

# POLICY BRIEF

## INDIA IN THE WORLD: BENCHMARKING PROGRESS IN URBAN SANITATION PERFORMANCE



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POLICY BRIEFS



# ABSTRACT

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*This Policy brief attempts to benchmark progress in urban sanitation performance globally, from India's perspective. It compares the sanitation scenario in India with the MDG regional blocks (Annex-1) and some comparator countries. It uses a set of global databases to relate urban open defecation<sup>1</sup> (%) with other development indicators such as GDP (Gross Domestic Product) per capita, Human Development Index and Infant Mortality Rate.*

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<sup>1</sup> Urban Open Defecation- Defecation in fields, forests, bushes, bodies of water or other open areas, or disposal of human faeces with solid waste



# INTRODUCTION

## FROM INDIA, LOOKING OUT

Indian policy makers are increasingly looking out to elsewhere in the world to learn, essentially from ‘successful models’! This interest is now quite prevalent in the urban infrastructure and development sectors too. However, benchmarking and tracing longer term performance in India, has been associated essentially with more distinctly ‘growth’ sectors of the economy, be it manufacturing or services industries which are more globalised. Indian policy makers working in development and distribution sectors, especially as in the case here on urban sanitation, while having looked for interesting replicable international models, have not focused on tracking and benchmarking medium to longer term performances as yet. International development progress monitoring, is resorted to by development agencies which work in multiple countries. The Millennium Development Goals (MDGs) set out a useful and shared platform for benchmarking and tracking progress. This Policy Brief hopes to initiate the correction of this lacunae, in the urban sanitation sector, by benchmarking India’s progress, as against other regions/countries, on one critical criteria of Open Defecation (OD)<sup>1</sup> in urban areas, which (is) should be of a significant policy concern for India.

## URBAN AND NOT RURAL SANITATION

India is well known in the sanitation sector to be the location which houses the largest number of people who do not have access to improved sanitation. Close to 60% of the number of people globally who do not have toilets and have to defecate in the open, live in India. This large percentage is also driven by the fact that India is the second most populous country in the world and therefore it out-scales other countries. The scale of the problem is reflected within India too where fifty percent of the India’s population as a whole don’t have access to toilets. Solving India’s open defecation problem therefore is both a national and global priority. However, this priority has in the past has mainly focused on rural sanitation, which is the location where access to toilets is the weakest with 66 % of the population still having to defecate in the open in 2011.

This stark feature of the sanitation situation in India eclipses the urban sanitation problem still prevalent in the country, with 13.1 % of the urban population not having access to toilets and having to defecate in the open in India’s cities in 2011. At the global scale too, as per the Joint Monitoring Program (JMP) 2013 report, this represents 48 % of the global urban population which doesn’t have access to toilets and therefore is a significant problem in its own right. Unfortunately, this aspect of the sanitation problem has not received much focus in the international development community, and needs to receive more focus in the national agenda and among policy makers.

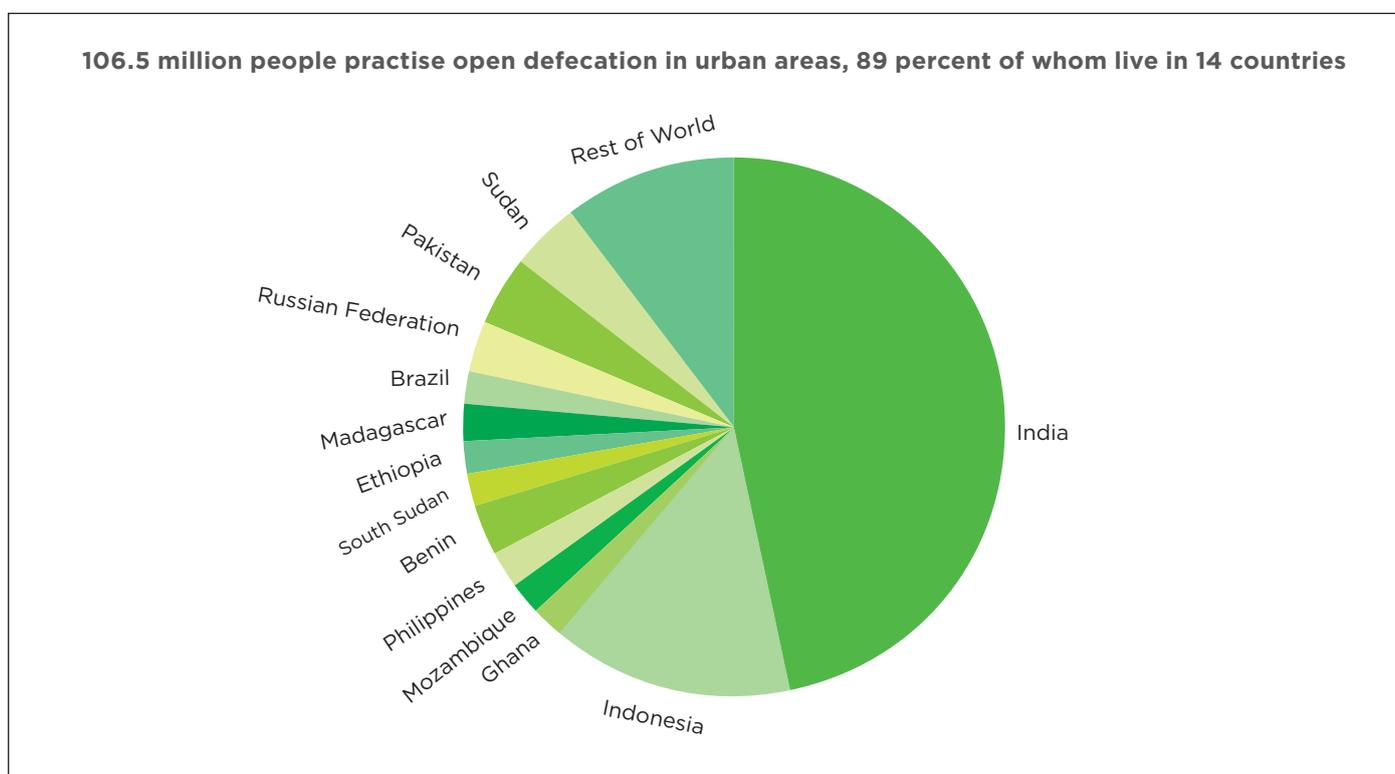
Monitoring adequate and safe urban sanitation needs a set of indicators which can capture all segments along the sanitation chain, such as improved sanitation, collection, treatment, disposal and reuse, to fully reflect Open Discharge Free (ODF) management of waste. However, this Policy Brief focuses on Open Defecation (OD), which is a minimum criterion for basic safe sanitation and is of crucial concern in India.

## EXPLORING THE JMP DATABASE ALONGSIDE OTHER GLOBAL DATABASES

In 2000, at the Millennium Summit of the United Nations in New York, 189 countries pledged to free people from extreme poverty and multiple deprivations. This resulted into eight sets of targets called the Millennium Development Goals. The WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation is the official United Nations mechanism tasked with monitoring progress towards the Millennium Development Goal (MDG) relating to drinking-water and sanitation (MDG 7, Target 7c), which is to: “Halve, by 2015, the proportion of people without sustainable access to safe drinking-water and basic sanitation”.

A static look at India and its place in the world, with respect to OD in 2011, as reflected in Figure 1, reveals that India has the largest number of people in urban areas that still need to resort to OD. While this does point to the scale and size of the problem, this figure doesn’t reveal how the other countries in the list have performed. It also doesn’t help policy makers understand some important questions regarding the trajectory of progress/or otherwise, that is being

Figure 1: Urban Sanitation, weakest countries, 2011



*World Health Organization and UNICEF (2013)*

made in the sector in India as compared with other comparator countries/regions over time, and the possible key impacts in terms of improved social development and health outcomes.

This Policy Brief therefore presents a temporal medium term performance assessment for Indian Policymakers, to have a view of basic sanitation improvements, alongside growth in GDP per capita<sup>2</sup> development impact measures that are believed to be strongly impacted by sanitation improvements namely the Human Development Index<sup>3</sup> and Infant Mortality Rate<sup>4</sup>.

The first section of this Policy brief compares India with world regions in terms of sanitation situation and how they relate to other development indicators. The second section does a similar exercise for comparing India with other comparator countries such as BRICS countries and relevant countries. The comparator countries have been selected taking into account similar size and urban population as India and also some regional representation from Southern Asia, South-Eastern Asia, Eastern Asia, Latin America and the Caribbean and Sub-Saharan African regions.

<sup>2</sup> GDP per capita- A measure of the total output of a country (calculated by adding the value of all final goods and services produced in the country during the year), divided by the number of people in the country.

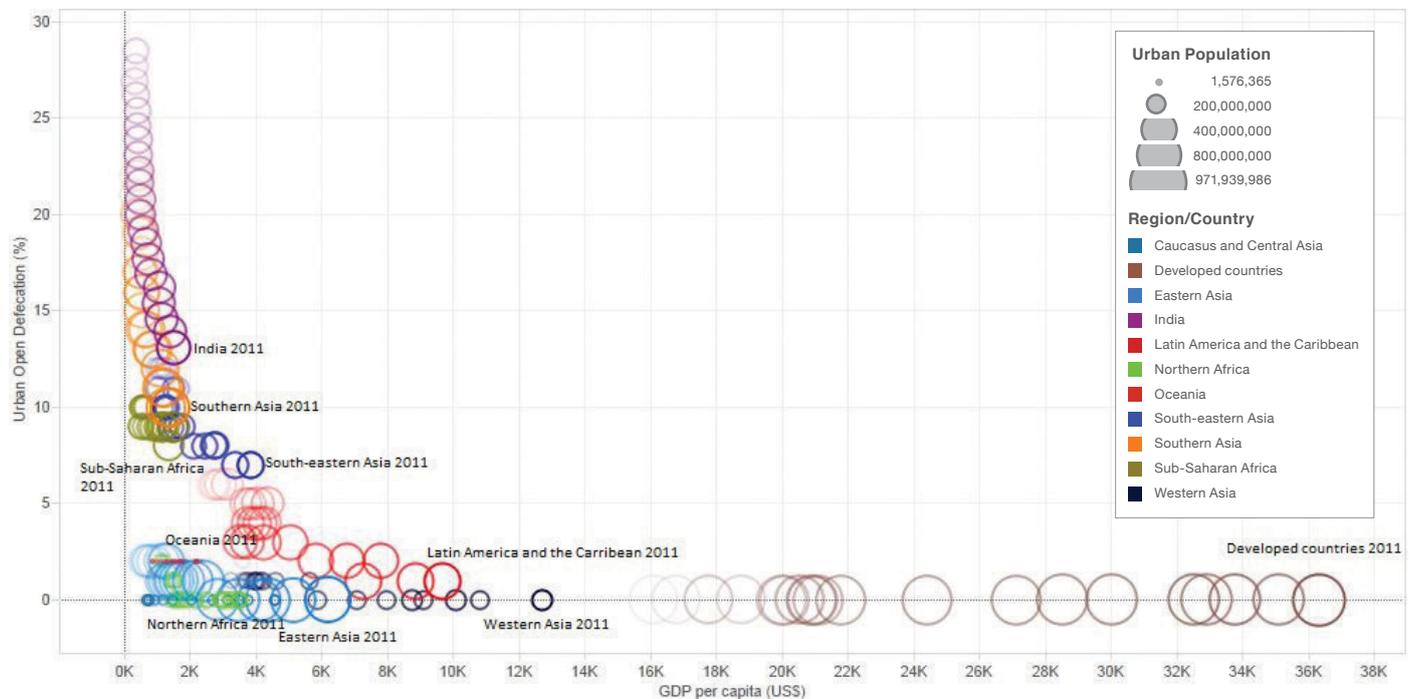
<sup>3</sup> Infant Mortality Rate- The number of deaths of infants under one year old per 1,000 live births

<sup>4</sup> Human Development Index- A composite statistic of life expectancy, education, and income indices



## INDIA VS. REGIONS

Figure 2: Urban Open Defecation (%) vs. GDP per capita for India and other regions<sup>5</sup>, 1990-2011<sup>6</sup>



Source: World Health Organization and UNICEF (2013), World Bank (2013), CPR analysis

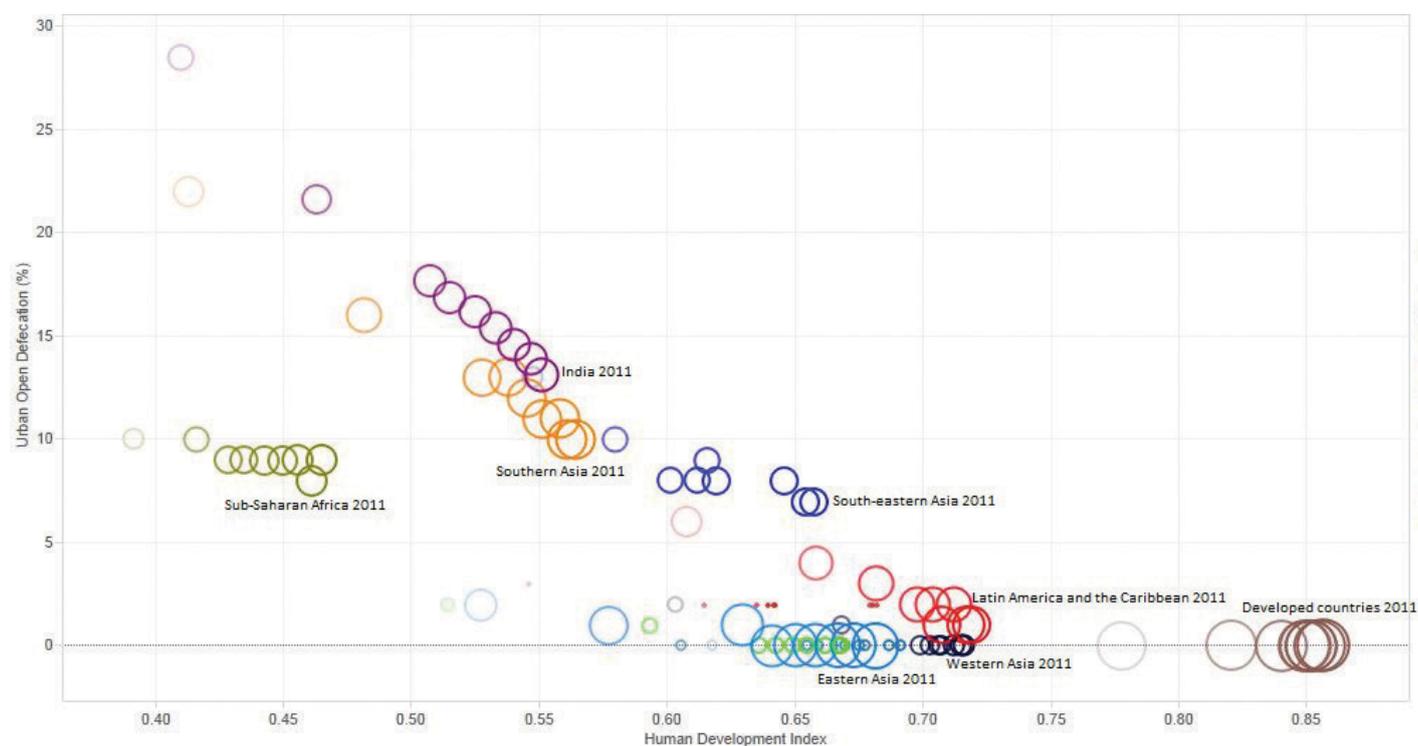
The above figure reveals the following points:

- Developed countries have had zero open defecation and have seen significant increase in per capita GDP when compared to other groups of countries and regions
- Sub-Saharan Africa shows the least progress in terms of urban open defecation and per capita GDP during this period.
- South-eastern Asia has shown rapid improvement both in urban open defecation (%) and GDP per capita (US\$)
- Eastern Asia, Latin America and the Caribbean regions have performed consistently well both in terms of per capita GDP as well as in reducing urban open defecation
- India and Southern Asia starts from a very high base percentage for urban open defecation. They however also show the most impressive improvement in terms of percentage open defecation, but have some way to go to catch up with most other regions with respect to per capita GDP growth.

<sup>5</sup> The size of every bubble is the total urban population in that country or region

<sup>6</sup> Colour shades darken with the time, with lightest shade being year 1990 and darkest being year 2011

Figure 3: Urban Open Defecation (%) vs. Human Development Index (HDI)<sup>7</sup> for India and other regions<sup>8</sup>, 1990-2011<sup>9</sup>



Source: World Health Organization and UNICEF (2013), World Bank (2013), United Nations Development Programme (2013), CPR analysis

The above figure reveals the following points:

- Countries with higher GDP per capita also show higher HDI numbers
- Latin America and the Caribbean region starts with low urban open defecation and increases its HDI and open defecation status considerably, consistently
- Sub-Saharan Africa has improved its HDI while not being able to reduce urban open defecation
- India and Southern Asia has reduced urban open defecation while increasing its HDI at the same time. In 2011 India and Southern Asia have reached the HDI status similar to that other regions like Latin America and the Caribbean, the Eastern Asia and the South-eastern Asia had in 1990.

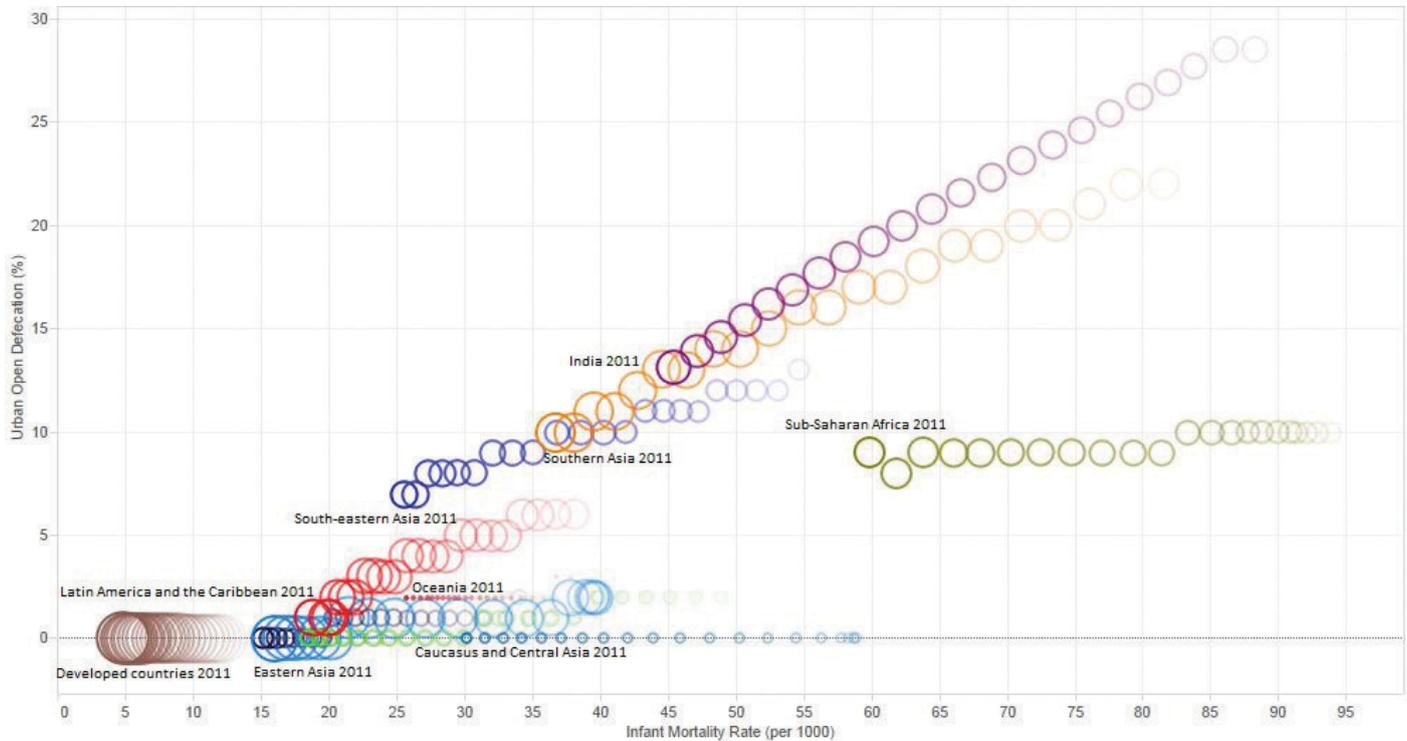
<sup>7</sup> HDI values for some countries/regions are not available for all the years

<sup>8</sup> The size of every bubble is the total urban population in that country or region

<sup>9</sup> Colour shades darken with the time, with lightest shade being year 1990 and darkest being year 2011



Figure 4: Urban Open Defecation (%) vs. Infant Mortality Rate IMR (per 1000 people) for India and other regions<sup>10</sup>, 1990-2011<sup>11</sup>



Source: World Health Organization and UNICEF (2013), World Bank (2013), CPR analysis

The above figure reveals the following points:

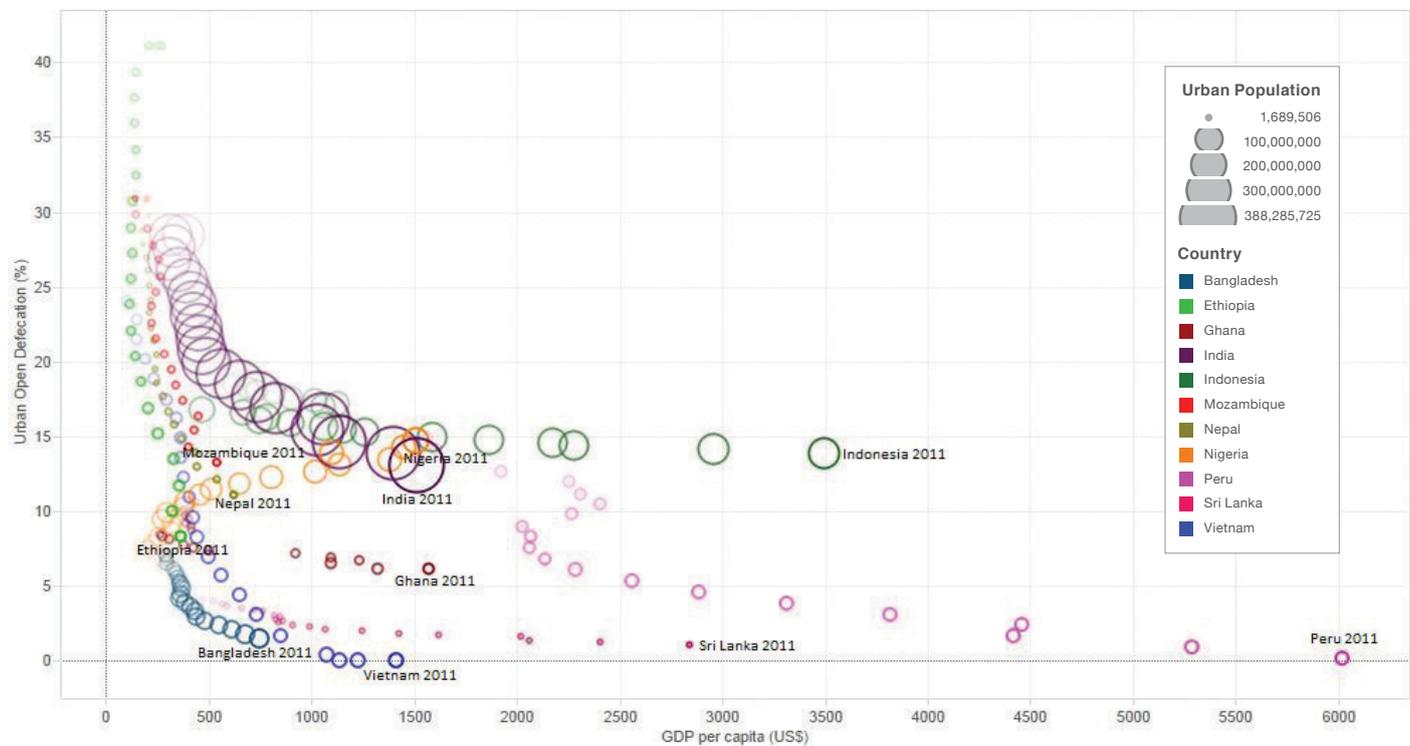
- Reduction in Urban open defecation shows strong correlation with reduction in Infant Mortality Rate (IMR)
- Sub-Saharan Africa has successfully reduced IMR inspite of failing to reduce the urban open defecation significantly
- Latin America and the Caribbean region and South-eastern Asia has shown decent improvement both in reduction of urban open defecation and IMR
- India and Southern Asia, starts from a very high base urban open defecation and has shown the most impressive improvement in terms of percentage open defecation and reduction of IMR, at a faster rate than other regions

<sup>10</sup> The size of every bubble is the total urban population in that country or region

<sup>11</sup> Colour shades darken with the time, with lightest shade being year 1990 and darkest being year 2011

# INDIA VERSUS COMPARATOR COUNTRIES

Figure 5: Urban Open Defecation (%) vs. GDP per capita for India and other comparator countries<sup>12</sup>, 1990-2011<sup>13</sup>



Source: World Health Organization and UNICEF (2013), World Bank (2013)

The above figure reveals the following points:

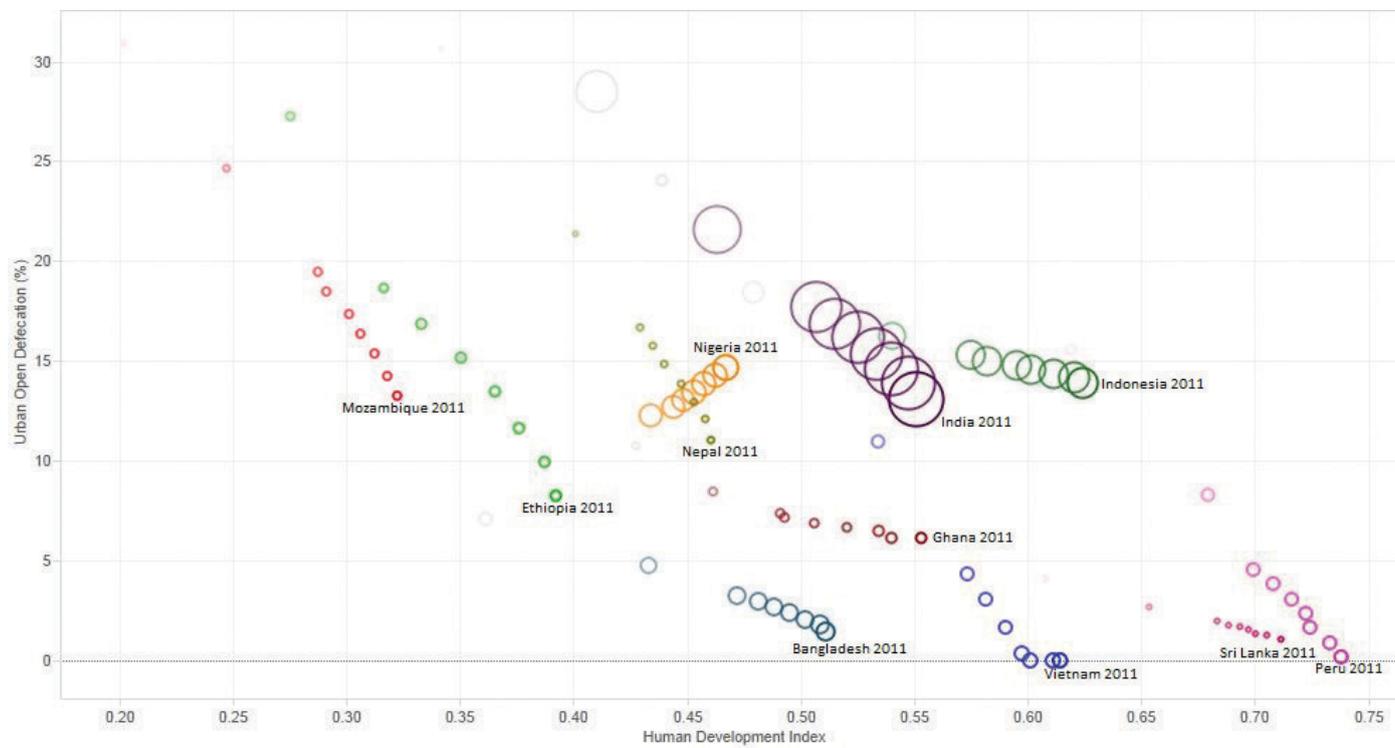
- Ethiopia has performed the best in terms of reduction of urban open defecation, inspite of lower per capita GDP growth
- Indonesia's GDP per capita has increased significantly but its performance with respect to reduction of urban open defecation has been less significant
- Peru while reducing its urban open defecation to zero, during this period has also improved its economy, ahead of all the other countries
- Vietnam has achieved almost zero open defecation status in the time span
- Nigeria is a clear outlier in the trend, it is increasing urban open defecation over years while its per capita GDP has increased
- During 1990 to 2011 India, Nepal and Mozambique have had similar improvement in the reduction of urban open defecation, but India has seen higher growth in per capita GDP in this period.

<sup>12</sup> The size of every bubble is the total urban population in that country or region

<sup>13</sup> Colour shades darken with the time, with lightest shade being year 1990 and darkest being year 2011



Figure 6: Urban Open Defecation (%) vs. Human Development Index (HDI)<sup>14</sup> for India and other comparator countries<sup>15</sup>, 1990-2011<sup>16</sup>



Source: World Health Organization and UNICEF (2013), World Bank (2013), United Nations Development Programme (2013)

The above figure reveals the following points:

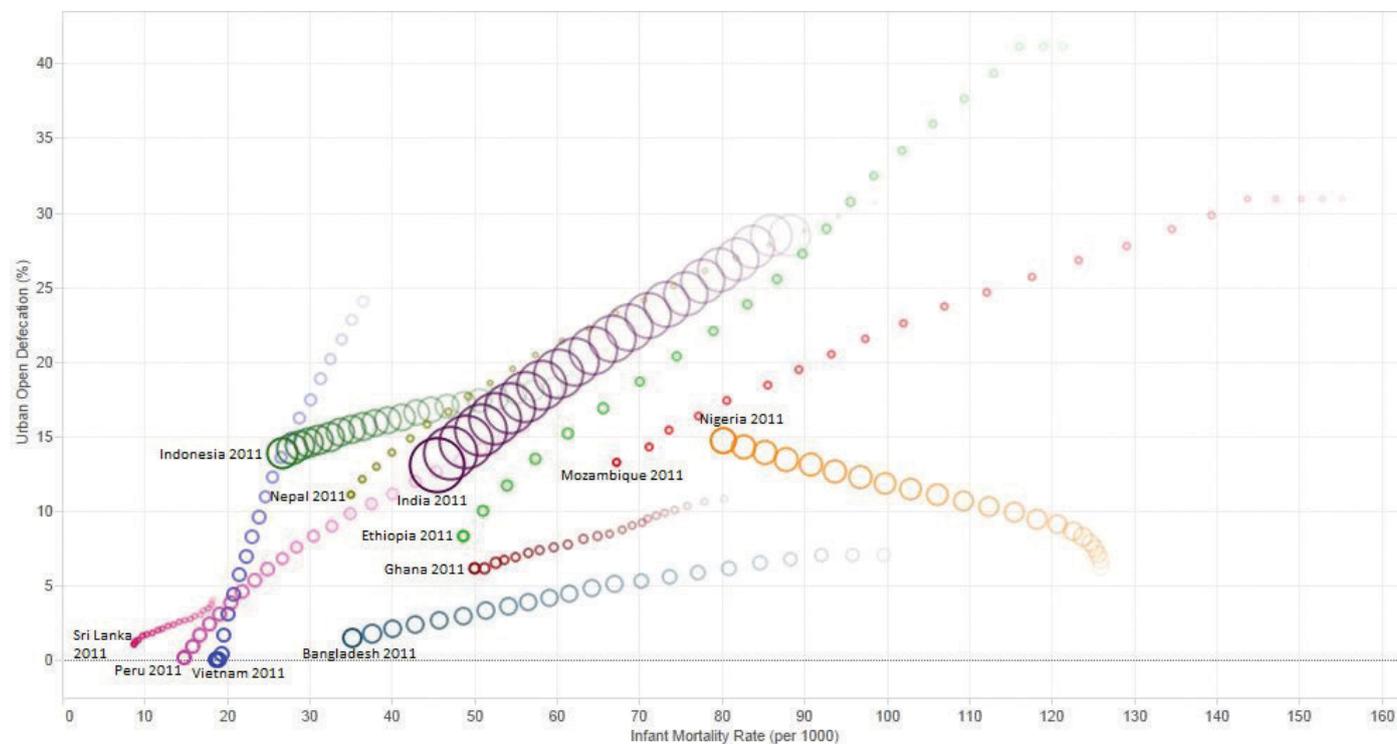
- HDI consistently improves with reduction in urban open defecation, Nigeria is a clear outlier in the trend, it shows increasing urban open defecation while improving HDI, over this period
- India, Nepal, Ethiopia and Mozambique have had similar improvement to reduce urban open defecation, but India has reached a much higher current HDI than them.

<sup>14</sup> HDI values for some countries are not available for all the years

<sup>15</sup> The size of every bubble is the total urban population in that country or region

<sup>16</sup> Colour shades darken with the time, with lightest shade being year 1990 and darkest being year 2011

Figure 7: Urban Open Defecation (%) vs. Infant Mortality Rate IMR (for 1000 people) for India and other comparator countries<sup>17</sup>, 1990-2011<sup>18</sup>



Source: World Health Organization and UNICEF (2013), World Bank (2013)

The above figure reveals the following points:

- Indonesia has reduced IMR significantly but has performed average on reduction of urban open defecation
- Vietnam has achieved almost zero open defecation status in the time span but not been able to reduce IMR considerably while Peru has done better than it to reduce IMR
- Nigeria is a clear outlier in the trend, it is increasing urban open defecation over years while reducing its IMR
- India has performed better than most of the comparator countries to reduce urban open defecation except Ethiopia and Mozambique

<sup>17</sup> The size of every bubble is the total urban population in that country or region

<sup>18</sup> Colour shades darken with the time, with lightest shade being year 1990 and darkest being year 2011



## INDIA AND BRICS

Compared to other BRICS countries, India has very poor performance in the urban sanitation sector. While, 13.1% of the total urban population in India defecates in the open, it is almost negligible in countries like Brazil, Russia and China. All the countries have high urban population, but the level of urbanization in India is still very low as compared to others. As low as, 59.7% of the total urban population in India have access to improved sanitation.

The figure below shows the urban sanitation indicators for BRICS from the JMP report.

Figure 8: Urban Sanitation Scenario for BRICS, 2011

Country	Total Population	Urban Population	Urban Population (%)	Urban Unimproved (%)	Urban Open Defecation (%)
Brazil	196655014	166414446	84.6	13.3	0.9
Russia	142835555	105438095	73.8	25.6	1
<b>India</b>	<b>1241491960</b>	<b>388285725</b>	<b>31.3</b>	<b>40.3</b>	<b>13.1</b>
China	1347565324	681507520	50.6	25.9	0
South Africa	50459978	31282145	62	15.7	2.1

Source: World Health Organization and UNICEF (2013)

## REDUCTION IN URBAN OPEN DEFECACTION

Figure 9: Top 15 countries, Percentage decline in urban population defecating in open, 1990-2011

Rank	Country	Urban Population (2011)	Urbanization (% , 2011)	Urban Population defecating in open (1990)	Urban Population defecating in open (2011)	Absolute decline 1990-2011	Urban Open Defecation percentage in 1990	Urban Open Defecation percentage in 2011	Percentage point decline 1990-2011
1	Cambodia	2857392	20.0	735513	360855	374658	49.6	12.6	37.0
2	Ethiopia	14402230	17.0	2510297	1193932	1316365	41.2	8.3	32.9
3	Eritrea	1154820	21.3	161323	0	161323	32.3		32.3
4	Angola	11612620	59.2	1251668	328364	923304	32.6	2.8	29.8
5	Benin	4087327	44.9	848985	1106831	-257846	51.6	27.1	24.5
6	Viet Nam	27552575	31.0	3278503	0	3278503	24.1	0.0	24.1
7	Kiribati	44385	43.9	11140	9232	1908	44.3	20.8	23.5
8	Bolivia (Plurinational State of)	6741184	66.8	907338	310831	596507	24.5	4.6	19.9
9	Nepal	5176387	17.0	518870	576871	-58001	30.7	11.1	19.6
10	Mozambique	7462635	31.2	884128	990997	-106869	30.9	13.3	17.7
11	Peru	22714718	77.3	2336199	47553	2288646	15.6	0.2	15.4
12	India	388285725	31.3	63564949	50855328	12709621	28.5	13.1	15.4
13	Montserrat	852	14.2	155	0	155	11.5		11.5
14	Botswana	1251990	61.7	65077	1810	63267	11.2	0.1	11.1
15	Chad	2511742	21.8	313262	361117	-47855	25.0	14.4	10.7

Source: World Health Organization and UNICEF (2013)

While over the period, India has had the highest absolute decline of urban population defecating in the open, the above figure show that, it ranks twelfth in terms of percentage point decline in urban open defecation after countries like Cambodia, Ethiopia and Vietnam. This is due to a high base number to start with and the improvement in sanitation conditions not been able to keep pace with the urbanization in the country. Most of the countries that have performed better than India in terms of percentage point decline have smaller total urban population. Indonesia that is comparable to India in terms of large urban population, ranks 32nd on the list.



## CONCLUSION

In terms of regional comparisons, India and Southern Asia have had some success in improving social and health indicators with moderate success in reducing open defecation and increasing GDP per-capita over the last 20 years, when compared to other regions. However given the low levels base that India has had, there the most significant challenges are ahead of us yet. While during the same period, regions such as South-Eastern Asia and East Asia have performed the best with countries like Vietnam and Cambodia reducing their urban open defecation by a significant percentage point. Latin America and the Caribbean region has been an average performer while Sub-Saharan Africa, with exception of Ethiopia has not been able to keep up their sanitation efforts.

There are a number of individual but smaller countries that have performed better than India on reducing open defecation and improving social and health indicators. In India, we need to understand the performance of individual states better with in this global comparison and identify the city types, categories which need more attention if India is to evolve a strategy to improve and accelerate its improvement trajectory. This is not really an issue of choice but a national and international necessity, as due to India's subordinate performance, the sanitation related target, is one of the few Millennium Development Goals that is at risk of not being met within the planed period.

# ANNEX-1

## MILLENNIUM DEVELOPMENT GOALS: REGIONAL GROUPINGS

<p><b>Developing countries by regions</b></p>	<p><b>SUB SHAHARAN AFRICA</b> Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Cote d'Ivoire, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea – Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mayotte, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leon, Somalia, South Africa, South Sudan, Swaziland, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe, Barbados, Belize, Bolivia, (Plurinational State of), Brazil, British, Virgin Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Ecuador, El Salvador, Falkland Islands(Malvinas), French Guinea, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, United States Virgin Islands, Uruguay, Venezuela (Bolivarian Republic of),</p> <p><b>CAUCASUS AND CENTRA ASIA</b> Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan.</p> <p><b>NOTHERN AMERICA</b> Algeria, Egypt, Libya, Morocco, Tunisia, Western Sahara.</p> <p><b>EASTERN ASIA</b> China, Democratic Republic of Korea, Mongolia, Republic of Korea.</p> <p><b>SOUTHERN ASIA</b> Afghanistan, Bangladesh, Bhutan, India, Iran ( Islamic Republic of), Maldives, Nepal, Pakistan, Sri Lanka</p> <p><b>SOUTH - EASTERN ASIA</b> Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines Singapore, Thailand, Timor- Leste, Viet Nam</p> <p><b>WESTERN ASIA</b> Bahrain, Iraq, Jordan, Kuwait, Lebanon, West Bank and Gaza Strip, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen.</p> <p><b>OCEANIA</b> American Samoa, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Island, Micronesia (Federated State of), Nauru, New Caledonia, Niue, Northern Mariana islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu.</p> <p><b>LATIN AMERICA &amp; THE CARIBBEAN</b> Anguilla, Antigua and Barbuda, Argentina, Aruba, Bahamas.</p>
<p><b>Developed countries</b></p>	<p>Albania, Andorra, Australia, Austria, Belarus, Belgium, Bermuda, Bosnia and Herzegovina, Bulgaria, Canada, Channel Island, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Faeroe Island, Finland, France, Germany, Greece, Greenland, Hungary Island, Ireland, Isle of Man, Israel, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Montenegro, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, The Former Yugoslav Republic of Macedonia, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America.</p>
<p><b>Least developed countries</b></p>	<p>Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea – Bissau, Haiti, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Mall, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Samoa, Sao Tome and Principe, Senegal, Sierra Leon, Solomon Islands, Somalia, South Sudan, Timor- Leste, Togo, Tuvalu, Uganda, United Republic of Tanzania, Vanuatu, Yemen, Zambia.</p>



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## ABOUT SCI-FI SANITATION

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Through research, SCI-FI: Sanitation aims to inform and support the formulation and implementation of the Government of India's urban sanitation programmes and investments. The research program will study two cities in two different states to understand the reasons for poor sanitation and inform and support the state and city governments in modifying their urban sanitation programs so that they are supportive of alternative technology and service delivery models, with the goal of increasing access to safe and sustainable sanitation in urban areas.

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**POLICY BRIEFS:** These present a brief summary of key policy issues. Challenges that need to be addressed at national, state and local city level are discussed and some recommendations for policy makers are suggested.

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