for most of the North-eastern states.

Table T 17U: Some Key Indicators of households on micro environment during 2012

| State/UT          | number per 1000 households with |                              |                            | State/UT                   | number per 1000 households with |                              |                            |
|-------------------|---------------------------------|------------------------------|----------------------------|----------------------------|---------------------------------|------------------------------|----------------------------|
|                   | improved drainage facility      | garbage disposal arrangement | no direct opening to road* |                            | improved drainage facility      | garbage disposal arrangement | no direct opening to road* |
| (1)               | (2)                             | (3)                          | (4)                        | (1)                        | (2)                             | (3)                          | (4)                        |
| <b>urban</b>      |                                 |                              |                            |                            |                                 |                              |                            |
| Andhra Pradesh    | 903                             | 903                          | 8                          | Mizoram                    | 485                             | 775                          | 120                        |
| Arunachal Pradesh | 685                             | 646                          | 41                         | Nagaland                   | 689                             | 948                          | 60                         |
| Assam             | 519                             | 631                          | 23                         | Odisha                     | 682                             | 630                          | 55                         |
| Bihar             | 644                             | 335                          | 172                        | Punjab                     | 890                             | 694                          | 3                          |
| Chhattisgarh      | 613                             | 551                          | 75                         | Rajasthan                  | 796                             | 615                          | 47                         |
| Delhi             | 964                             | 926                          | 38                         | Sikkim                     | 936                             | 856                          | 186                        |
| Goa               | 663                             | 438                          | 180                        | Tamil Nadu                 | 796                             | 834                          | 17                         |
| Gujarat           | 873                             | 834                          | 36                         | Tripura                    | 353                             | 311                          | 2                          |
| Haryana           | 949                             | 862                          | 33                         | Uttarakhand                | 890                             | 912                          | 55                         |
| Himachal Pradesh  | 708                             | 661                          | 83                         | Uttar Pradesh              | 899                             | 681                          | 63                         |
| Jammu & Kashmir   | 815                             | 664                          | 62                         | West Bengal                | 648                             | 681                          | 61                         |
| Jharkhand         | 623                             | 402                          | 48                         | A & Nicobar Is.            | 813                             | 803                          | 73                         |
| Karnataka         | 896                             | 862                          | 45                         | Chandigarh                 | 833                             | 967                          | 19                         |
| Kerala            | 644                             | 243                          | 70                         | D & Nagar Haveli           | 465                             | 221                          | 254                        |
| Madhya Pradesh    | 818                             | 683                          | 51                         | Daman & Diu                | 978                             | 343                          | 115                        |
| Maharashtra       | 892                             | 908                          | 93                         | Lakshadweep                | 621                             | 560                          | 0                          |
| Manipur           | 288                             | 826                          | 80                         | Puducherry                 | 864                             | 799                          | 7                          |
| Meghalaya         | 704                             | 834                          | 39                         | <b>all-India (2012)</b>    | <b>825</b>                      | <b>758</b>                   | <b>50</b>                  |
|                   |                                 |                              |                            | <b>all-India (2008-09)</b> | <b>794</b>                      | <b>786</b>                   | <b>55</b>                  |

\*: includes road/lane/constructed path

3.4.4 Another important aspect is the garbage collection system. This is an arrangement to carry away the refuse and waste of households to some dumping place away from the residential areas. Table T17R and Table 17U shows number per 1000 households with garbage disposal arrangement in the rural and urban India respectively. The tables show that in rural India and urban India 32.0 percent and 75.8 percent households respectively had some garbage disposal arrangement during 2012. In rural areas of bigger states, Haryana had the highest (76.0 percent) and West Bengal had the lowest (11.2 percent) proportion of households with garbage disposal arrangement. Similarly among urban areas of bigger states, Uttarakhand had the highest (91.2 percent) and Kerala, the lowest (24.3 percent) proportion of households with garbage disposal arrangement.

3.4.5 These two aspects, viz., drainage arrangement and garbage disposal system, are the aspects mainly associated with hygiene and cleanliness of the house. But another important aspect of living condition and facility is the availability of direct opening to road from the house. A household living in a house without any direct opening to the road appears to be deprived of one important facility for trouble-free movement. In this survey it was ascertained whether a household had any 'direct opening to road/lane/constructed path'.

3.4.6 Table T17R and Table 17U also show the number per 1000 households with ‘no direct opening to road/lane/constructed path’ in rural and urban India. The tables show that in rural India and urban India during 2012, 14.6 percent and 5.0 percent households respectively lived in houses without any ‘direct opening to road/lane/constructed path’. In rural areas of bigger states, Jammu and Kashmir had the highest (36.7 percent) and Punjab, the lowest (2.2 percent) proportion of households living in houses without any ‘direct opening to road/lane/constructed path’. Similarly among urban areas of bigger states, Bihar had the highest (17.2 percent) and Punjab, the lowest (0.3 percent) proportion of households living in houses without any ‘direct opening to road/lane/constructed path’.

### **3.5 Some general particulars of households living in urban slums/squatter settlements**

3.5.1 In this survey some general household particulars, along with particulars of facilities like drinking water, latrine etc., were recorded from those households which had a house and which lived in slums or squatter settlements. Further, any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, was considered a slum provided at least 20 households lived there. If such a settlement was not notified as a slum, it was considered as a non-notified slum. The notified slums were areas notified as slums by the concerned State governments, municipalities, corporations, local bodies or development authorities. For purpose of the analysis in the following section, the word ‘slum’ will refer to both notified slums and non-notified slums but it will not include squatter settlement.

3.5.2 Perhaps the most important indicator on slum for a state is about the concentration of dwelling units in slum areas. The ‘number per 1000 dwelling units situated in slum’ where a ‘slum’ was defined as above, gives a fair idea about the population density in slums.

3.5.3 Table T18 shows the number per 1000 dwelling units situated in slums and number per 1000 households (living in slums/squatter settlements) with no residential proof during 2012. The table shows that at all-India level, only 10.8 percent of urban dwelling units were situated in slum. Other 89.2 percent urban dwelling units were situated either in ‘squatter settlements’ or in ‘other areas’. Among urban areas of all the states, Maharashtra had the highest (30.1 percent) and Andhra Pradesh had the second highest (22.0 percent) proportion of dwelling units situated in slums. The table also shows that during 2012, none of the surveyed households in the states of Manipur, Nagaland, Sikkim, Andaman & Nicobar Islands and Lakshadweep were located in slums.

3.5.4 Table T18 also shows that during 2012, at all India level, 11.8 percent household staying in slums/squatter settlement did not have any residential proof. Among the states, this incidence was highest in Assam (37.7 percent) followed by Mizoram (31.7 percent). In Maharashtra and



Andhra Pradesh this proportion was estimated at 9.8 percent and 15.0 percent respectively. It is also observed that none of the surveyed households in slums/squatter settlements of many states (like Delhi, Goa, Himachal Pradesh, Jharkhand etc.) lacked residential proof.

Table T18: Number per 1000 dwelling units situated in slum and number per 1000 households\* with no residential proof during 2012

| State/UT          | number per 1000 dwelling units situated in slum | number per 1000 households* with no residential proof | State/UT         | number per 1000 dwelling units situated in slum | number per 1000 households* with no residential proof |
|-------------------|---|---|------------------|---|---|
| (1)               | (2)   | (3)   | (1)              | (2)   | (3)   |
| Andhra Pradesh    | 220   | 150   | Mizoram          | 122   | 317   |
| Arunachal Pradesh | 73  | 35  | Nagaland         | --  | --  |
| Assam             | 9   | 377   | Odisha           | 80  | 70  |
| Bihar             | 49  | 56  | Punjab           | 78  | 135   |
| Chhattisgarh      | 72  | 72  | Rajasthan        | 114   | 68  |
| Delhi             | 35  | 0   | Sikkim           | --  | --  |
| Goa               | 182   | 0   | Tamil Nadu       | 68  | 162   |
| Gujarat           | 54  | 140   | Tripura          | 25  | 0   |
| Haryana           | 13  | 14  | Uttarakhand      | 4   | 0   |
| Himachal Pradesh  | 13  | 0   | Uttar Pradesh    | 25  | 255   |
| Jammu & Kashmir   | 4   | 0   | West Bengal      | 96  | 181   |
| Jharkhand         | 45  | 0   | A & Nicobar Is.  | --  | --  |
| Karnataka         | 87  | 63  | Chandigarh       | 161   | 42  |
| Kerala            | 0   | 0   | D & Nagar Haveli | 61  | 0   |
| Madhya Pradesh    | 81  | 59  | Daman & Diu      | 147   | 0   |
| Maharashtra       | 301   | 98  | Lakshadweep      | --  | --  |
| Manipur           | --  | --  | Puducherry       | 1   | 0   |
| Meghalaya         | 39  | 259   | <b>all-India</b> | <b>108</b>                                      | <b>118</b>  |

\*: living in slums/squatter settlements, -: signifies 'zero sample' observation

3.5.5 Proportion of households staying in notified slums or non-notified slums or squatter settlements for quite a considerable time is an indicator of overall living condition in such slums or settlements. As notified slums are expected to have better facilities than non-notified slums, households might have a tendency to stay in notified slums for longer periods. Table T19 gives the number per 1000 households staying 10 years or more in notified slums/non-notified slums/squatter settlements/other areas. At all India level, during 2012, out of 100 households who were staying in the notified slums, around 67 households were staying there for 10 years or more. The table shows that in states like Jharkhand and Odisha, all the households in notified slums were staying there for 10 years or more on continuous basis. In Maharashtra and Andhra Pradesh, this proportion was estimated at 71.9 percent and 52.2 percent respectively. It is also observed that at all India level, 61.9 percent households in non-notified slums were living there for 10 years or more. At all India level, the same parameter was estimated at 56.2 percent for households living in squatter settlements.

Table T19: Number per 1000 households staying 10 years or more in slums/ squatter settlements/other areas during 2012

| State/UT          | notified slums | non-notified slums | squatter settlements | other areas | State/UT         | notified slums | non-notified slums | squatter settlements | other areas |
|-------------------|----------------|--------------------|----------------------|-------------|------------------|----------------|--------------------|----------------------|-------------|
| (1)               | (2)            | (3)                | (4)                  |             | (1)              | (2)            | (3)                | (4)                  |             |
| Andhra Pradesh    | 522            | 438                | 337                  | 368         | Mizoram          | 459            | 1000               | 0                    | 712         |
| Arunachal Pradesh | 400            | 303                | 29                   | 278         | Nagaland         | -              | -                  | -                    | 485         |
| Assam             | 561            | 726                | 1000                 | 519         | Odisha           | 1000           | 642                | 927                  | 491         |
| Bihar             | 997            | 700                | 0                    | 638         | Punjab           | 650            | 240                | 975                  | 617         |
| Chhattisgarh      | 883            | 927                | 876                  | 704         | Rajasthan        | 779            | 891                | 0                    | 571         |
| Delhi             | 0              | 683                | 0                    | 492         | Sikkim           | 0              | 0                  | 52                   | 387         |
| Goa               | 752            | 733                | 0                    | 607         | Tamil Nadu       | 541            | 695                | 0                    | 475         |
| Gujarat           | 869            | 512                | 204                  | 527         | Tripura          | 560            | 0                  | 0                    | 595         |
| Haryana           | 725            | 908                | 0                    | 600         | Uttarakhand      | 0              | 789                | 0                    | 616         |
| Himachal Pradesh  | 0              | 182                | 0                    | 273         | Uttar Pradesh    | 755            | 615                | 813                  | 683         |
| Jammu & Kashmir   | 977            | 776                | 955                  | 725         | West Bengal      | 824            | 880                | 914                  | 732         |
| Jharkhand         | 1000           | 845                | 0                    | 579         | A & Nicobar Is.  | -              | -                  | -                    | 500         |
| Karnataka         | 679            | 541                | 32                   | 457         | Chandigarh       | 580            | 0                  | 0                    | 423         |
| Kerala            | 667            | 912                | 0                    | 675         | D & Nagar Haveli | 0              | 26                 | 0                    | 536         |
| Madhya Pradesh    | 826            | 588                | 900                  | 628         | Daman & Diu      | 0              | 6                  | 0                    | 203         |
| Maharashtra       | 719            | 563                | 462                  | 505         | Lakshadweep      | -              | -                  | -                    | 471         |
| Manipur           | -              | -                  | -                    | 865         | Puducherry       | 0              | 0                  | 77                   | 507         |
| Meghalaya         | 527            | 113                | 0                    | 668         | <b>all-India</b> | <b>668</b>     | <b>619</b>         | <b>562</b>           | <b>555</b>  |

-: signifies 'zero sample' observation

3.5.6 At the same time, there might be some households who would try to move out of the slums/squatter settlements. In this survey it was ascertained whether a household in slum/squatter settlement had tried to move out of the slum/squatter settlement. For such households, the reason for the household trying to move out was also ascertained. Table T20 shows State-wise number per 1000 households living in slums/squatter settlement who tried to move out of slums/squatter settlements. It is observed that at all India level, 8.5 percent households living in notified slums had tried to move out of the slum. The proportion was estimated at 4.9 percent and 6.9 percent of households living in non-notified slums and squatter settlements respectively. From the results it is observed that in most of the states, only a small proportion of households living in notified/non-notified slums or in squatter settlements had attempted to move out from the slum or squatter settlement of their residence. The same pattern was observed across the states, including those states where a large number of households lived in notified/non-notified slums.

Table T20: Number per 1000 households living in slums/squatter settlements who had tried to move out of slums/squatter settlements

| State/UT          | notified slums | non-notified slums | squatter settlements | State/UT         | notified slums | non-notified slums | squatter settlements |
|-------------------|----------------|--------------------|----------------------|------------------|----------------|--------------------|----------------------|
| (1)               | (2)            | (3)                | (4)                  | (1)              | (2)            | (3)                | (4)                  |
| Andhra Pradesh    | 51             | 42                 | 0                    | Mizoram          | 0              | 0                  | 0                    |
| Arunachal Pradesh | 19             | 0                  | 116                  | Nagaland         | -              | -                  | -                    |
| Assam             | 0              | 0                  | 0                    | Odisha           | 70             | 61                 | 0                    |
| Bihar             | 3              | 0                  | 0                    | Punjab           | 97             | 4                  | 0                    |
| Chhattisgarh      | 2              | 66                 | 0                    | Rajasthan        | 20             | 0                  | 0                    |
| Delhi             | 0              | 0                  | 0                    | Sikkim           | 0              | 0                  | 0                    |
| Goa               | 0              | 100                | 0                    | Tamil Nadu       | 39             | 152                | 0                    |
| Gujarat           | 0              | 76                 | 0                    | Tripura          | 844            | 0                  | 0                    |
| Haryana           | 0              | 0                  | 0                    | Uttarakhand      | 0              | 0                  | 0                    |
| Himachal Pradesh  | 0              | 0                  | 0                    | Uttar Pradesh    | 3              | 2                  | 46                   |
| Jammu & Kashmir   | 153            | 0                  | 253                  | West Bengal      | 65             | 14                 | 0                    |
| Jharkhand         | 0              | 101                | 0                    | A & Nicobar Is.  | -              | -                  | -                    |
| Karnataka         | 77             | 9                  | 169                  | Chandigarh       | 10             | 0                  | 0                    |
| Kerala            | 0              | 88                 | 0                    | D & Nagar Haveli | 0              | 0                  | 0                    |
| Madhya Pradesh    | 60             | 45                 | 100                  | Daman & Diu      | 0              | 0                  | 0                    |
| Maharashtra       | 147            | 47                 | 0                    | Lakshadweep      | -              | -                  | -                    |
| Manipur           | -              | -                  | -                    | Puducherry       | 0              | 0                  | 0                    |
| Meghalaya         | 15             | 8                  | 0                    | <b>all-India</b> | <b>85</b>      | <b>49</b>          | <b>69</b>            |

∴ signifies 'zero sample' observation

3.5.7 In respect of the households living in slum/squatter settlement who tried to move out of it, the main reason behind their trying to leave was asked. The main reasons were classified as (i) better accommodation, (ii) proximity to place of work, (iii) social/religious factors and (iv) others.

Table T21: Number per 1000 households those tried to move out of the slum/squatter settlement by main reason for trying to move out in India

| State/UT            | better accommodation | proximity to place of work | social/religious factors | others     |
|---------------------|----------------------|----------------------------|--------------------------|------------|
| (1)                 | (2)                  | (3)                        | (4)                      | (5)        |
| notified slum       | 755                  | 134                        | 5                        | 107        |
| non-notified slum   | 583                  | 62                         | 4                        | 350        |
| squatter settlement | 320                  | 132                        | 32                       | 516        |
| <b>all*</b>         | <b>708</b>           | <b>117</b>                 | <b>6</b>                 | <b>169</b> |

\*: includes slums and squatter settlements

3.5.8 Table T21 shows the number per 1000 households who had tried to move out of the slum/squatter settlement by main reason for trying to move out during 2012. It is observed that at all-India level, 70.8 percent of households had identified 'better accommodation' as the main reason for which they intended to move out of the slum/squatter settlement whereas 11.7 percent households had identified 'proximity to place of work' as the main reason.

3.5.9 The standard of living condition in slum areas can also be assessed through a comparative analysis between slum and non-slum areas on availability of basic amenities like ‘drinking water’ and ‘sanitation facility’. Table T22 presents the relative position of slum and non-slum areas in respect of two indicators viz. ‘improved source of drinking water’ and ‘access to improved source of latrine’ at household level. Here, as earlier, improved source of drinking water includes: ‘bottled water’, ‘piped water into dwelling’, ‘piped water to yard/plot’, ‘public tap/standpipe’, ‘tube well/borehole’, ‘protected well’, ‘protected spring’, and ‘rainwater collection’. The state of sanitation facilities available to the households which had access to latrine is reflected in the indicator ‘having access to improved source of latrine’. Here also ‘improved source’ of latrine includes the sources such as ‘flush/pour-flush to: piped sewer system/septic tank/pit latrine’, ‘ventilated improved pit latrine’, ‘pit latrine with slab’ and ‘compositing toilet’.

3.5.10 Table T22 shows the number per 1000 households living in slum areas/non-slum areas and having improved source of drinking water. It is observed that during 2012, at all India level, 94.1 percent households living in slum areas had improved source of drinking water. The proportion was more than 75 percent in almost all the states, with some notable exceptions like Dadra & Nagar Haveli (2.8 percent), Delhi (53.4 percent) and Jharkhand (67.6 percent). The table also shows that at all India level, 95.4 percent households living in non-slum areas had improved source of drinking water. It is interesting to note that in Delhi, whereas 53.4 percent households living in slum areas had improved source of drinking water, the proportion was 99.3 percent for households living in non-slum areas. This particular pattern was also observed in bigger states like Gujarat, Jharkhand, Karnataka, and West Bengal. But in case of states like Kerala and Rajasthan, the reverse pattern was observed.

3.5.11 Table T22 also shows number per 1000 households living in slum areas/other areas and having ‘access to improved source’ of latrine. This proportion was computed only for those households who had ‘access to latrine’. It is observed that during 2012, at all India level, 96.6 percent households living in slum areas had access to improved source of latrine. This proportion was more than 80 percent for almost all the states, except Jammu & Kashmir, where it was estimated at 27.3 percent. The table also shows that at all India level, 98.4 percent households living in non-slum areas had access to improved source of latrine. It is observed that in general this sanitation indicator performs better in non-slum areas than in slum areas but in almost all the states the difference was not very high except in Jammu & Kashmir. In Jammu & Kashmir, whereas 27.3 percent households living in slum areas were having access to improved source of latrine, the proportion was 86.7 percent among households living in non-slum areas.

Table T22: Number per 1000 households living in slum areas<sup>^</sup>/non-slum areas and having ‘improved source of drinking water’ and ‘access to improved source of latrine’ during 2012

| State/UT          | improved source of drinking water |                | access to improved source of latrine* |                |
|-------------------|-----------------------------------|----------------|---------------------------------------|----------------|
|                   | slum areas <sup>^</sup>           | non-slum areas | slum areas <sup>^</sup>               | non-slum areas |
| (1)               | (2)                               | (3)            | (3)                                   | (5)            |
| Andhra Pradesh    | 985                               | 972            | 957                                   | 998            |
| Arunachal Pradesh | 1000                              | 982            | 997                                   | 975            |
| Assam             | 1000                              | 930            | 938                                   | 974            |
| Bihar             | 993                               | 997            | 1000                                  | 987            |
| Chhattisgarh      | 1000                              | 930            | 996                                   | 999            |
| Delhi             | 534                               | 993            | 1000                                  | 987            |
| Goa               | 1000                              | 996            | 1000                                  | 1000           |
| Gujarat           | 786                               | 966            | 992                                   | 999            |
| Haryana           | 1000                              | 922            | 1000                                  | 997            |
| Himachal Pradesh  | 1000                              | 1000           | -                                     | 1000           |
| Jammu & Kashmir   | 1000                              | 979            | 273                                   | 867            |
| Jharkhand         | 676                               | 892            | 1000                                  | 973            |
| Karnataka         | 813                               | 975            | 992                                   | 960            |
| Kerala            | 1000                              | 568            | 1000                                  | 999            |
| Madhya Pradesh    | 889                               | 979            | 974                                   | 987            |
| Maharashtra       | 982                               | 988            | 997                                   | 996            |
| Manipur           | -                                 | 698            | -                                     | 912            |
| Meghalaya         | 834                               | 949            | 926                                   | 998            |
| Mizoram           | 969                               | 993            | 1000                                  | 999            |
| Nagaland          | -                                 | 906            | -                                     | 994            |
| Odisha            | 968                               | 954            | 999                                   | 984            |
| Punjab            | 995                               | 998            | 964                                   | 997            |
| Rajasthan         | 972                               | 916            | 846                                   | 920            |
| Sikkim            | 1000                              | 988            | 1000                                  | 1000           |
| Tamil Nadu        | 936                               | 951            | 871                                   | 996            |
| Tripura           | 1000                              | 999            | 975                                   | 984            |
| Uttarakhand       | 1000                              | 999            | 868                                   | 993            |
| Uttar Pradesh     | 992                               | 992            | 954                                   | 972            |
| West Bengal       | 855                               | 957            | 970                                   | 986            |
| A & Nicobar Is.   | -                                 | 1000           | -                                     | 1000           |
| Chandigarh        | 1000                              | 1000           | 998                                   | 1000           |
| D & Nagar Haveli  | 28                                | 994            | 1000                                  | 1000           |
| Daman & Diu       | 1000                              | 893            | 1000                                  | 1000           |
| Lakshadweep       | -                                 | 849            | -                                     | 1000           |
| Puducherry        | 800                               | 915            | 1000                                  | 1000           |
| <b>all-India</b>  | <b>941</b>                        | <b>954</b>     | <b>966</b>                            | <b>984</b>     |

<sup>^</sup>: includes slums and squatter settlements, \*: only for households having access to latrine, -: signifies ‘zero sample’ observation

### 3.6 Some observations

3.6.1 Objective of this survey on ‘drinking water, sanitation, hygiene and housing condition’ was to collect information on the different aspects of living conditions necessary for decent and

healthy living of the household members and develop suitable indicators. Based on the collected data, some important indicators on facilities like 'drinking water', 'sanitation', 'housing' etc. available at household level has been developed and analysed. However, because of small sample sizes for some of the North-eastern and smaller states, before using estimates, users should take necessary care before interpreting a result based on meagre sample size.

3.6.2 In conclusion, the survey results show that during 2012, 88.5 percent households in rural India had improved source of drinking water while the corresponding figure was 95.3 percent in urban India. It is observed that in rural India, 85.8 percent households and in urban India, 89.6 percent households had sufficient drinking water. The survey also shows that 62.3 percent and 16.7 percent of households in rural India and urban India respectively did not have any bathroom facility. Besides, 38.8 percent and 89.6 percent households in rural and urban India respectively had access to 'improved source' of latrine. Results show that 65.8 percent and 93.6 percent households in rural India and urban India respectively lived in a house with pucca structure whereas 24.6 percent and 5.0 percent of the households in rural and urban areas respectively lived in a house with semi-pucca structure. Also, about 94.2 percent rural and 71.3 percent urban households had secured tenure. The result shows that 26.3 percent and 47.1 percent households in rural India and urban India respectively had dwelling units with 'good ventilation' and 31.7 percent rural and 82.5 percent urban households had 'improved drainage' facility. At all-India level, only 10.8 percent of urban dwelling units were situated in slum and 11.8 percent of households, who had stayed in slums/squatter settlement, did not have any residential proof. It is found that at all-India level, 70.8 percent of households had identified 'better accommodation' as the main reason for which they thought to move out of the slum/squatter settlement whereas 11.7 percent households had identified 'proximity to place of work' as the main reason.

# **Appendix A**

## **Detailed Tables**

Table A1: Estimated number of persons (00), average household size (0.0) and estimated number of households for each State/U.T.

| state / u. t./all-India | number of persons |               | average household size (0.0) | number of households |              |
|-------------------------|-------------------|---------------|------------------------------|----------------------|--------------|
|                         | estimated (00)    | sample        |                              | estimated (00)       | sample       |
| (1)                     | (2)               | (3)           | (4)                          | (5)                  | (6)          |
| Andhra Pradesh          | 580845            | 10741         | 3.7                          | 156055               | 2916         |
| Arunachal Pradesh       | 9901              | 2972          | 5.2                          | 1895                 | 549          |
| Assam                   | 254441            | 12136         | 5.3                          | 47901                | 2328         |
| Bihar                   | 834449            | 16612         | 5.2                          | 160264               | 3132         |
| Chhattisgarh            | 190941            | 4720          | 4.7                          | 40491                | 984          |
| Delhi                   | 24120             | 475           | 4.9                          | 4918                 | 96           |
| Goa                     | 6773              | 604           | 4.2                          | 1607                 | 144          |
| Gujarat                 | 344259            | 9751          | 5.1                          | 67772                | 1944         |
| Haryana                 | 168231            | 4833          | 5.2                          | 32358                | 912          |
| Himachal Pradesh        | 57717             | 4603          | 4.2                          | 13790                | 1042         |
| Jammu & Kashmir         | 79219             | 6181          | 5.5                          | 14524                | 1104         |
| Jharkhand               | 231228            | 6689          | 5.2                          | 44525                | 1248         |
| Karnataka               | 391128            | 9423          | 4.6                          | 84232                | 2016         |
| Kerala                  | 230108            | 7688          | 4.0                          | 57122                | 1919         |
| Madhya Pradesh          | 532245            | 14499         | 5.0                          | 107015               | 2964         |
| Maharashtra             | 628204            | 17698         | 4.6                          | 136790               | 3924         |
| Manipur                 | 17276             | 6476          | 5.5                          | 3127                 | 1140         |
| Meghalaya               | 23462             | 4640          | 5.6                          | 4172                 | 816          |
| Mizoram                 | 5178              | 2837          | 5.0                          | 1026                 | 563          |
| Nagaland                | 18154             | 2891          | 5.0                          | 3598                 | 528          |
| Orissa                  | 335108            | 10575         | 4.2                          | 80672                | 2488         |
| Punjab                  | 157344            | 5071          | 4.9                          | 32296                | 1068         |
| Rajasthan               | 486056            | 12864         | 5.2                          | 93045                | 2521         |
| Sikkim                  | 4318              | 2086          | 4.3                          | 1008                 | 480          |
| Tamil Nadu              | 373685            | 10618         | 3.7                          | 102181               | 2928         |
| Tripura                 | 30405             | 5098          | 4.2                          | 7258                 | 1248         |
| Uttarakhand             | 76694             | 2148          | 4.0                          | 19112                | 480          |
| Uttar Pradesh           | 1514674           | 40690         | 5.6                          | 268329               | 7391         |
| West Bengal             | 655247            | 16728         | 4.4                          | 150515               | 3862         |
| A & N Islands           | 2382              | 944           | 4.4                          | 544                  | 202          |
| Chandigarh              | 781               | 382           | 3.8                          | 204                  | 96           |
| Dadra & Nagar Haveli    | 1424              | 384           | 3.7                          | 388                  | 84           |
| Daman & Diu             | 589               | 479           | 4.5                          | 130                  | 96           |
| Lakshadweep             | 327               | 477           | 5.8                          | 56                   | 84           |
| Puducherry              | 4326              | 363           | 3.6                          | 1207                 | 96           |
| <b>all-India</b>        | <b>8271239</b>    | <b>255376</b> | <b>4.8</b>                   | <b>1740127</b>       | <b>53393</b> |



Table A1: Estimated number of persons (00), average household size (0.0) and estimated number of households for each State/U.T.

| State / U.T.         | number of persons |               | average household size (0.0) | number of households |              |
|----------------------|-------------------|---------------|------------------------------|----------------------|--------------|
|                      | estimated (00)    | sample        |                              | estimated (00)       | sample       |
| (1)                  | (2)               | (3)           | (4)                          | (5)                  | (6)          |
| Andhra Pradesh       | 276905            | 10736         | 3.5                          | 79831                | 2903         |
| Arunachal Pradesh    | 2030              | 1567          | 4.2                          | 479                  | 372          |
| Assam                | 25802             | 3138          | 3.7                          | 6994                 | 756          |
| Bihar                | 90028             | 6781          | 4.8                          | 18830                | 1248         |
| Chhattisgarh         | 49261             | 3602          | 4.5                          | 10880                | 792          |
| Delhi                | 131160            | 7593          | 4.1                          | 31737                | 1758         |
| Goa                  | 6676              | 643           | 3.9                          | 1730                 | 144          |
| Gujarat              | 245621            | 9048          | 4.2                          | 58376                | 2013         |
| Haryana              | 80590             | 4027          | 4.4                          | 18480                | 844          |
| Himachal Pradesh     | 9289              | 1035          | 3.3                          | 2775                 | 288          |
| Jammu & Kashmir      | 21738             | 4302          | 4.8                          | 4538                 | 840          |
| Jharkhand            | 60695             | 4290          | 4.6                          | 13167                | 838          |
| Karnataka            | 218236            | 8757          | 3.6                          | 61109                | 2064         |
| Kerala               | 94158             | 8038          | 3.9                          | 24421                | 1918         |
| Madhya Pradesh       | 186176            | 11775         | 4.4                          | 41973                | 2420         |
| Maharashtra          | 452389            | 17312         | 4.3                          | 105290               | 3894         |
| Manipur              | 6215              | 4968          | 4.8                          | 1288                 | 955          |
| Meghalaya            | 5222              | 2389          | 5.0                          | 1043                 | 432          |
| Mizoram              | 4768              | 2913          | 4.9                          | 974                  | 576          |
| Nagaland             | 4217              | 1746          | 4.9                          | 862                  | 336          |
| Orissa               | 50451             | 4096          | 3.6                          | 14192                | 1056         |
| Punjab               | 95475             | 4651          | 4.2                          | 22834                | 1056         |
| Rajasthan            | 160493            | 8358          | 4.7                          | 34164                | 1702         |
| Sikkim               | 1097              | 1193          | 3.2                          | 341                  | 288          |
| Tamil Nadu           | 306023            | 10284         | 3.4                          | 89531                | 2856         |
| Tripura              | 5353              | 3093          | 3.4                          | 1594                 | 864          |
| Uttarakhand          | 18488             | 1666          | 3.9                          | 4798                 | 408          |
| Uttar Pradesh        | 409854            | 22943         | 5.0                          | 82237                | 4172         |
| West Bengal          | 247702            | 14187         | 3.8                          | 64462                | 3426         |
| A & N Islands        | 1371              | 541           | 3.6                          | 382                  | 144          |
| Chandigarh           | 9711              | 746           | 4.0                          | 2426                 | 192          |
| Dadra & Nagar Haveli | 911               | 417           | 3.4                          | 264                  | 96           |
| Daman & Diu          | 2306              | 291           | 2.2                          | 1036                 | 96           |
| Lakshadweep          | 250               | 590           | 4.3                          | 58                   | 96           |
| Puducherry           | 7257              | 1132          | 3.4                          | 2152                 | 312          |
| <b>all-India</b>     | <b>3287919</b>    | <b>188848</b> | <b>4.1</b>                   | <b>805246</b>        | <b>42155</b> |

Table A2: Estimated number (00) of households in slums/squatter settlements in urban areas for each State/U.T.

| State/U.T.           | number of households |             |
|----------------------|----------------------|-------------|
|                      | estimated<br>(00)    | sample      |
| (1)                  | (2)                  | (3)         |
| Andhra Pradesh       | 17737                | 831         |
| Arunachal Pradesh    | 76                   | 51          |
| Assam                | 63                   | 33          |
| Bihar                | 937                  | 91          |
| Chhattisgarh         | 972                  | 133         |
| Delhi                | 1150                 | 70          |
| Goa                  | 315                  | 48          |
| Gujarat              | 3166                 | 265         |
| Haryana              | 256                  | 44          |
| Himachal Pradesh     | 36                   | 11          |
| Jammu & Kashmir      | 161                  | 61          |
| Jharkhand            | 591                  | 86          |
| Karnataka            | 5675                 | 421         |
| Kerala               | 15                   | 8           |
| Madhya Pradesh       | 3406                 | 459         |
| Maharashtra          | 31721                | 1087        |
| Manipur              | -                    | -           |
| Meghalaya            | 46                   | 33          |
| Mizoram              | 119                  | 53          |
| Nagaland             | -                    | -           |
| Odisha               | 1202                 | 150         |
| Punjab               | 1822                 | 150         |
| Rajasthan            | 3903                 | 265         |
| Sikkim               | 6                    | 4           |
| Tamil Nadu           | 6105                 | 338         |
| Tripura              | 40                   | 17          |
| Uttarakhand          | 20                   | 36          |
| Uttar Pradesh        | 2267                 | 262         |
| West Bengal          | 6552                 | 435         |
| A & N Islands        | -                    | -           |
| Chandigarh           | 390                  | 35          |
| Dadra & Nagar Haveli | 16                   | 12          |
| Daman & Diu          | 153                  | 17          |
| Lakshadweep          | -                    | -           |
| Puducherry           | 15                   | 12          |
| <b>all-India</b>     | <b>88933</b>         | <b>5518</b> |

**Appendix B**  
**Sample Design and Estimation Procedure**

# Appendix B

## Sample Design and Estimation Procedure

### 1. Introduction

1.1 The National Sample Survey (NSS), set up by the Government of India in 1950 to collect socio-economic data employing scientific sampling methods, conducted its 69<sup>th</sup> round July 2012 - December 2012. The 69<sup>th</sup> round of NSS was earmarked for surveys on Drinking water, Sanitation, Hygiene, Housing conditions and survey on slums. The last survey on these subjects was conducted during 65<sup>th</sup> round of NSS (July 2008- June 2009).

### 2. Outline of survey programme

2.1 **Geographical coverage:** This survey covered the whole of the Indian Union. The rural areas such as (i) interior villages of Nagaland situated beyond five kilometres of the bus route and (ii) villages in Andaman and Nicobar Islands which remain inaccessible throughout the year were previously excluded from coverage of NSS surveys. But these areas were covered in NSS 69<sup>th</sup> round after forming a State/UT level special stratum comprising these villages.

2.2 **Period of survey and work programme:** The survey was of six months' duration which started on 1<sup>st</sup> July 2012 and ended on 31<sup>st</sup> December 2012. The survey period was divided into two sub-rounds of three months' duration each as follows:

sub-round 1 : July - September 2012  
sub-round 2 : October - December 2012

In each of these two sub-rounds equal number of sample villages/ blocks (FSUs) was allotted for survey with a view to ensuring uniform spread of sample FSUs over the entire survey period. Attempt had been made to survey each of the FSUs during the sub-round to which it was allotted. Because of the arduous field conditions, this restriction was not strictly enforced in Andaman and Nicobar Islands, Lakshadweep and rural areas of Arunachal Pradesh and Nagaland.

2.3 **Schedules of enquiry:** During this round, three schedules of enquiry were canvassed:

Schedule 0.0 : list of households  
Schedule 1.2 : drinking water, sanitation, hygiene and housing condition  
Schedule 0.21 : particulars of slum

It is to be noted that Schedule 0.21 was canvassed in the urban areas only.

**2.4 Participation of States:** In this round all the States and Union Territories except Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli and Lakshadweep were participated. The ratio of the size of the State sample (the sample in the survey conducted by the State/UT) to the Central sample size varied across States/UTs as follows:

|   |                |
|---|----------------|
| Nagaland (U)                            | : triple       |
| Andhra Pradesh, J & K , Manipur , Delhi | : double       |
| Maharashtra (U)                         | : one and half |
| Remaining States/ UTs                   | : equal        |

### 3. Sample Design

**3.1 Outline of sample design:** A stratified multi-stage design had been adopted for the 69<sup>th</sup> round survey. The first stage units (FSU) were the census villages (Panchayat wards in case of Kerala) in the rural sector and Urban Frame Survey (UFS) blocks in the urban sector. The ultimate stage units (USU) were households in both the sectors. In case of large FSUs, one intermediate stage of sampling was the selection of two hamlet-groups (hgs)/ sub-blocks (sbs) from each rural/ urban FSU.

**3.2 Sampling Frame for First Stage Units:** For the rural sector, the list of 2001 census villages updated by excluding the villages urbanised and including the towns de-urbanised after 2001 census (henceforth the term ‘village’ would include Panchayat wards for Kerala) constituted the sampling frame. For the urban sector, the latest updated list of UFS blocks (2007-12) was used as the sampling frame.

**3.3 Stratification:** Within each district of a State/ UT, generally speaking, two basic strata were formed: i) rural stratum comprising all rural areas of the district and (ii) urban stratum comprising all the urban areas of the district. However, within the urban areas of a district, if there were one or more towns with population 10 lakhs or more as per population census 2011 in a district, each of them formed a separate basic stratum and the remaining urban areas of the district were considered as another basic stratum. In case of rural sectors of Nagaland and Andaman & Nicobar Islands, the coverage was extended to the entire State/UT from this round. In these two State/UTs, one separate special stratum was formed within the State/UT consisting of all the interior and inaccessible villages which were not covered in any of previous rounds.

### 3.4 Sub-stratification:

**3.4.1 Rural sector:** If ‘r’ be the sample size allocated for a rural stratum, the number of sub-strata formed was ‘r/2’. The villages within a district as per frame were first arranged in

ascending order of population. Then sub-strata 1 to 'r/2' were demarcated in such a way that each sub-stratum comprised a group of villages of the arranged frame and had more or less equal population.

**3.4.2 Urban sector:** Each stratum was divided into 2 sub-strata viz. sub-stratum 1: all UFS blocks having area type 'slum area' and sub-stratum 2: remaining UFS blocks.

**3.5 Total sample size (FSUs):** 8024 FSUs were allocated for the central sample at all-India level. For the state sample, 9504 FSUs were allocated for all-India. State wise allocation of sample FSUs is given in Table 1.

**3.6 Allocation of total sample to States and UTs:** The total number of sample FSUs were allocated to the States and UTs in proportion to population as per census 2011 subject to a minimum sample allocation to each State/ UT. While doing so, the resource availability in terms of number of field investigators as well as comparability with previous round of survey on the same subjects had been kept in view.

**3.7 Allocation of State/ UT level sample to rural and urban sectors:** State/ UT level sample size was allocated between two sectors in proportion to population as per *census 2011* with double weightage to urban sector subject to the restriction that urban sample size for bigger states like Maharashtra, Tamil Nadu etc. would not exceed the rural sample size. A minimum of 16 FSUs (minimum 8 each for rural and urban sector separately) were allocated to each State/ UT.

**3.8 Allocation to strata:** Within each sector of a State/ UT, the respective sample size was allocated to the different strata in proportion to the population as per census 2011. Allocations at stratum level were adjusted to multiples of 2 with a minimum sample size of 2. For special stratum in Nagaland and A & N Islands, 4 FSUs were allocated to each.

### **3.9 Allocation to sub-strata:**

**3.9.1 Rural:** Allocation was 2 for each sub-stratum in rural.

**3.9.2 Urban:** Stratum allocations had been distributed among the two sub-strata in proportion to the number of FSUs in the sub-strata. Minimum allocation for each sub-stratum was 2. Equal number of samples had been allocated among the two sub-rounds. Also, an additional sample of FSUs in the form of sub-sample 3, equal to number of sample FSUs in each of the sub-samples 1 & 2 was allocated in the sub-stratum 1 only.

### 3.10 Selection of FSUs:

3.10.1 For the rural sector, from each stratum/ sub-stratum, required number of sample villages had been selected by probability proportional to size with replacement (PPSWR), size being the population of the village as per Census 2001. For the urban sector, UFS 2007-12 phases had been used for all towns and cities and from each stratum/sub-stratum, FSUs had been selected by using Simple Random Sampling Without Replacement (SRSWOR). Both rural and urban samples were drawn in the form of two independent sub-samples and equal number of samples had been allocated among the two sub rounds. For urban sub-stratum 1, additional samples had been drawn in the form of sub-sample 3 independently.

### 3.11 Selection of hamlet-groups/ sub-blocks - important steps

3.11.1 **Criterion for hamlet-group/sub-block formation:** After identification of the boundaries of the FSU, it was first determined whether listing had to be undertaken in the whole sample FSU or not. In case the approximate present population of the selected FSU was found to be 1200 or more, it was divided into a suitable number (say, D) of ‘hamlet-groups’ in the rural sector and ‘sub-blocks’ in the urban sector by more or less equalising the population as stated below.

| approximate present population of the sample FSU | no. of hg’s/sb’s to be formed |
|--|-------------------------------|
| less than 1200 (no hamlet-groups/sub-blocks)     | 1                             |
| 1200 to 1799                                     | 3                             |
| 1800 to 2399                                     | 4                             |
| 2400 to 2999                                     | 5                             |
| 3000 to 3599                                     | 6                             |
| .....and so on                                   | .                             |

3.11.2 For rural areas of Himachal Pradesh, Sikkim, Uttarakhand (except four districts Dehradun, Nainital, Hardwar and Udham Singh Nagar), Poonch, Rajouri, Udhampur, Doda, Leh (Ladakh), Kargil districts of Jammu and Kashmir and Idukki district of Kerala, the number of hamlet-groups were formed as follows:

| approximate present population of the sample village | no. of hg’s to be formed |
|--|--------------------------|
| less than 600 (no hamlet-groups)                     | 1                        |
| 600 to 899   | 3                        |
| 900 to 1199  | 4                        |
| 1200 to 1499   | 5                        |
| 1500 to 1799   | 6                        |
| .....and so on                                       | .                        |

**3.12 Formation and selection of hamlet-groups/ sub-blocks:** In case hamlet-groups/ sub-blocks were formed in the sample FSU, the same was done by more or less equalizing population. While doing so, it was ensured that the hamlet-groups/ sub-blocks formed were clearly identifiable in terms of physical landmarks.

3.12.1 Two hamlet-groups (hg)/ sub-blocks (sb) were selected from a large FSU wherever hamlet-groups/ sub-blocks had been formed in the following manner – one hg/ sb with maximum percentage share of population was always selected and termed as hg/ sb 1; one more hg/ sb was selected from the remaining hg's/ sb's by simple random sampling (SRS) and termed as hg/ sb 2. Listing and selection of the households was done independently in the two selected hamlet-groups/ sub-blocks. The FSUs without hg/ sb formation were treated as sample hg/ sb number 1. It was to be noted that if more than one hg/ sb had same maximum percentage share of population, the one among them which was listed first in block 4.2 of schedule 0.0 was treated as hg/ sb 1.

### 3.13 Formation of second stage strata and allocation of households

3.13.1 Two cut-off points 'A' and 'B' (in Rs.) had been determined from NSS 66<sup>th</sup> round data for each NSS region for urban areas in such a way that top 10% of the population have MPCE more than 'B' and bottom 30% of the population have MPCE less than A. Households listed in the selected FSU/ hamlet-group/ sub-block were stratified into three second stage strata (SSS). Composition of the SSS and number of households were surveyed from different SSS is as follows:

| SSS          | composition of SSS                                   | number of households to be surveyed |   |
|--------------|--|-------------------------------------|---|
|              |  | FSU without hg/sb formation         | FSU with hg/sb formation (for each hg/sb) |
| <b>Rural</b> |  |                                     |   |
| SSS 1:       | households having pucca dwelling structure           | 4                                   | 2   |
| SSS 2:       | households having semi-pucca dwelling structure      | 4                                   | 2   |
| SSS 3:       | other households (including those with no structure) | 4                                   | 2   |
| <b>Urban</b> |  |                                     |   |
| SSS 1:       | households having MPCE > B                           | 2                                   | 1   |
| SSS 2:       | households having A MPCE B                           | 4                                   | 2   |
| SSS 3:       | households having MPCE < A                           | 6                                   | 3   |

**3.14 Selection of households:** From each SSS, the sample households were selected by SRSWOR.



## 4. Estimation Procedure

### 4.1 Notations:

s = subscript for s-th stratum

t = subscript for t-th sub-stratum

m = subscript for sub-sample (m = 1, 2, 3)

i = subscript for i-th FSU [village (panchayat ward)/ block]

d = subscript for a hamlet-group/ sub-block (d = 1, 2)

j = subscript for j-th second stage stratum in an FSU/ hg/sb [ j = 1, 2 or 3]

k = subscript for k-th sample household under a particular second stage stratum within an FSU/  
hg/sb

a = subscript for a-th slum (whole or part) found within the urban FSU

D = total number of hg's/ sb's formed in the sample FSU

$D^* = 0$  if  $D = 1$

= (D – 1) for FSUs with  $D > 1$

N = total number of FSUs in any urban sub-stratum

Z = total size of a rural sub-stratum (= sum of sizes for all the FSUs of a sub-stratum)

z = size of sample village used for selection.

n = number of sample FSUs surveyed including 'uninhabited' and 'zero cases' but excluding  
casualty for a particular sub-sample and sub-stratum.

L = total number of slums (whole or part) found within the sample urban FSU.

b = total number of UFS blocks intersecting the slum.

H = total number of households listed in a second-stage stratum of an FSU / hamlet-group or  
sub-block of sample FSU

h = number of households surveyed in a second-stage stratum of an FSU / hamlet-group or sub-  
block of sample FSU

x, y = observed value of characteristics x, y under estimation

$\hat{X}$ ,  $\hat{Y}$  = estimate of population total X, Y for the characteristics x, y

Under the above symbols,

$y_{stmidjk}$  = observed value of the characteristic y for the k-th household in the j-th second stage  
stratum of the d-th hg/ sb (d = 1, 2) of the i-th FSU belonging to the m-th sub-sample for the t-th  
sub-stratum of s-th stratum.

However, for ease of understanding, a few symbols have been suppressed in following  
paragraphs where they are obvious.

## 4.2 Formulae for Estimation of Aggregates for a particular sub-sample and stratum $\hat{1}$ sub-stratum:

### 4.2.1 Schedule 0.0:

#### 4.2.1.1 Rural:

- (i) For estimating the number of households in a stratum  $\times$  sub-stratum possessing a characteristic:

$$\hat{Y} = N \frac{Z}{n} \sum_{i=1}^n \frac{1}{z_i} \mathbb{1}_{\{y_{i1} < D_i^* \hat{1} y_{i2}\}}$$

where  $y_{i1}$ ,  $y_{i2}$  are the total number of households possessing the characteristic  $y$  in hg's 1 & 2 of the  $i$ -th FSU respectively.

- (ii) For estimating the number of villages in a stratum  $\times$  sub-stratum possessing a characteristic:

$$\hat{Y} = N \frac{Z}{n} \sum_{i=1}^n \frac{1}{z_i} y_i$$

where  $y_i$  is taken as 1 for sample villages possessing the characteristic and 0 otherwise.

#### 4.2.1.2 Urban:

- (i) For estimating the number of households in a stratum  $\times$  sub-stratum possessing a characteristic:

$$\hat{Y} = N \frac{N}{n} \sum_{i=1}^n \mathbb{1}_{\{y_{i1} < D_i^* \hat{1} y_{i2}\}}$$

where  $y_{i1}$  and  $y_{i2}$  are the total number of households possessing the characteristic  $y$  belonging to sub-blocks 1 and 2 respectively, of the  $i$ -th FSU.

### 4.2.2 Schedules 1.2:

#### 4.2.2.1 Rural:

- (i) For  $j$ -th second-stage stratum of a stratum  $\times$  sub-stratum:

$$\hat{Y}_j = N \frac{Z}{n_j} \sum_{i=1}^n \frac{1}{z_i} \frac{H_{i1j}^{h_{i1j}}}{h_{i1j}} \sum_{k=1}^{h_{i1j}} y_{i1,jk} < D_i^* \hat{1} \frac{H_{i2j}^{h_{i2j}}}{h_{i2j}} \sum_{k=1}^{h_{i2j}} y_{i2,jk}$$

(ii) For all second-stage strata combined:

$$\hat{Y} = N \ddot{y}_j \hat{Y}_j$$

#### 4.2.2.2 Urban (only for sub-samples 1 and 2):

(i) For j-th second stage stratum of a stratum  $\times$  sub-stratum:

$$\hat{Y}_j = N \frac{N_j}{n_j} \ddot{y}_{iN1} \frac{H_{i1j}}{h_{i1j}} \ddot{y}_{kN1} y_{i1jk} < D_i^* \hat{1} \frac{H_{i2j}}{h_{i2j}} \ddot{y}_{kN1} y_{i2jk}$$

(ii) For all second-stage strata combined:

$$\hat{Y} = N \ddot{y}_j \hat{Y}_j$$

#### 4.3 Overall Estimate for Aggregates for a sub-stratum:

Overall estimate for aggregates for a sub-stratum ( $\hat{Y}_{st}$ ) based on all sub-samples in a sub-stratum is obtained as:

(i) For sub-stratum with 2 sub-samples:  $\hat{Y}_{st} = N \frac{1}{2} \ddot{y}_{mN1}^2 \hat{Y}_{stm}$

(ii) For sub-stratum with 3 sub-samples:  $\hat{Y}_{st} = N \frac{1}{3} \ddot{y}_{mN1}^3 \hat{Y}_{stm}$

#### 4.4 Overall Estimate for Aggregates for a stratum:

Overall estimate for a stratum ( $\hat{Y}_s$ ) will be obtained as

$$\hat{Y}_s = N \ddot{y}_t \hat{Y}_{st}$$

#### 4.5 Overall Estimate of Aggregates at State/UT/all-India level:

The overall estimate  $\hat{Y}$  at the State/ UT/ all-India level is obtained by summing the stratum estimates  $\hat{Y}_s$  over all strata belonging to the State/ UT/ all-India.

#### 4.6 Estimates of Ratios:

Let  $\hat{Y}$  and  $\hat{X}$  be the overall estimates of the aggregates Y and X for two characteristics y and x respectively at the State/ UT/ all-India level.

Then the combined ratio estimate ( $\hat{R}$ ) of the ratio ( $R = \frac{Y}{X}$ ) will be obtained as  $\hat{R} = \frac{\hat{Y}}{\hat{X}}$ .

4.7 **Estimates of Error:** The estimated variances of the above estimates will be as follows:

4.7.1 **For aggregate  $\hat{Y}$ :**  $\text{Var}(\hat{Y}) \approx \sum_s \text{Var}(\hat{Y}_s) \approx \sum_s \sum_t \text{Var}(\hat{Y}_{st})$  where  $\text{Var}(\hat{Y}_{st})$  is given by

(i) for sub-stratum with 2 sub-samples:

$\text{Var}(\hat{Y}_{st}) \approx \frac{1}{4} (\hat{Y}_{st1} - \hat{Y}_{st2})^2$ , where  $\hat{Y}_{st1}$  and  $\hat{Y}_{st2}$  are the estimates for sub-sample 1 and sub-sample 2 respectively for stratum 's' and sub-stratum 't'.

(ii) for sub-stratum with 3 sub-samples:

$\text{Var}(\hat{Y}_{stm}) \approx \frac{1}{6} \sum_{m=1}^3 (\hat{Y}_{stm})^2$ , where  $\hat{Y}_{stm}$  is the estimate for sub-sample 'm' for stratum 's' and sub-stratum 't'.

4.7.2 **For ratio  $\hat{R}$ :**

$MSE(\hat{R}) \approx \sum_s \sum_t MSE_{st}(\hat{R})$  where  $MSE_{st}(\hat{R})$  is given by

(i) for sub-stratum with 2 sub-samples:

$MSE_{st}(\hat{R}) \approx \frac{1}{4\hat{X}^2} (\hat{Y}_{st1} - \hat{Y}_{st2})^2 < \hat{R}^2 (\hat{X}_{st1} - \hat{X}_{st2})^2 > 2\hat{R} (\hat{Y}_{st1} - \hat{Y}_{st2}) (\hat{X}_{st1} - \hat{X}_{st2})$

(ii) for sub-stratum with 3 sub-samples:

$$\begin{aligned}
 & M\hat{S}E_{st}(\hat{R}) N \\
 & \frac{1}{6\hat{X}^2} \sum_{m=1}^3 \hat{Y}_{stm} > \frac{\sum_{m=1}^3 \hat{Y}_{stm}^2}{3} < \hat{R}^2 < \frac{\sum_{m=1}^3 \hat{X}_{stm}^2}{3} \\
 & > 2\hat{R} \hat{Y}_{stm} > \frac{\sum_{m=1}^3 \hat{Y}_{stm}}{3} < \hat{X}_{stm} > \frac{\sum_{m=1}^3 \hat{X}_{stm}}{3}
 \end{aligned}$$

#### 4.7.3 Estimates of Relative Standard Error (RSE):

$$R\hat{S}E(\hat{Y}) = \frac{\sqrt{V\hat{a}r(\hat{Y})}}{\hat{Y}} \times 100$$

$$R\hat{S}E(\hat{R}) = \frac{\sqrt{M\hat{S}E(\hat{R})}}{\hat{R}} \times 100$$

#### 5. Multipliers:

The formulae for multipliers at stratum/sub-stratum/second-stage stratum/ slum level for a sub-sample and schedule type are given below:

| sch type | sector | formula for multipliers                             |  |
|----------|--------|---|--|
|          |        | hg / sb 1   | hg / sb 2  |
| 0.0      | rural  | $\frac{Z_{st}}{n_{stm}} \hat{1} \frac{1}{z_{stmi}}$ | $\frac{Z_{st}}{n_{stm}} \hat{1} \frac{1}{z_{stmi}} \hat{D}_{stmi}^*$ |
|          | Urban  | $\frac{N_{st}}{n_{stm}}$                            | $\frac{N_{st}}{n_{stm}} D_{stmi}^*$                                  |

| sch type      | sector | formula for multipliers  |  |
|---------------|--------|--|--|
|               |        | hg / sb 1  | hg / sb 2  |
| 1.2           | rural  | $\frac{Z_{st}}{n_{stmj}} \hat{\tau} \frac{1}{z_{stmi}} \hat{\tau} \frac{H_{stmi1j}}{h_{stmi1j}}$   | $\frac{Z_{st}}{n_{stmj}} \hat{\tau} \frac{1}{z_{stmi}} \hat{\tau} D_{stmi}^* \hat{\tau} \frac{H_{stmi2j}}{h_{stmi2j}}$ |
|               | Urban  | $\frac{N_{st}}{n_{stmj}} \hat{\tau} \frac{H_{stmi1j}}{h_{stmi1j}}$ ,   | $\frac{N_{st}}{n_{stmj}} \hat{\tau} D_{stmi}^* \hat{\tau} \frac{H_{stmi2j}}{h_{stmi2j}}$ ,                             |
| (j = 1, 2, 3) |        |  |  |
| 0.21          | Urban  | $\frac{N_{st}}{n_{stmj}} \frac{1}{b_{stmia}}$ ,  |  |
|               |        | for the a-th slum in i-th sample block.<br>a = 1, 2, ..... L <sub>i</sub> and<br>b = total number of UFS blocks intersecting the a-th slum |  |

- Note: (i) For estimating any characteristic for any domain not specifically considered in sample design, indicator variable may be used.
- (ii) Multipliers have to be computed on the basis of information available in the listing schedule irrespective of any misclassification observed between the listing schedule and detailed enquiry schedule.
- (iii) For estimating number of villages possessing a characteristic,  $D_{stmi}^* = 0$  in the relevant multipliers and there will be only one multiplier for the village (see paragraph 6.2.1 in this context).

**Table 1: Allocation of sample villages and blocks for NSS 69<sup>th</sup> round**

| State/UT            | number of FSUs |             |             |              |             |             |
|---------------------|----------------|-------------|-------------|--------------|-------------|-------------|
|                     | Central sample |             |             | State sample |             |             |
|                     | total          | rural       | urban       | total        | rural       | urban       |
| (1)                 | (2)            | (3)         | (4)         | (5)          | (6)         | (7)         |
| Andhra Pradesh      | 486            | 244         | 242         | 1024         | 488         | 536         |
| Arunachal Pradesh   | 80             | 48          | 32          | 80           | 48          | 32          |
| Assam               | 276            | 212         | 64          | 280          | 212         | 68          |
| Bihar               | 368            | 264         | 104         | 378          | 264         | 114         |
| Chhattisgarh        | 150            | 84          | 66          | 162          | 84          | 78          |
| Goa                 | 24             | 12          | 12          | 26           | 12          | 14          |
| Gujarat             | 332            | 164         | 168         | 357          | 164         | 193         |
| Haryana             | 148            | 76          | 72          | 153          | 76          | 77          |
| Himachal Pradesh    | 112            | 88          | 24          | 112          | 88          | 24          |
| Jammu & Kashmir     | 162            | 92          | 70          | 332          | 184         | 148         |
| Jharkhand           | 174            | 104         | 70          | 182          | 104         | 78          |
| Karnataka           | 340            | 168         | 172         | 368          | 168         | 200         |
| Kerala              | 320            | 160         | 160         | 323          | 160         | 163         |
| Madhya Pradesh      | 450            | 248         | 202         | 474          | 248         | 226         |
| Maharashtra         | 654            | 328         | 326         | 890          | 328         | 562         |
| Manipur             | 176            | 96          | 80          | 352          | 192         | 160         |
| Meghalaya           | 104            | 68          | 36          | 105          | 68          | 37          |
| Mizoram             | 96             | 48          | 48          | 96           | 48          | 48          |
| Nagaland            | 72             | 44          | 28          | 128          | 44          | 84          |
| Odisha              | 300            | 212         | 88          | 310          | 212         | 98          |
| Punjab              | 180            | 92          | 88          | 187          | 92          | 95          |
| Rajasthan           | 354            | 212         | 142         | 365          | 212         | 153         |
| Sikkim              | 64             | 40          | 24          | 64           | 40          | 24          |
| Tamil Nadu          | 482            | 244         | 238         | 507          | 244         | 263         |
| Tripura             | 176            | 104         | 72          | 177          | 104         | 73          |
| Uttarakhand         | 74             | 40          | 34          | 77           | 40          | 37          |
| Uttar Pradesh       | 966            | 616         | 350         | 983          | 616         | 367         |
| West Bengal         | 610            | 324         | 286         | 637          | 324         | 313         |
| Andaman & N Islands | 32             | 20          | 12          | 0            | 0           | 0           |
| Chandigarh          | 24             | 8           | 16          | 0            | 0           | 0           |
| Dadra & N Haveli    | 16             | 8           | 8           | 0            | 0           | 0           |
| Daman & Diu         | 16             | 8           | 8           | 17           | 8           | 9           |
| Delhi               | 156            | 8           | 148         | 322          | 16          | 306         |
| Lakshadweep         | 16             | 8           | 8           | 0            | 0           | 0           |
| Puducherry          | 34             | 8           | 26          | 36           | 8           | 28          |
| <b>All-India</b>    | <b>8024</b>    | <b>4500</b> | <b>3524</b> | <b>9504</b>  | <b>4896</b> | <b>4608</b> |

**Appendix C**  
**Facsimile of Schedule 1.2 [Drinking Water, Sanitation,  
Hygiene and Housing Condition]**



|       |  |   |
|-------|--|---|
| RURAL |  | * |
| URBAN |  |   |

|         |  |   |
|---------|--|---|
| CENTRAL |  | * |
| STATE   |  |   |

**GOVERNMENT OF INDIA**  
**NATIONAL SAMPLE SURVEY OFFICE**  
**SOCIO-ECONOMIC SURVEY**  
**SIXTY-NINTH ROUND: JULY 2012 – DECEMBER 2012**  
**SCHEDULE 1.2: DRINKING WATER, SANITATION, HYGIENE**  
**and HOUSING CONDITION**

| [0] descriptive identification of sample household |                               |
|--|-------------------------------|
| 1. state/u.t.:                                     | 5. hamlet name:               |
| 2. district:                                       | 6. inv. unit /block:          |
| 3. tehsil/town:*                                   | 7. name of head of household: |
| 4. village name:                                   | 8. name of informant:         |

| [1] identification of sample household |                                      |      |   |   |          |  |      |
|--|--------------------------------------|------|---|---|----------|--|------|
| item no.                               | item                                 | code |   |   | item no. | item   | code |
| 1.                                     | srl. no. of sample village/block     |      |   |   | 11.      | sub-sample   |      |
| 2.                                     | round number                         | 6    |   | 9 | 12.      | FOD sub-region                                       |      |
| 3.                                     | schedule number                      | 1    | 2 | 0 | 13.      | sample hg/sb number (1/2)                            |      |
| 4.                                     | sample ( <i>central-1, state-2</i> ) |      |   |   | 14.      | second-stage stratum                                 |      |
| 5.                                     | sector ( <i>rural-1, urban-2</i> )   |      |   |   | 15.      | sample household number                              |      |
| 6.                                     | NSS region                           |      |   |   | 16.      | informant's relation to head (code)                  |      |
| 7.                                     | district                             |      |   |   | 17.      | response code  |      |
| 8.                                     | stratum                              |      |   |   | 18.      | survey code  |      |
| 9.                                     | sub-stratum                          |      |   |   | 19.      | reason for substitution of original household (code) |      |
| 10.                                    | sub-round                            |      |   |   |          |  |      |

**Codes for Block 1**

*item 16: informant's relation to head: head of household – 1, other member(s) of household – 2, non-member of the household closely associated with the household –9.*

*item 17: response code: informant: co-operative and capable -1, co-operative but not capable -2, busy -3, reluctant -4, others -9.*

*item 18: survey code: household surveyed: original -1, substitute -2, casualty -3.*

*item 19: reason for substitution of original household: informant busy -1, members away from home -2, informant non-cooperative -3, others -9.*

\* tick mark (✓) may be put in the appropriate place.

### **Codes for Block 3**

**item 6 and item 7: level of education:**

not literate -01, literate without formal schooling: 02; literate: below primary -03, primary -04, upper primary/ middle -05, secondary -06, higher secondary -07, diploma/certificate course (below graduate level) -08, graduate -09, postgraduate and above -10.

**item 10: household type:**

**for rural areas:** self-employed in: agriculture-1, non-agriculture -2; regular wage/salary earning-3, casual labour in: agriculture-4, non-agriculture -5; others -9.

**for urban areas:** self-employed -1, regular wage/salary earning -2, casual labour -3, others -9.

**item 11: religion:** Hinduism -1, Islam -2, Christianity -3, Sikhism -4, Jainism -5, Buddhism -6, Zoroastrianism -7, others -9.

**item 12: social group:** scheduled tribe -1, scheduled caste -2, other backward class -3, others-9.

**item 13: land possessed (area in hectare):**

| <i>area in hectare</i> | <i>code</i> | <i>area in hectare</i>   | <i>code</i> |
|------------------------|-------------|--------------------------|-------------|
| less than 0.005 .....  | 01          | 2.01 – 3.01 .....        | 07          |
| 0.005 - 0.02 .....     | 02          | 3.01 - 4.01 .....        | 08          |
| 0.02 - 0.21 .....      | 03          | 4.01 - 6.01 .....        | 10          |
| 0.21 - 0.41.....       | 04          | 6.01 - 8.01 .....        | 11          |
| 0.41 - 1.01 .....      | 05          | greater than or equal to |             |
| 1.01 – 2.01 .....      | 06          | 8.01.....                | 12          |

**Note:** 1 acre = 0.4047 hectare, 1 hectare=10,000 square metre

**item 14: tenurial status of dwelling:** owned: freehold-1, leasehold-2; hired: employer quarter-3, hired dwelling units with written contract-4, hired dwelling units without written contract-5; others-9, no dwelling –6.

**item 16: distance:** not required to travel-1; travelled a distance of: less than 1 k.m.-2, 1 k.m. or more but less than 5 k.m.-3, 5 k.m. or more but less than 10 k.m. – 4, 10 k.m. or more but less than 15 k.m. – 5, 15 k.m. or more but less than 30 k.m. – 6, 30 k.m. or more-7.

**item 25: sources of finance:**

|   |    |
|---|----|
| own source (including own labour )..... | 01 |
| <b>institutional agencies</b>           |    |
| government.....                         | 02 |
| bank .....                              | 03 |
| insurance.....                          | 04 |
| provident fund (advance/loan).....      | 05 |
| financial corporation/institution.....  | 06 |
| other institutional agencies.....       | 07 |
| <b>non-institutional agencies</b>       |    |
| money lender.....                       | 08 |
| friends and relatives.....              | 09 |
| other non-institutional agencies.....   | 10 |

| [3] household characteristics |   |                                 |  |  |   |  |     |                        |  |
|-------------------------------|---|---------------------------------|--|--|---|--|-----|------------------------|--|
| 1.                            | household size  | male                            |  |  | 16.   | maximum distance to the place of work normally travelled by any earner of the household (code)   |     |                        |  |
| 2.                            |   | female                          |  |  |   |  |     |                        |  |
| 3.                            |   | total<br>(sum of items 1 and 2) |  |  |   |  |     |                        |  |
| 4.                            | gender of the head of the household<br>(male -1, female -2)   |                                 |  |  | <b>household consumer expenditure (₹) during last 30 days out of:</b> |  |     |                        |  |
| 5.                            | age of the head of the household<br>(less than 18 years-1, 18 years and above-2)  |                                 |  |  |   |  |     |                        |  |
| 6.                            | highest level of education among the male members of the household (code)   |                                 |  |  | 17.   | purchase   |     |                        |  |
| 7.                            | highest level of education among the female members of the household (code)   |                                 |  |  | 18.   | home produced stock  |     |                        |  |
| 8.                            | principal industry<br>(NIC-2008)  | description:                    |  |  | 19.   | receipts in exchange of goods and services   |     |                        |  |
|                               |   | code<br>(5-digit)               |  |  |   |  | 20. | gifts and loans        |  |
| 9.                            | principal occupation<br>(NCO-2004)  | description:                    |  |  | 21.   | free collection  |     |                        |  |
|                               |   | code<br>(3-digit)               |  |  |   |  | 22. | total (items 17 to 21) |  |
| 10.                           | household type (code)   |                                 |  |  | <b>information on construction/ purchase of houses or flats</b>       |  |     |                        |  |
| 11.                           | religion (code)   |                                 |  |  | 23.   | whether any amount was spent on construction/first-hand purchase of houses/flats for residential purpose during last 365 days<br>(yes-1, no-2) |     |                        |  |
| 12.                           | social group (code)   |                                 |  |  |   |  |     |                        |  |
| 13.                           | land possessed as on date of survey (code)  |                                 |  |  | 24.   | amount spent during last 365 days (₹)  |     |                        |  |
| 14.                           | tenurial status of dwelling (code)  |                                 |  |  | 25.   | <b>if 1 in item 23,</b><br>sources of finance (four different sources in descending order of amount financed)<br>(codes)                       |     |                        |  |
| 15.                           | <b>if entry 1 to 5 or 9 in item 14,</b> area type in which the dwelling unit is located ( <i>notified slum-1, non-notified slum-2, squatter settlement-3, other areas-9</i> ) |                                 |  |  |   |  |     |                        |  |

| [4] particulars of living facilities: drinking water, bathroom, sanitation, etc. |  |            |     |     |     |     |     |
|--|--|------------|-----|-----|-----|-----|-----|
| srl. no.   | item   | code/entry |     |     |     |     |     |
| (1)  | (2)  | (3)        |     |     |     |     |     |
| <b>A. drinking water</b>   |  |            |     |     |     |     |     |
| 1.   | principal source of drinking water<br>(bottled water-01, piped water into dwelling-02, piped water to yard/plot-03, public tap/standpipe-04, tube well/borehole-05, well: protected-06, unprotected-07; spring: protected-08, unprotected-09; rainwater collection -10, surface water: tank/pond-11, other surface water (river, dam, stream, canal, lake, etc.)-12, others (tanker-truck, cart with small tank or drum, etc.)-19) |            |     |     |     |     |     |
| 2.   | whether availability of drinking water from the principal source is sufficient throughout the year?<br>(yes- 1, no - 2)  |            |     |     |     |     |     |
| 3.   | if code 2 in item 2, during which calendar months of the year availability of drinking water was not sufficient?<br>(record '1' against the applicable month(s) and rest of the months to be left blank)   | Jan        | Feb | Mar | Apr | May | Jun |
|  |  | Jul        | Aug | Sep | Oct | Nov | Dec |
|  |  |            |     |     |     |     |     |
| 4.   | access to the principal source of drinking water<br>(household's exclusive use- 1, common use of households in the building -2, neighbour's source -3, community use: public source restricted to particular community -4, public source unrestricted-5, private source restricted to particular community-6, private source unrestricted-7; others-9)   |            |     |     |     |     |     |
| 5.   | distance to the principal source of drinking water<br>(within dwelling - 1, outside dwelling but within the premises - 2, outside premises: less than 0.2 k.m. - 3, 0.2 to 0.5 k.m. - 4, 0.5 to 1.0 k.m. - 5, 1.0 k.m. to 1.5 k.m. -6, 1.5 k.m. or more -7)  |            |     |     |     |     |     |
| 6.   | if codes 3 to 7 in item 5, who fetches drinking water?<br>(member of the household: male of age below 18 years-1, male of age 18 years or more-2, female of age below 18 years-3, female of age 18 years or more-4; non- member of the household: hired labour-5, others-6)  |            |     |     |     |     |     |
| 7.   | if codes 3 to 7 in item 5 and codes 1 to 4 in item 6, time taken, in a day, to reach the source of drinking water and back (in minutes)  |            |     |     |     |     |     |
| 8.   | if codes 3 to 7 in item 5 and codes 1 to 4 in item 6, waiting time, in a day, at the source of drinking water (in minutes)   |            |     |     |     |     |     |
| 9.   | quality of drinking water from the principal source<br>(bad in taste-1,bad in smell-2,bad in taste and smell-3,bad due to other reasons-4, no defect-5)  |            |     |     |     |     |     |
| 10.  | if codes 04 to 07 in item 1, is there stagnant water around the source of drinking water? (yes-1, no-2)  |            |     |     |     |     |     |
| 11.  | supplementary source of drinking water<br>(code structure same as item 1: principal source of drinking water )   |            |     |     |     |     |     |
| 12.  | method of treatment of drinking water by the household<br>(treated: electronic purifier-1, boiling-2, chemically treated with alum-3, chemically treated with bleach/chlorine tablets-4, filtered with water filter (candle, ceramic, sand, etc.)-5, filtered with cloth-6, others-9; not treated-7)   |            |     |     |     |     |     |
| 13.  | material of the main container in which drinking water is stored<br>(non-metal: earthen-01, plastic-02, other non-metal-03; metal: iron-04, galvanised iron-05, copper-06, stainless steel-07, brass-08, other metal-09; no storage-10)  |            |     |     |     |     |     |
| 14.  | for entry 01 to 09, in item 13, how drinking water is taken out from the main container?<br>(through tap-1, vessel with handle dipped in to take out water-2, vessel without handle dipped in to take out water-3, poured out-4)   |            |     |     |     |     |     |

continued to next page

| <b>[4] particulars of living facilities: drinking water, bathroom, sanitation, etc.</b> |  |      |   |
|---|--|------|---|
| srl. no.  | item   |      | code/entry  |
| (1)   | (2)  |      | (3)   |
| <b>B. water for all household activities</b>  |  |      |   |
| 15.   | principal source of water for all household activities excluding drinking (viz., cooking, washing, bathing, etc.) <b>(code structure same as item 1: principal source of drinking water)</b>   |      |   |
| 16.   | whether the household gets sufficient water throughout the year for all household activities (viz., drinking, cooking, washing, bathing, etc.) (yes-1, no-2)?  |      |   |
| 17.   | <b>for entry 02, 03 and 04 in either item 1, 11 or 15</b> , frequency of supply of water ( daily -1, once in two days-2, once in three days-3, once in a week-4, others-9)   |      |   |
| 18.   | <b>for entry 02 and 03 in either item 1, 11 or 15</b> , whether water is metered ( yes-1, no-2)  |      |   |
| 19.   | water charges paid (payable) per month to the delivery agency/ organisation/ office  | 19.1 | whether water charges paid (paid and information on full amount of payment is available -1, paid and information on some amount of payment is available -2, paid but no information on amount paid is separately available -3, not required to pay-4) |
|   |  | 19.2 | <b>for entry 1 and 2 in item 19.1</b> , average amount paid per month ( `)  |
| <b>C. bathroom</b>  |  |      |   |
| 20.   | facility of bathroom ( attached – 1, detached – 2, no bathroom – 3)  |      |   |
| 21.   | <b>for code 1 and 2 in item 20</b> , access to bathroom (exclusive use of household- 1, common use of households in the building – 2, public/community use – 3, others -9)   |      |   |
| 22.   | distance from the bathing place (within dwelling – 1, outside dwelling but within the premises – 2, outside premises: less than 0.2 k.m. – 3, 0.2 to 0.5 k.m. – 4, 0.5 to 1.0 k.m. – 5, 1.0 k.m. to 1.5 k.m.-6, 1.5 k.m. or more –7)   |      |   |
| <b>D. latrine</b>   |  |      |   |
| 23.   | access to latrine (exclusive use of household-1, common use of households in the building -2, public/community latrine without payment-3, public/community latrine with payment-4, others -9, no latrine-5)  |      |   |
| 24.   | <b>for codes 1, 2, 3,4 or 9 in item 23</b> , type of latrine (used: flush/pour-flush to: piped sewer system-01, septic tank-02, pit latrine-03, elsewhere (open drain, open pit, open field, etc)-04; ventilated improved pit latrine-05, pit latrine with slab-06, pit latrine without slab/open pit-07, composting toilet-08, others-09; not used-10 ) |      |   |
| 25.   | <b>for code 10 in item 24</b> , reason for not using latrine (no superstructure -1, not clean/insufficient water-2, malfunctioning of the latrine-3, personal preference -4, cannot afford charges for paid latrine-5, others-9)   |      |   |
| 26.   | <b>for entry 1, 2, 3, 4 or 9 in item 23</b> , whether all household members of categories specified in items 26.1 to 26.4 are using latrine (yes-1, no-2, not applicable-3) [if the household has no member of a specific category, record '3' against the respective category to indicate not applicable cases]   | 26.1 | male of age below 15 years  |
|   |  | 26.2 | male of age 15 years and above  |
|   |  | 26.3 | female of age below 15 years  |
|   |  | 26.4 | female of age 15 years and above  |

**continued to next page**

| <b>[4] particulars of living facilities: drinking water, bathroom, sanitation, etc.</b> |   |   |  |
|---|---|---|--|
| srl. no.  | item  | code/entry  |  |
| (1)   | (2)   | (3)   |  |
| <b>E. problem of flies and mosquitoes</b>   |   |   |  |
| 27.   | whether the household faced problem of flies/mosquitoes during last 365 days (yes: <i>severe-1, moderate-2; no-3</i> )  |   |  |
| 28.   | whether any effort was made by the Local Bodies/State Government during last 365 days to tackle problem of flies/mosquitoes ( <i>yes-1, no-2, not known-3</i> ) |   |  |
| 29.   | whether any effort was made by the household during last 365 days to tackle problem of flies/mosquitoes ( <i>yes-1, no-2, not applicable - 3</i> )              |   |  |
| <b>F. specific types of illness of the household members during last 30 days</b>        |   |   |  |
| 30.   | whether any of the household member(s) suffered from the types of illness specified in items 30.1 to 30.4 during last 30 days                                   | 30.1 stomach problem ( <i>yes-1, no-2</i> )                         |  |
|   |   | 30.2 malaria ( <i>yes-1, no-2</i> )                                 |  |
|   |   | 30.3 skin disease ( <i>yes-1, no-2</i> )                            |  |
|   |   | 30.4 fever due to disease other than malaria ( <i>yes-1, no-2</i> ) |  |
| <b>G. electricity</b>   |   |   |  |
| 31.   | whether the household has electricity for domestic use? ( <i>yes-1, no-2</i> )  |   |  |
| 32.   | <b>if code 1 in item 31</b> , type of electric wiring ( <i>conduit wiring – 1, fixed to the walls – 2, temporary – 3</i> )                                      |   |  |

| <b>[5] housing characteristics and micro environment</b> (for the households living in houses, i.e., with codes 1, 2, 3, 4, 5 or 9 in item 14 of block 3) |  |      |   |                    |   |   |   |   |
|---|--|------|---|--------------------|---|---|---|---|
| srl. no.  | item   |      |   | code / entry       |   |   |   |   |
| (1)   | (2)  |      |   | (3)                |   |   |   |   |
| 1.  | plinth level ( <i>in feet and in whole numbers</i> ) ( <i>record '0', if there is no plinth</i> )  |      |   |                    |   |   |   |   |
| 2.  | number of floor (s) in the house   |      |   |                    |   |   |   |   |
| 3.  | use of house ( <i>residential only – 1, residential-cum-commercial – 2, residential-cum-others – 9</i> )   |      |   |                    |   |   |   |   |
| 4.  | <b>if codes 1 or 2 in item 14 of block 3 (i.e., for the household with own dwelling),</b> period since built<br>( <i>less than 1 year – 1, 1 to 5 years – 2, 5 to 10 years – 3, 10 to 20 years – 4, 20 to 40 years – 5, 40 to 60 years – 6, 60 to 80 years – 7, 80 years or more – 8, not known-9</i> )  |      |   |                    |   |   |   |   |
| <b>if code 1 or 2 in item 4,</b>  |  |      | 5.  | year of start      | Y | Y | Y | Y |
|   |  |      | 6.  | year of completion |   |   |   |   |
| 7.  | condition of structure ( <i>good – 1, satisfactory – 2, bad – 3</i> )  |      |   |                    |   |   |   |   |
| 8.  | drainage system<br>( <i>underground – 1, covered pucca – 2, open pucca – 3, open katcha – 4, no drainage – 5</i> )   |      |   |                    |   |   |   |   |
| 9.  | disposal of household waste water ( <i>safe re-use after treatment-1, disposed off without treatment to: open low land areas-2, ponds-3, nearby river-4, drainage system-5; disposed off with or without treatment to other places-9, not known-6</i> )  |      |   |                    |   |   |   |   |
| 10.   | arrangement made for collection of garbage from the household<br>( <i>by panchayet/municipality /corporation – 1, by resident/group of residents – 2, others – 9, no arrangement – 3</i> )   |      |   |                    |   |   |   |   |
| 11.   | site where garbage is deposited after removal from the household<br>( <i>to bio-gas plant or manure pit-1, to community dumping spot-2, to household's individual dumping spot(s)-3, others-9, not known-4</i> )   |      |   |                    |   |   |   |   |
| 12.   | <b>if code 2 in item 11,</b> how frequently garbage is cleared<br>( <i>daily-1, not daily but at least once in a week-2, not even once in a week-3, not known-4</i> )  |      |   |                    |   |   |   |   |
| 13.   | animal shed and poultry farm   | 13.1 | existence of animal shed/poultry farm ( <i>attached to the house– 1, detached from the house – 2, no animal shed/poultry farm – 3</i> )                   |                    |   |   |   |   |
|   |  | 13.2 | <b>if code 1 or 2 in item 13.1,</b> disposal of animal/poultry excreta ( <i>to bio-gas plant-1, manure pit-2, used as fuel-3, others-9, not known-4</i> ) |                    |   |   |   |   |
| 14.   | whether experienced any flood during last 5 years?<br>( <i>yes: from excessive rain during monsoon – 1, from river, sea, etc. – 2; no – 3</i> )  |      |   |                    |   |   |   |   |
| 15.   | approach road / lane / constructed path<br>( <i>direct opening to: motorable road / lane / constructed path with street light – 1, motorable road / lane / constructed path without street light – 2, other road / lane / constructed path with street light – 3, other road / lane / constructed path without street light – 4; no direct opening to road / lane / constructed path – 5</i> ) |      |   |                    |   |   |   |   |

Note: for items relating to 'house', information will be collected for the whole 'structure' in which the dwelling unit is located.

| <b>[6] particulars of the dwelling</b> (for the households living in houses, i.e., with codes 1, 2, 3, 4, 5 or 9 in item 14 of block 3) |   |   |
|---|---|---|
| srl. no.  | item  | code / entry                                    |
| (1)   | (2)   | (3)   |
| 1.  | type of the dwelling ( <i>independent house – 1, flat – 2, others – 9</i> )   |   |
| 2.  | number of rooms in the dwelling   | living rooms                                    |
| 3.  |   | other rooms                                     |
| 4.  | floor area of the dwelling<br>( <i>in square feet and in whole numbers</i> )  | living rooms                                    |
| 5.  |   | other rooms                                     |
| 6.  |   | covered veranda                                 |
| 7.  |   | uncovered veranda                               |
| 8.  |   | <b>total (sum of items 4 to 7)</b>              |
| 9.  | ventilation of the dwelling unit ( <i>good – 1, satisfactory – 2, bad – 3</i> )   |   |
| 10.   | total number of married couples in the household  |   |
| 11.   | <b>if entry &gt; 0 in item 10</b> , number of married couples having separate room  |   |
| 12.   | kitchen type<br>( <i>separate kitchen: with water tap – 1, without water tap – 2; no separate kitchen – 3</i> )   |   |
| 13.   | floor type<br>( <i>mud – 1, bamboo / log – 2, wood / plank – 3, brick / lime stone / stone – 4, cement – 5, mosaic / tiles – 6, others – 9</i> )  |   |
| 14.   | wall type<br>( <i>grass/ straw/ leaves/ reeds/ bamboo, etc. – 1, mud (with / without bamboo) / unburnt brick – 2, canvas / cloth – 3, other katcha – 4, timber – 5, burnt brick / stone / lime stone – 6, iron or other metal sheet – 7, cement / RBC / RCC – 8, other pucca – 9</i> )      |   |
| 15.   | roof type<br>( <i>grass/ straw/ leaves/ reeds/ bamboo etc. – 1, mud / unburnt brick – 2, canvas / cloth – 3, other katcha – 4, tiles / slate – 5, burnt brick / stone / lime stone – 6, iron / zinc / other metal sheet / asbestos sheet – 7, cement / RBC / RCC – 8, other pucca – 9</i> ) |   |
| 16.   | if hired<br>( <b>i.e., if code 3, 4 or 5 in item 14 of bl. 3</b> )  | monthly rent (₹)<br>( <i>payable approach</i> ) |



| [7] some general particulars of the households living in houses, i.e., with codes 1, 2, 3, 4, 5 or 9 in item 14 of block 3  |   |              |
|---|---|--------------|
| srl. no.  | item  | code / entry |
| (1)   | (2)   | (3)          |
| <b>A. for all households</b>  |   |              |
| 1.  | duration of stay in the present area* ( <i>years</i> )  |              |
| 2.  | whether the household moved to the present area during last 365 days ( <i>yes-1, no-2</i> )   |              |
| 3.  | where the household was residing before coming to the present area?<br>( <i>in slum/squatter settlement of the same town – 1, in other areas of the same town -2, in slum/squatter settlement of other town – 3, in other areas of other town-4, village – 5</i> )  |              |
| 4.  | <b>if 1 in item 2,</b><br>type of structure of the accommodation availed of immediately before coming to the present area<br>( <i>pucca – 1, semi -pucca – 2, katcha – 3, no dwelling – 4</i> )   |              |
| 5.  | reason for movement to the present area<br>( <i>free / low rent – 1, independent accommodation – 2, accommodation in better locality-3,employment related reasons: proximity to place of work – 4, other employment related reasons-5; others – 9</i> )             |              |
| 6.  | number of members who moved into the household during the last 365 days   |              |
| 7.  | number of members who moved out of the household during the last 365 days   |              |
| <b>B. for households living in slums/squatter settlements (for urban only)<br/>(dwellings of area type code 1, 2 or 3 in item 15, block 3)</b>  |   |              |
| 8.  | does the head of the household possess any of the documents pertaining to the residence status in the slum/squatter settlement?<br>( <i>possesses: ration card – 1, voter ID card – 2, passport – 3, any combination of codes 1 to 3 – 4, other – 9; none – 5</i> ) |              |
| 9.  | whether the household received any benefit as a slum/squatter settlement dweller<br>( <i>received allotment of land / tenement – 1, received other benefits – 9; received no benefit – 2</i> )  |              |
| 10.   | whether the household tried to move out of the slum/squatter settlement<br>( <i>yes – 1, no – 2</i> )   |              |
| 11.   | <b>if code 1 in item 10,</b> main reason<br>( <i>better accommodation - 1, proximity to place of work - 2, social / religious factors – 3, others – 9</i> )   |              |
| *: <i>The present area is the area in which the household is being enumerated and is identified by the area types as recorded in item 15 of block 3, viz., notified slum, non-notified slum, squatter settlement and other areas. Other areas' will mean a village in rural sector and for urban sector, the areas in the town other than notified slum, non-notified slum or squatter settlement. Thus present area means present village or present slum or present squatter settlement or other areas of the town.</i> |   |              |

| [2] particulars of field operations |  |                                      |  |    |    |   |    |    |  |  |
|-------------------------------------|--|--------------------------------------|--|----|----|---|----|----|--|--|
| srl. no.                            | item   |                                      | field investigator (FI)<br>/assistant<br>superintending officer<br>(ASO) |    |    | field officer (FO)/<br>superintending officer<br>(SO) |    |    |  |  |
| (1)                                 | (2)  |                                      | (3)  |    |    | (4)   |    |    |  |  |
| 1 (a)                               | i) name (block letters)  |                                      |  |    |    |   |    |    |  |  |
|                                     | ii) employee code  |                                      |  |    |    |   |    |    |  |  |
|                                     | iii) signature   |                                      |  |    |    |   |    |    |  |  |
| 1 (b)                               | i) name (block letters)  |                                      |  |    |    |   |    |    |  |  |
|                                     | ii) employee code  |                                      |  |    |    |   |    |    |  |  |
|                                     | iii) signature   |                                      |  |    |    |   |    |    |  |  |
| 2.                                  | date(s) of :   |                                      | DD   | MM | YY | DD  | MM | YY |  |  |
|                                     | (i) survey/ inspection   |                                      |  |    |    |   |    |    |  |  |
|                                     | (ii) receipt   |                                      |  |    |    |   |    |    |  |  |
|                                     | (iii) scrutiny   |                                      |  |    |    |   |    |    |  |  |
|                                     | (iv) despatch  |                                      |  |    |    |   |    |    |  |  |
| 3.                                  | total time taken to canvass the<br>schedule by the team of investigators<br>(FI/ASO)<br>(in minutes) |                                      |  |    |    |   |    |    |  |  |
| 4.                                  | number of investigators (FI/ASO) in<br>the team  |                                      |  |    |    |   |    |    |  |  |
| 5.                                  | whether any<br>remarks have been<br>entered by FI/ASO/<br>supervisory officer<br>(yes -1, no-2)      | (i) in block 8/<br>9                 |  |    |    |   |    |    |  |  |
|                                     |  | (ii) elsewhere<br>in the<br>schedule |  |    |    |   |    |    |  |  |

| [8] remarks by investigators (FI/ASO) |
|---------------------------------------|
|                                       |

| [9] comments by supervisory officer(s) |
|--|
|  |

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