Child nutrition in an era of multiple transitions: Insights from the Rapid Survey on Children (2013-14)

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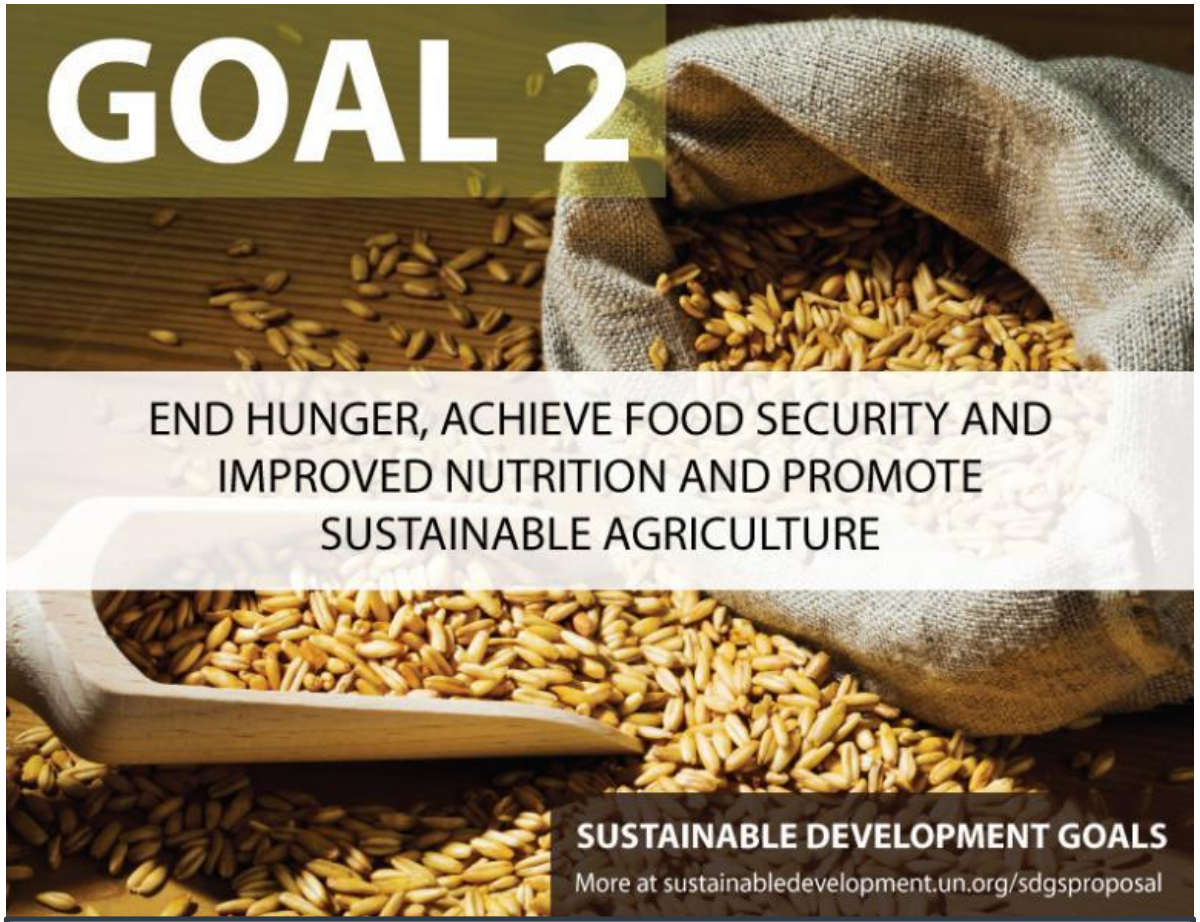
The new global goals

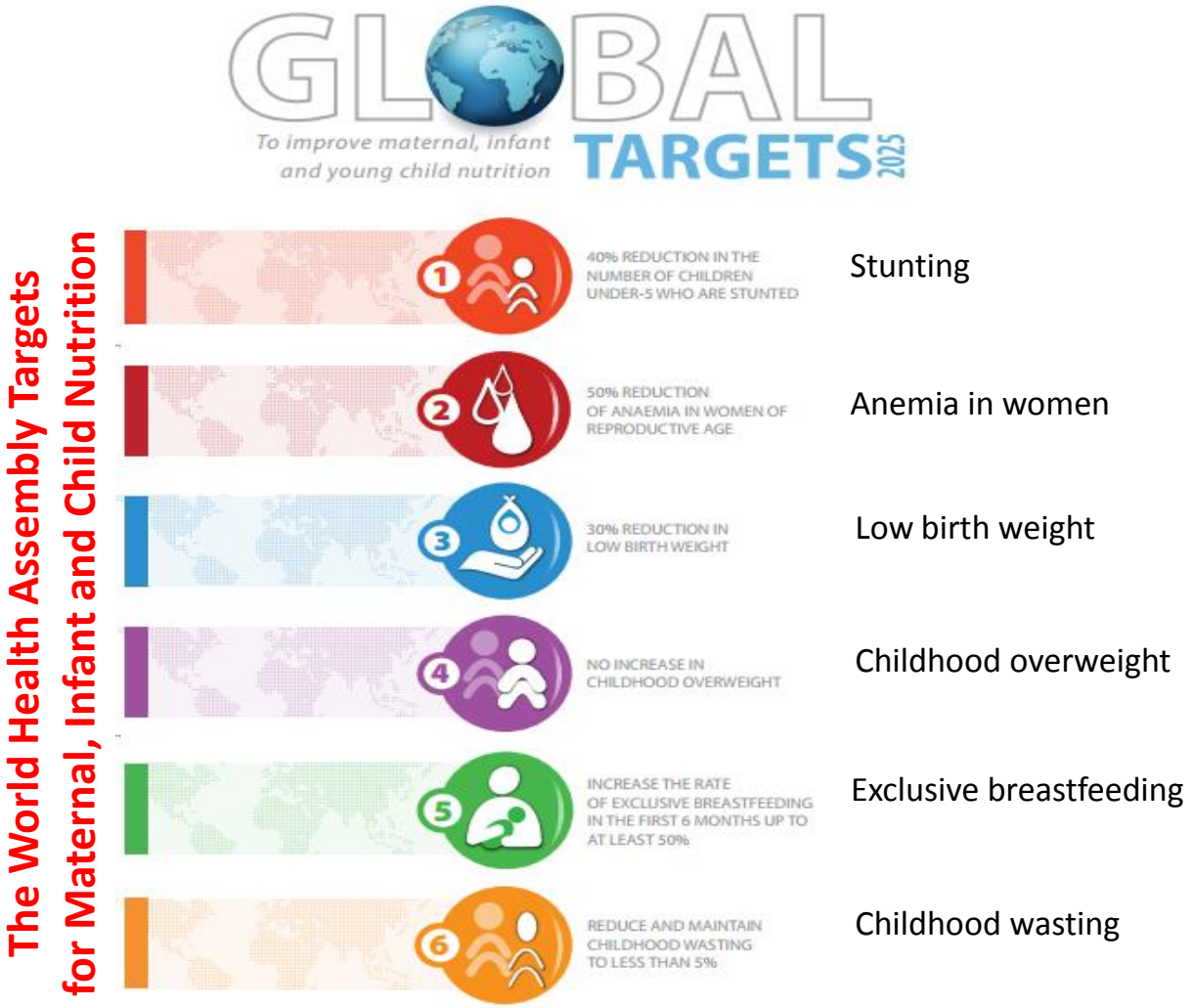
Nutrition is predominantly in SDG2

Nutrition in the SDGs

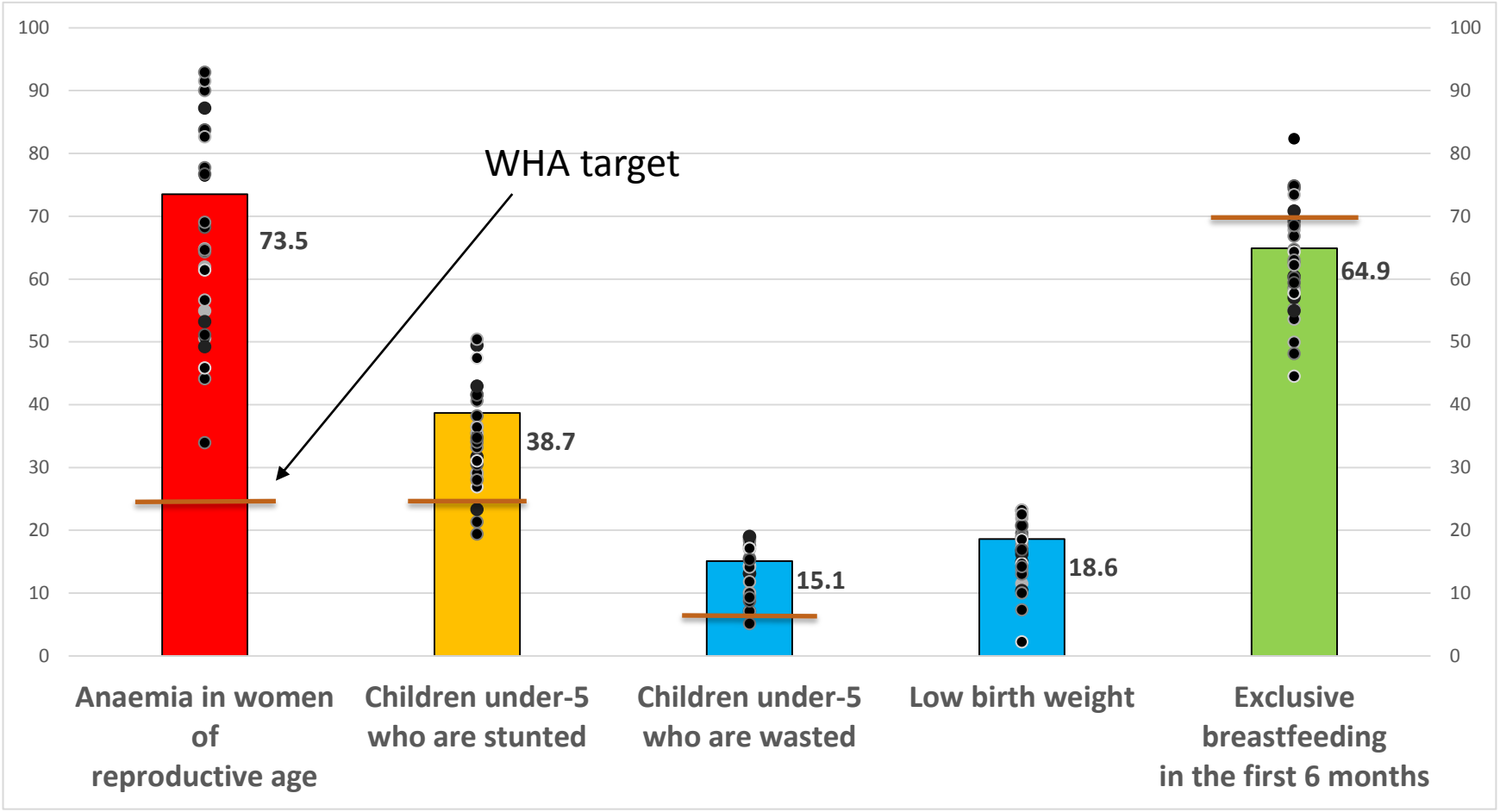


2.2 BY 2030 END ALL FORMS OF MALNUTRITION, INCLUDING ACHIEVING BY 2025 THE **INTERNATIONALLY AGREED TARGETS ON STUNTING AND WASTING IN CHILDREN UNDER FIVE YEARS OF AGE**, AND ADDRESS THE **NUTRITIONAL NEEDS OF ADOLESCENT GIRLS, PREGNANT AND LACTATING WOMEN, AND OLDER PERSONS**

The World Health Assembly Targets



World Health Assembly nutrition targets to be achieved by 2025 - India



Source: The Rapid Survey on Children (2013/2014) (Ministry of Women and Child Development, Government of India; District Level Health Survey (DLHS) 4 (2012/2013) & Clinical; Anthropometry and Biometry (CAB) Census Survey (2014).
Notes: Anemia data was pooled from DLHS 4 and Census CAB. India averages for anemia were derived using a weighted mean of women aged 18-49 years. Population weights were taken from Census 2011 data.
Columns represent all India average and each dot is the average for the state.
Targets based on WHA targets on nutrition: Where does India stand? – IFPRI POSHAN blog

RSOC is the only current data to baseline India's progress on WHA/SDG targets

Indicator	2006 prevalence (%) [NFHS3]	2014 prevalence (%) [RSoC]	2015 prevalence (%) [NFHS4]	2025 target prevalence (%)
Childhood stunting	48.0	38.7	Data unavailable	24.0
Anemia in women of reproductive age	55.3	Data unavailable	Data unavailable	22.8
Low birth weight	21.5	18.6	Data unavailable	NA
Childhood overweight	1.5	Data unavailable	Data unavailable	No increase
Exclusive breastfeeding in first 6 months	46.3	64.9	Data unavailable	69.2*
Childhood wasting	20.0	15.1	Data unavailable	5.0

Note: *Countries with baseline exclusive breastfeeding (EBF) rates close to or above 50% (the global target) are encouraged to continue efforts to increase EBF rates by a minimum AAPPI of 1.2% . Hence, 2025 target for India is calculated using the suggested AAPPI of 1.2%.

Sources:
International Institute for Population Sciences (IIPS) and Macro International. 2007. National Family Health Survey (NFHS-3), 2005–06: India: Volume I. Mumbai: IIPS. http://rchiips.org/nfhs/NFHS-3%20Data/VOL-1/India_volume_I_corrected_17oct08.pdf. Accessed on September 8, 2016.
Ministry of Women and Child Development. (2016). Rapid survey on children (RSOC) 2013-14. National report. http://wcd.nic.in/sites/default/files/RSOC%20National%20Report%202013-14%20Final.pdf. Accessed on September 8, 2016.
World Health Organization. Global targets tracking tool. http://www.who.int/nutrition/trackingtool/en/. Accessed on September 8, 2016.

About the RSOC (1)

- **Scope**: 28 states (including undivided Andhra Pradesh) and NCT of Delhi.
- **Target respondents**: head of HH/adult member for household information, all ever married women (EMW) aged 15-49 who had a live birth in the three years preceding the survey, currently married pregnant women aged 15-49 for maternal and child health care.
- **Data**: Household and anganwadi level
- **Anthropometric measurements** for all children below 5 years and adolescent girls aged 10-18 living in the selected households.
- **Sample**: 105,483 households and 5,630 AWCs; 1,11,636 EMWs in the age group of 15-49 years old; for anthropometry: height and weight of 90,908 children aged 0-4 and over 28,000 adolescent girls aged 10-18 were collected across all states.
- **Timeframe**: 23 weeks (from 3rd week of November 2013 to 2nd week of May 2014).
- **Availability**: National and state fact sheets, national report. Questionnaires and unit-level data still unavailable in public domain

Source: RSOC National Report, 2016

RSOC – data available

- **Household**: aspects of child development, maternal care, school/college attendance among persons aged 5-24 years, early childhood care and pre-school education and the household environment like access to drinking water, use of toilet facilities and use of iodized salt at household level; several social determinants
- **ICDS**: infrastructural facilities, profiles of Anganwadi workers, training received, knowledge and awareness about program components, awareness and utilization of the six services provided under ICDS.

Source: RSOC National Report, 2016

RSOC Sampling

- Intended to be comparable with NFHS-3, sampling strategy for RSoC and NFHS-3 generates estimates at the national and state level
- Broad sampling methodology is the same:
  - Multi-stage stratified sampling for rural and urban areas,
  - Similar sampling frames: two stage sampling in rural areas, three stage sampling in urban areas.
- The key differences in the methodology appears to be the estimation of the sample size at the state level and the household level (rural and urban) and stratification of the households in rural areas.

Sampling design comparisons: rural

Table 2 : Sampling Design - Rural			
		RSoC	**NFHS-3**
Sampling Strategy		1) Selection of Primary Sampling Units (villages) 2)Random selection of households within PSUs.	1) Selection of Primary Sampling Units (villages) 2)Random selection of households within PSUs.
Sampling Frame - First Stage		List of Villages - Primary Census Abstract (2011).	List of Villages - Primary Census Abstract (2001). A minimum of fifty households in every village in the sampling frame.
Stratification	Geographic	Division of districts into regions. The state rural sample allotted to different regions in proportion to the population size in each region.	Division of districts into regions.
	Clusters	Regions further stratified into clusters. Clusters created to maximize homogeneity based on explicit variables like village size or caste and female literacy as an implicit variable.	Further stratification based on village size, percentage of males working in the non-agricultural sector, percentage of the population belonging to scheduled castes or scheduled tribes, and female literacy (implicit variable).
	Other		Additionally for states with high HIV prevalence, HIV levels used for further stratification.
	Primary Sampling Units(PSU)	PSUs selected based on PPS random sampling in each cluster.	Number of PSUs sampled in each cluster proportional to the cluster size. PSUs selected based on PPS random sampling in each cluster.
Sampling Frame - Second Stage		Listing of households in the PSU. PSUs greater than 250 households, split into exclusive segments of around 125 households and two segments were systematically randomly selected	Listing of households in the PSU. PSUs greater than 500 households, split into exclusive segments (100 to 200 households) and two segments were selected based on PPS.
Sampling of Households		Circular systematic random sampling Number of households selected in a rural PSU: Category A - 20 households; at least one child below 6 years. Category B - 6 households; no child below 6 years.	Systematic Sampling Number of households selected in a rural PSU- Product of the number of households listed in the PSU and the probability of selection of a household in the selected rural PSU.

Sampling design comparisons: urban

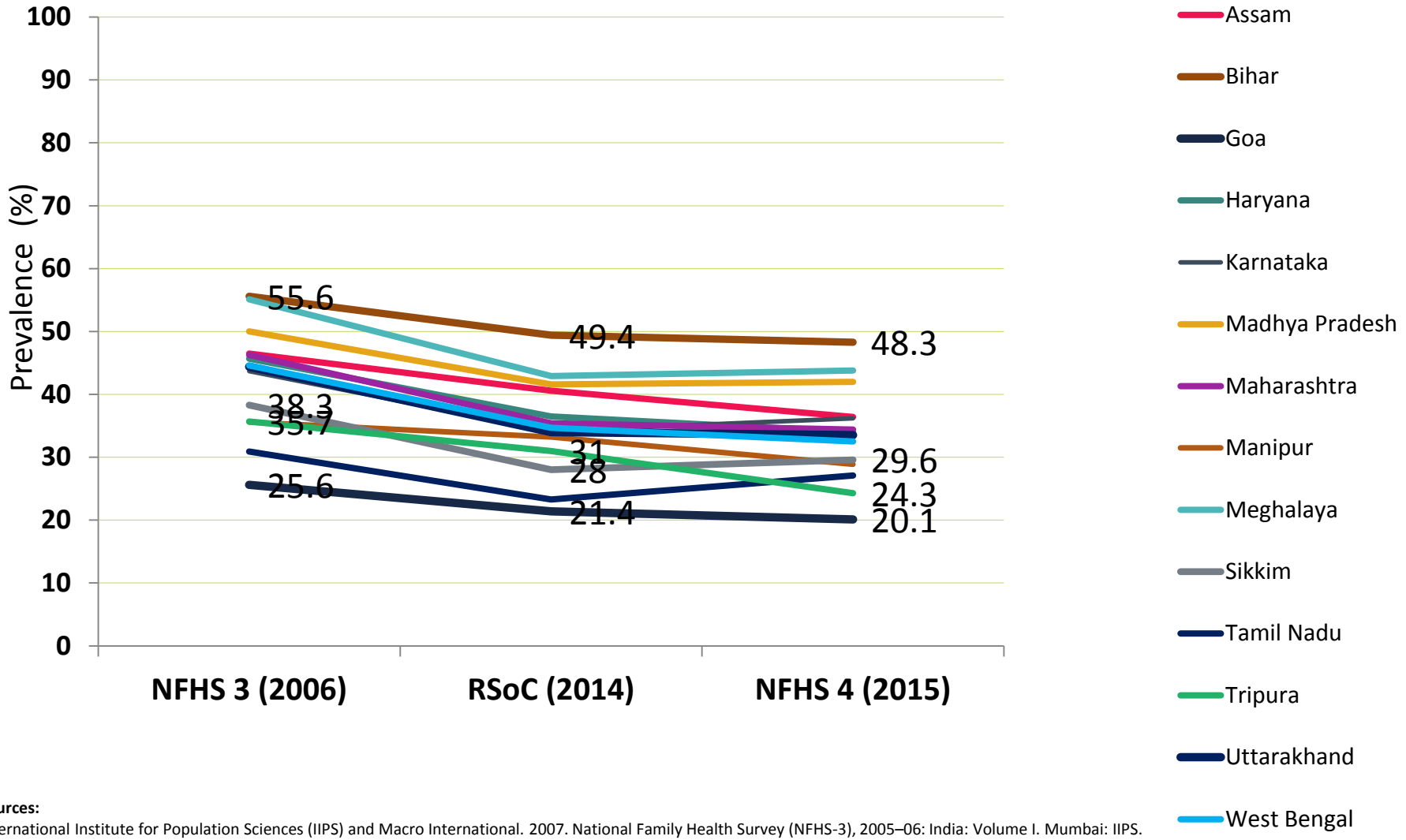
Table 3 : Sampling Design - Urban		
	RSoC	**NFHS-3**
Sampling Strategy	1) Selection of urban wards 2) Random selection of one census enumeration block 3) Random selection of households within the block	1) Selection of urban wards 2) Random selection of one census enumeration block 3) Random selection of households within the block
First Stage	Division of districts into regions. Sample allocated to each region in proportion to the respective urban population size of the region. Sampling Frame - Ward List (Census 2011). Within each region, required numbers of wards selected using PPS systematic random sampling procedure taking female literacy (Census 2011) as the implicit variable.	Sampling Frame - Ward List (Census 2001). A sample of urban wards drawn from the ward list by PPS sampling.
Second Stage	List of all the Census Enumeration Block (CEB) in a selected ward. One CEB selected based on PPS systematic sampling.	List of all the Census Enumeration Block (CEB) in a selected ward. One CEB selected based on PPS systematic sampling.
Third Stage Sampling of households	List of households in a CEB based on household listing operations. Circular systematic random sampling : Category A - 20 households; at least one child below 6 years. Category B - 6 households; no child below 6 years.	List of households in a CEB based on household listing operations. Systematic Sampling. Number of households selected - Product of the number of households listed in the PSU and the probability of selection of a household in the selected PSU. Third stage sampling frame modified for eight cities with separate indicators for slum and non-slum areas.

2005-2014: A period of multiple transitions

- *Economic*: Strong economic growth over the decade, at a national level. More variable at state level both in level and strength and the source of economic growth.
- *Policy and programs*: Several national programs/schemes to address determinants of nutrition (ICDS, health, self-help groups, cash transfers, PDS reforms, MGNREGA, and more)
- *Food environment*: Food prices, food marketing and availability, increase in cheap cereals (linked to PDS)
- *Urbanization*: Rural-urban-rural migration for multiple reasons; burgeoning of mega-cities

In this context, how have states progressed over time on nutrition?

STUNTING: Declined overtime; interstate variability exists



Sources:

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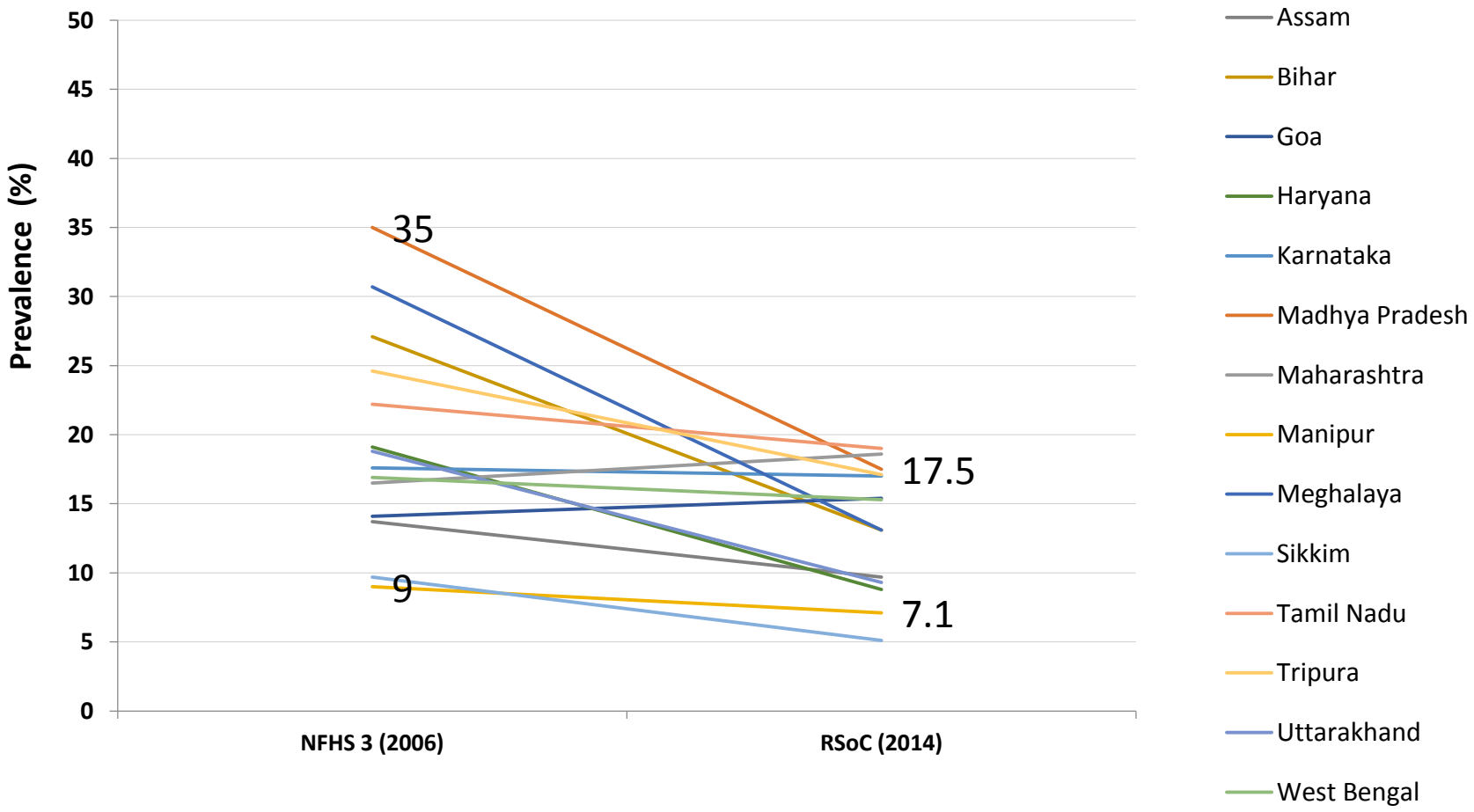
Ministry of Health and Family Welfare. (2016). National Family Health Survey -4 (NFHS-4),2015–2016. NFHS-4 Fact sheets for key indicators based on final data. http://rchiips.org/nfhs/factsheet_nfhs-4.shtml. Accessed on September 8, 2016.

WASTING: declines in most states



Sources:

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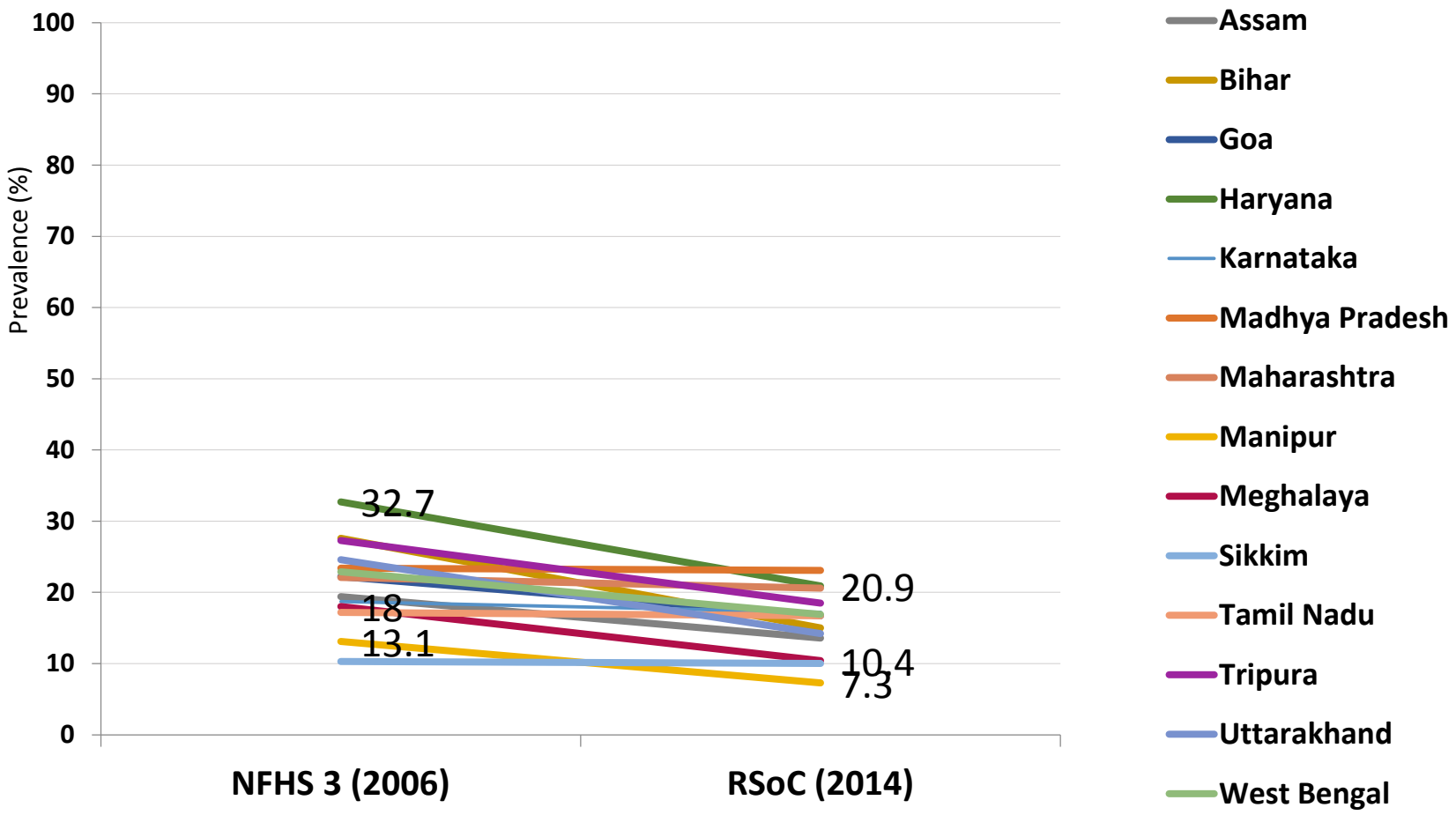
LOW BIRTH WEIGHT: Declined in states from NFHS3 to RSoC but biggest challenge is the lack of data for most states



Sources:

Ministry of Women and Child Development. (2016). Rapid survey on children (RSOC) 2013-14. National report. http://wcd.nic.in/sites/default/files/RSOC%20National%20Report%202013-14%20Final.pdf. Accessed on September 8, 2016. http://rchiips.org/nfhs/factsheet_nfhs-4.shtml

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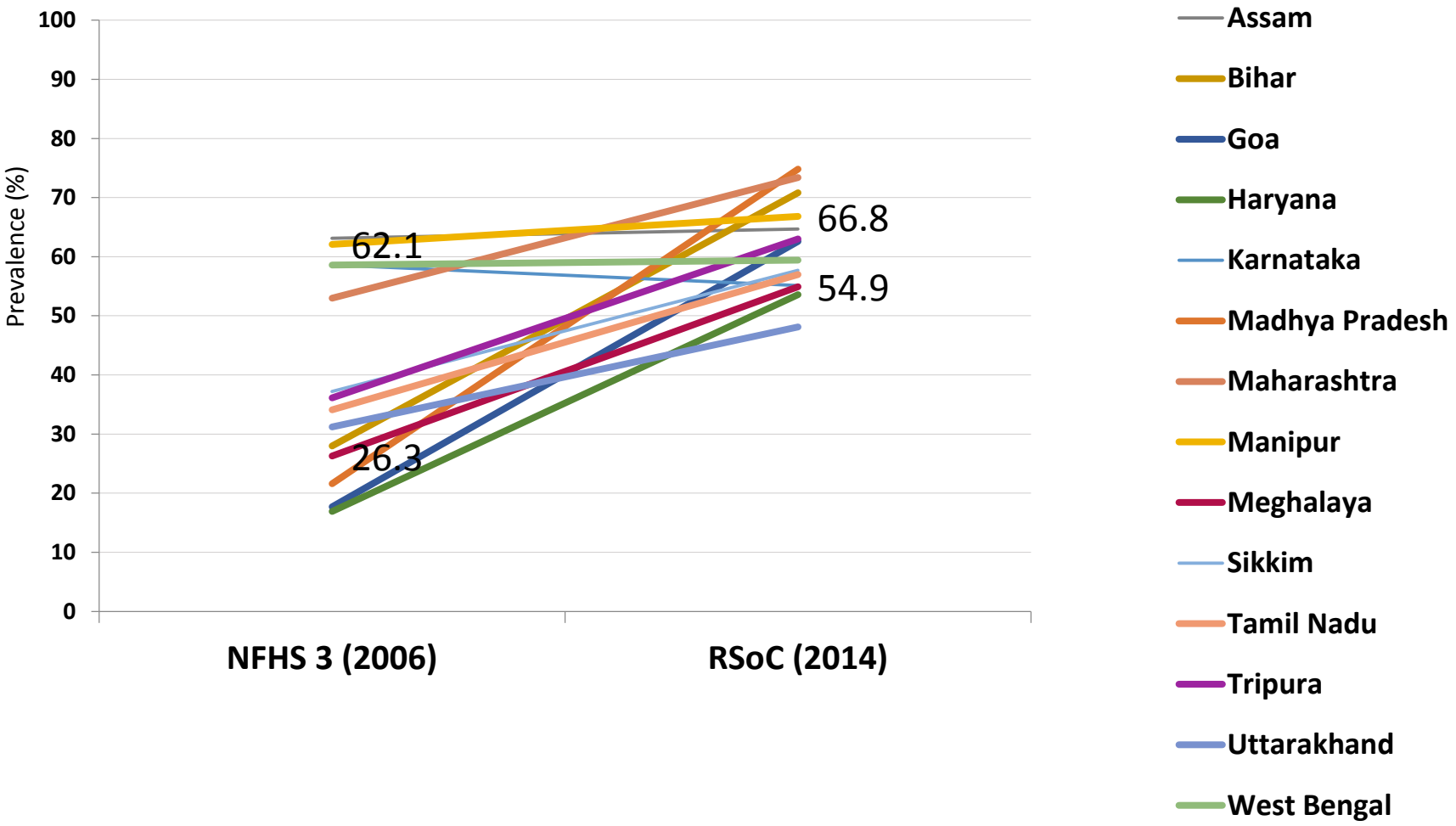
EXCLUSIVE BREASTFEEDING: Increased in almost all the states from NFHS3 to RSOC



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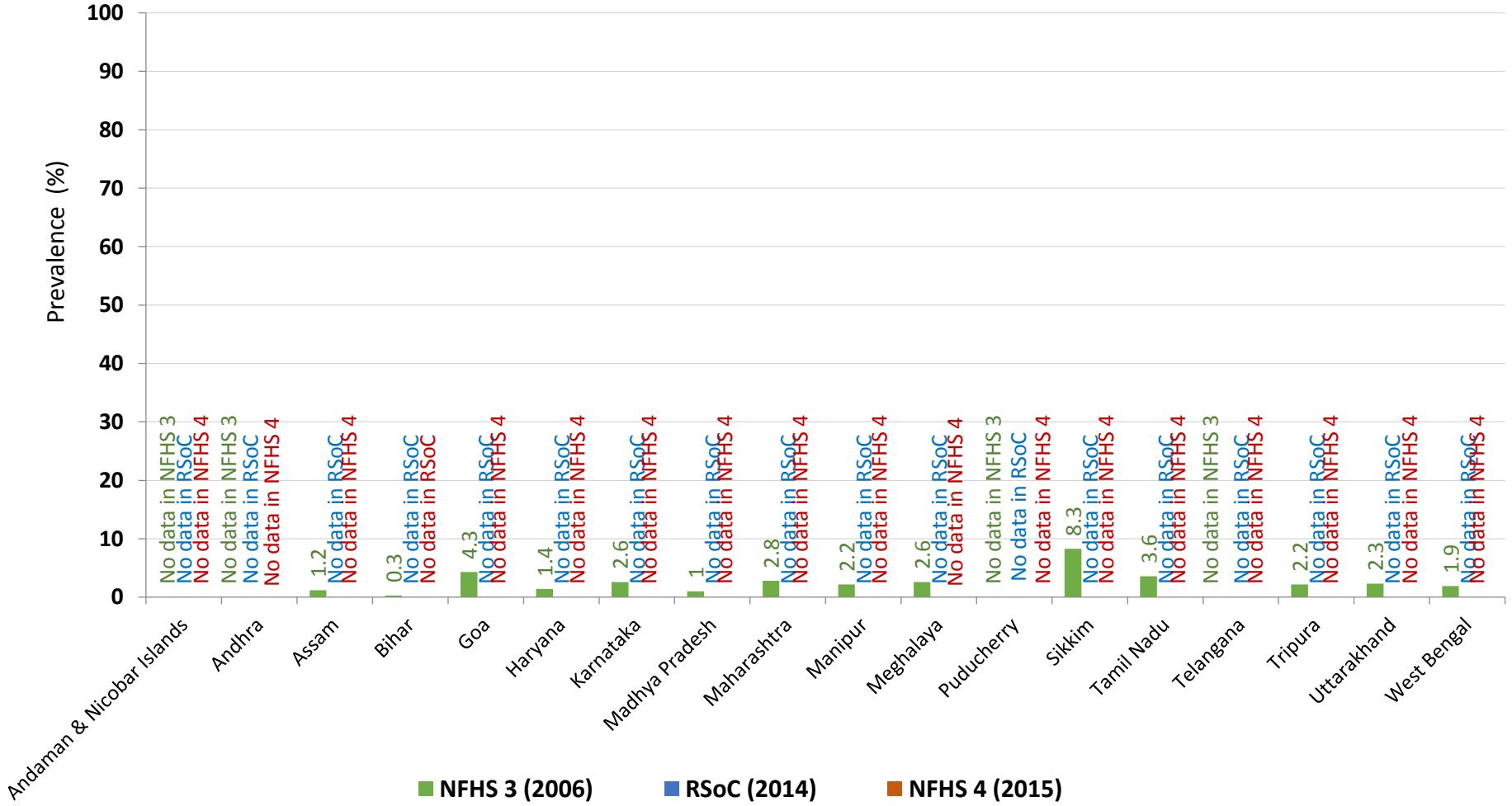
Ministry of Health and Family Welfare. (2016). National Family Health Survey -4 (NFHS-4),2015–2016. NFHS-4 Fact sheets for key indicators based on final data. http://rchiips.org/nfhs/factsheet_nfhs-4.shtml. Accessed on September 8, 2016.

CHILDHOOD OVERWEIGHT: Data available only in NFHS3



Sources:

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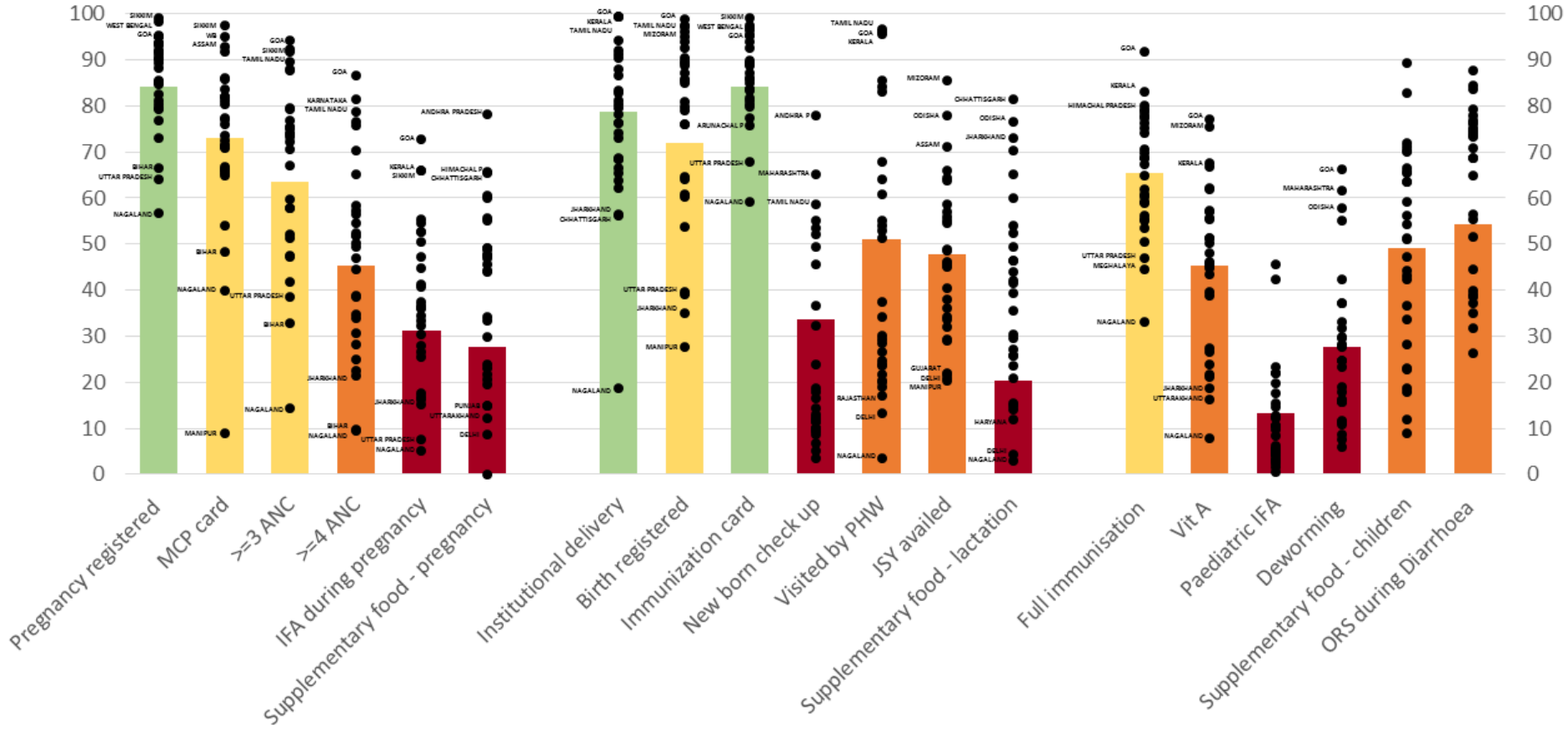
The RSOC survey also reveals inter-state variation in intervention coverage (and other determinants)



Prepared by POSHAN, IFPRI-New Delhi, February 2016, based on data from the RSOC, 2014

Summary of national and state trends & levels

- National-level
  - RSOC is only national survey to benchmark national trend until NFHS-4 is completed
  - Current trend analysis estimates suggest India is unlikely to achieve stunting and anemia targets that we are signatory to.
  - Limited information to assess the current status of overweight (until unit-level data for RSOC are made available)
- State
  - Variability in progress on WHA targets across states
  - Important to set state-specific targets for WHA/indicators as states develop nutrition plans in a more decentralized policy context in India

Looking ahead

- Data issues are important to resolve to keep a close eye on progress
  - Comparability of survey design for health and nutrition has been a recurring issues across multiple surveys in India; this needs urgent resolution
  - Ensure a minimum set of core indicators on outcomes, intervention coverage and social determinants of nutrition and health
- Opening data up for public access is essential so the research community can support analytics.