POSHAN
Led by IFPRI

Estimating the cost of delivering direct nutrition interventions at scale: National- and subnational-level insights from India

Report

No. 9 | December 2015

Led by IFPRI

Partnership members:

Institute of Development Studies (IDS)
Public Health Foundation of India (PHFI)
One World South Asia
Vikas Samvad
Coalition for Sustainable Nutrition Security in India
Save the Children, India
Public Health Resource Network (PHRN)
Vatsalya
Center for Equity Studies

ACKNOWLEDGMENTS

The authors gratefully acknowledge UNICEF-India for contributions on unit costs for specific interventions. We are grateful for inputs from a stakeholder group and partners from Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India (POSHAN) who reviewed initial results. Helpful feedback received from attendees of the Stop Stunting Conference held in November, 2014, was also incorporated into this version of the manuscript.

Financial support for this paper was provided by the Bill & Melinda Gates Foundation through POSHAN, led by International Food Policy Research Institute. The funder played no role in decisions about the scope of the analysis or the contents of the report.

SUGGESTED CITATION

Menon, P., C. M. McDonald, and S. Chakrabarti. 2015. *Estimating the cost of delivering direct nutrition interventions at scale: National and subnational-level insights from India*. POSHAN Report No 9. International Food Policy Research Institute, New Delhi.

ABOUT POSHAN

POSHAN (Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India) is a four-year initiative that aims to build evidence on effective actions for nutrition and support the use of evidence in decision making. It is supported by the Bill & Melinda Gates Foundation and led by IFPRI in India.

TABLE OF CONTENTS

Tables

Figures

Acronyms and Abbreviations

AGR	Annual growth rate
BPL	below poverty line
DLB	derived number of live births
GOI	Government of India
HAZ	height-for-age Z-score
ICDS	Integrated Child Development Services Program
IFA	Iron-folic acid
IGMSY	*Indira Gandhi Matritva Sahyog Yojana*
INR	Indian National rupee
JSY	*Janani Suraksha Yojana*
MI	Micronutrient Initiative
MOH	Ministry of Health
MWCD	Ministry of Women and Child Development
NFHS-3	National Family Health Survey-III
NFSA	National Food Security Act
NRHM	National Rural Health Mission
NSS	national sample survey
POSHAN	Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India
PLB	projected number of live births
SNP	Supplementary Nutrition Program
SRS	Sample Registration System
SUN	Scaling Up Nutrition
SUNWWIC	Scaling Up Nutrition: What Will It Cost?
UNICEF	United Nations Children's Fund
WAZ	weight-for-age Z-score
WHZ	weight-for-height Z-score
US$	United States dollar

Executive Summary

Undernutrition imposes a staggering cost worldwide in terms of lives lost, forgone productivity, healthcare spending, and reduced lifetime earnings (Horton et al. 2010). In India, nutrition policies recognize the multifaceted nature of interventions necessary to accelerate progress in nutrition. These interventions include a set of broadly agreed upon nutrition-specific interventions such as iron and folic acid supplementation during pregnancy, breastfeeding promotion, complementary feeding education, vitamin-A supplementation in early childhood, food supplementation (Avula et al. 2013) that are to be delivered at scale to improve maternal and child nutrition. Two national programs in India—Integrated Child Development Services (ICDS) and National Rural Health Mission (NRHM)—together are designed to cover all of these nutrition-specific interventions (Avula et al. 2013).

In 2005–06, nearly half of all children under 5 years of age in India were stunted (International Institute for Population Sciences 2007). A high prevalence, coupled with a large population size, make India home to the largest number of undernourished children in the world—estimated at over 58 million in 2006. What financial resources are needed to tackle undernutrition in a country as diverse as India? This report offers a preliminary insight by estimating the cost of scaling up two packages of nutrition interventions to fully cover the target populations in the 35 states and union territories of India. The first package, which we call the *SUN interventions*, is the one proposed in the World Bank Report titled "Scaling up Nutrition: What will it Cost" (SUNWWIC) (Horton et al. 2010). The second is a set of 14 nutrition interventions that is encompassed in India's policy framework and also supported by recommendations from a large network of stakeholders in India, the Coalition for Food and Nutrition Security in India (The Coalition for Sustainable Nutrition Security 2010). We call this set of interventions the *India Plus interventions or actions*. Thus, the set of *India Plus interventions* is specific to the Indian context, is based on national priorities, and is included in the policies of the Government of India.

Select set of nutrition interventions included in the study

SUN interventions: Community nutrition programs for behavior change, vitamin A and zinc supplementation and deworming for children, iron-folic acid supplements for pregnant women, multiple micronutrient powders for children, iron fortification of staple foods, salt iodization, complementary food for prevention or treatment of moderate malnutrition, and community-based Management of Acute Malnutrition (CMAM).

"India Plus" interventions: Counselling during pregnancy, counseling for optimal breastfeeding, and counseling for complementary feeding and hand washing, vitamin-A supplementation for children, ORS and therapeutic zinc supplements for treatment of diarrhea, deworming for children and adolescents, iron supplements for children, iron-folic acid supplements for pregnant and lactating women and adolescents, complementary food supplements, supplementary food rations, additional food rations for severely malnourished children, facility-based treatment of severe acute malnutrition (SAM) children, insecticide treated nets for pregnant women in malaria endemic areas, and maternity benefit for breastfeeding mothers.

Methods

This study aims to estimate the costs of implementing the specified nutrition actions in financial or budgetary terms. It adopts the SUNWWIC methodology, known as the "program experience" approach to costing, but improves upon the preliminary cost estimates that were calculated as part of SUNWWIC in several ways. First, for the set of SUN interventions, we update estimates by using the most recent demographic data, which enable more accurate estimations of target population sizes. In addition, we

aim to go beyond the estimates of the World Bank by providing state specific SUN costs. Second, for the India Plus interventions, along with the latest demographic projections we utilize local costing data based on programmatic experience that are compiled from numerous credible sources in India, including the Ministry of Women and Child Development (MWCD), the NRHM, UNICEF-India, Alive and Thrive, and the Micronutrient Initiative. We also stratify the estimates by state and provide a case study of the costs in Uttar Pradesh. Third, we attempt to make comparisons of 'at scale' costs estimates with current expenditures incurred for a sub-set of the India Plus interventions. This expenditure analysis is conducted by using government reported unit cost distributions to estimate target population specific intervention expenditure estimates.

This report does not venture to calculate the full social resource requirements that also incorporate the opportunity costs of time committed by beneficiaries accessing the services. While this latter approach is more comprehensive, it involves the collection of primary data, which is beyond the scope of the current study. Furthermore, this report also does not focus on cost-effectiveness analyses or cost-benefit analyses. Rather, it focuses on providing the best possible estimates of the cost of implementing each intervention at full coverage, but does not predict the corresponding health and nutrition outcomes that are expected to result from the scaling-up of services.

The cost estimates in this study are restricted to direct, nutrition-specific interventions, primarily delivered through the health sector and the Ministry of Women and Child Development and do not include many nutrition-sensitive activities (e.g., nutrition-sensitive social protection programs, programs to improve agricultural productivity in a nutrition-sensitive manner, or to improve sanitation). There is agreement that such interventions can help to improve nutrition outcomes in the long run, but the evidence base is weaker in comparison to nutrition-specific interventions, delivery platforms are less clear, and costing data are sparse. In addition, in India, government program costs are usually reported under broad heads and not as individual interventions that compare well with the interventions presented here. This makes it extremely difficult to arrive at accurate expenditure estimates for government programs. Thus the expenditure analysis is only intended to be illustrative but not definitive.

Results

The focal takeaways of this study are threefold.

First, our estimates show that at 2014 target population levels, it would cost about US$ 4.2 billion per year for the SUN interventions and US$5.9 billion per year for the India Plus interventions, to be delivered at scale across all states in India. Within the set of SUN interventions, food supplementation (39 percent), health interventions (26 percent) and counseling for behavioral change (21 percent) make up the bulk of costs; whereas within the set of *India Plus* interventions, maternity benefits for pregnant and lactating woman (49 percent) and supplementary food rations for women and children (39 percent) make up the bulk of the fiscal outlay.

Second, these costs are not spread equally across the geography of India. High fertility rates in states like Uttar Pradesh, Bihar, West Bengal, Maharashtra, Madhya Pradesh, and Rajasthan imply that a large chunk of the required scaling-up expenditure will be concentrated in these regions. Maharashtra has made impressive strides in reducing the rates of undernutrition recently. Yet, available data suggest that in order to meet its commitment to SUN, it may need to step up expenditure on micronutrient interventions as well as on the treatment of severe acute malnutrition (SAM) children. Further, Uttar Pradesh was identified as the most critical state where the status of service delivery and access to interventions is currently very low. Given very high population and high burden of malnutrition, all states in the Indo-Gangetic plain region need to be a focus for fiscal action.

Third, assessing expenditures against estimated costs, we find that current coverage levels are far behind levels that would be needed if the program were to adhere to full universalization. Second, even for reported beneficiaries, the reported expenditures fall short by more than half a billion US dollars because of lower reported spends. Trends in program expenditure show that fiscal outlays for ICDS and NRHM have been increasing till 2014 due to an increasing financial commitment from the center. In 2015, new fiscal devolution efforts have led to reduced financial commitments from the center and the implications of the fiscal devolution on program financing and coverage are currently unknown.

Annual costs of delivering nutrition actions at scale

SUN Interventions	Cost (US$ million)	*India Plus* interventions	Cost (US$ million)
Counseling			
Community nutrition programs for behavior change communication	891.42	Counseling during pregnancy	49.61
		Counseling for breastfeeding	17.87
		Counseling for complementary feeding and hand-washing	219.56
Supplementation			
Complementary food for prevention or treatment of moderate malnutrition	1649.40	Complementary food supplements for children 6-36 months of age	1,526.01
		Supplementary food rations for pregnant and lactating women	658.35
		Additional food rations for severely malnourished children	111.04
Micronutrient and deworming			
Iron-folic acid (IFA) supplements	56.37	Iron-folic acid supplements for pregnant and breastfeeding women	19.83
		IFA supplements and deworming for adolescents	40.19
Multiple micronutrient powders	4.84	Iron supplements for children 6-36 months of age	40.02
Vitamin A supplementation	129.79	Vitamin A supplementation	7.57
Zinc supplementation	5.54	ORS and therapeutic zinc supplements for treatment of diarrhea	70.99
Deworming	59.43	Deworming	22.41
Health			
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	1107.51	Facility based treatment of severe acute malnutrition	222.98
		Insecticide treated nets for pregnant women in malaria-endemic areas	24.76
Miscellaneous			
Iron fortification of staple foods	255.07	Maternity benefit for breastfeeding	2,899.73
Salt iodization	63.77		
TOTAL	**4,223.14**	**TOTAL**	**5,930.91**

Conclusions

Substantial financial investments are necessary to ensure at-scale delivery of a full package of essential nutrition interventions across the continuum of care to address undernutrition in India. Our study is one of the few to attempt to quantify the financial investments needed. The study is not without limitations, but in the face of limited evidence and research on what it will cost India to deliver nutrition interventions though existing policy instruments, this study provides information that can be incorporated into decision-making processes at the national and state-level.

1. Introduction

India is currently not on track to meet Millennium Development Goals 1 and 4 and carries an exceptionally high burden of global undernutrition. In 2005-06, nearly half of all children under 5 years of age in India were stunted (International Institute for Population Sciences 2007). A high prevalence, coupled with a large population size, make India home to the largest number of undernourished children in the world—estimated at over 58 million in 2006. As part of several strategies to address nutrition and its determinants in India, there is also an urgent need to improve and expand nutrition-specific actions across the country. In India, the gaps to delivering nutrition-specific interventions lie primarily in areas of implementation and monitoring (Avula et al. 2013; Kosec et al. 2015). A key challenge for implementation is adequate financing and, therefore, one of the first questions that that must be answered is "How much will it cost?"

In public health nutrition, cost analyses are typically undertaken to offer estimates of the financial resources required to provide a service or intervention to a specific population. Costing studies help to identify the levels, types, and composition of costs, as well as the overhead and infrastructure that are required to expand the coverage of an intervention. They can also isolate regions in which interventions are challenging to implement and in which additional resources may be required to effectively expand coverage to reach the target population. This information is critically important to program planning and implementation. The inclusion of cost-benefit analysis can also help policymakers prioritize interventions that will have the greatest impact in situations where resources are limited (Stenberg et al. 2015). In addition, costing analyses aid in standardizing program domains, accountability, and incentives (Fiedler and Macdonald 2009).

The vast majority of the costing literature in the field of nutrition has focused on micronutrient supplementation and fortification programs (Fiedler, Sanghvi, and Saunders 2007). These studies have been extremely useful not only in identifying the unit costs of supplementation and fortification, but also in estimating the social benefits that are gained from investing in these programs. In fact, the 2008 Copenhagen Consensus identified vitamin A and zinc supplements for children as the most cost-effective development investment (Horton et al. 2009).

In 2010, the World Bank spearheaded a study, Scaling Up Nutrition: What Will It Cost? (SUNWWIC) (Horton et al. 2010), to estimate the total cost of scaling up a package of 10 direct nutrition interventions from current coverage levels to full coverage in 36 countries that represent 90 percent of the global stunting burden and 32 additional smaller countries that also have high rates of child undernutrition. Following this, the second paper of the 2013 *Lancet* Series on Maternal and Child Nutrition provided further analyses on the cost of implementing 10 direct nutrition interventions at-scale in 34 countries that carry the highest global burden of undernutrition (Bhutta et al. 2013a). Other authors have recently elaborately furthered the costs required for a full investment in breastfeeding promotion on a global scale (Holla et al. 2013). These studies all succeed in approximating the required financing to scale up important nutrition activities at the global level. They also underscore the importance of investing in nutrition, and raise awareness of the need for additional resources. However, these global cost estimates do not typically capture local contexts, nuances, and priorities of the individual countries. There is, therefore, a clear need for more tailored cost estimates that account for important factors such as local unit costs, synergies between interventions, and optimal delivery platforms at the national and subnational level. This need is particularly pronounced in India, given its persistently high burden of undernutrition and recent findings on suboptimal coverage levels of most nutrition activities (Avula et al. 2013).

Within this context of costing and cost-effectiveness in the area of nutrition, the objectives of this study are to use the SUNWWIC methodology and use local costing data and information on delivery platforms

and target populations to calculate and compare the cost of delivering two sets of interventions at scale. The first is the set of 10 SUN interventions using the most recent population data and the second is a set of 14 nutrition interventions that are encompassed in India's policy framework and also supported by recommendations from a large network of stakeholders in India, the Coalition for Food and Nutrition Security in India (The Coalition for Sustainable Nutrition Security 2010). We call this set of interventions the *India Plus* actions. Table 1.1 provides a broad comparison of the two sets of interventions analyzed in this report. The report also presents basic findings on the extent and nature of coordination among frontline workers in delivering the ENIs.

TABLE 1.1 A COMPARISON OF THE SUN AND *INDIA PLUS* INTERVENTIONS

SUN interventions	*India Plus* interventions
Behavior change interventions	
Community nutrition programs for behavior change communication for caregivers of children 0–59 months of age	Counseling for mothers during pregnancy Counseling for optimal breastfeeding to caregivers of children 0–6 months Counseling for complementary feeding and hand washing to caregivers of children 0–6 months
Micronutrient and deworming interventions	
Vitamin A supplementation for children 6–59 months	Vitamin A supplementation for children 6–59 months
Zinc supplementation for children 6–59 months	ORS and therapeutic zinc supplements for treatment of diarrhea for children 2–59 months
Deworming for children 12–59 months	Deworming for children 12–59 months Deworming for adolescents 11–18 years
Iron-folic acid supplements for pregnant women	Iron supplements for children 6–59 months Iron-folic acid supplements for adolescents 11–18 years Iron-folic acid supplements for pregnant and lactating women
Multiple micronutrient powders for children 6–23 months not receiving fortified food	No comparable intervention
Iron fortification of staple foods for general population	
Salt iodization for general population	
Complementary and therapeutic feeding interventions	
Complementary food for prevention or treatment of moderate malnutrition for children 6–23 months	Complementary food supplements Supplementary food rations Additional food rations for severely malnourished children
Severe Acute Malnutrition (SAM) treatment	
Community-based Management of Acute Malnutrition (CMAM) for children 6–59 months	Facility-based treatment for children 6–59 months
Others	
No comparable intervention	Insecticide treated nets for pregnant women in malaria endemic areas Maternity benefit for breastfeeding mothers for 6 months

Source: Compiled by authors from Horton et al (2010) and Avula et al (2013)

2. Methods

The "program experience" approach is used to calculate the costs of delivering both sets of activities at full coverage (Horton et al. 2010). This method utilizes unit cost data for each intervention from the actual program that are in operation and considers the context and channels through which they are delivered.

To calculate the cost of providing interventions at full coverage, we performed the following steps: (1) described each intervention to be costed; (2) defined the target population of each intervention; (3) estimated the size of the target population in 2014 for each intervention; (4) specified the platform or channel(s) through which each intervention or activity will be delivered; (5) obtained local unit cost data for *India Plus* interventions from relevant sources within India or from programmatic settings in South Asia that could be applicable; (6) for each intervention, multiplied the size of the target population by the unit cost to arrive at a total cost of implementing each intervention at full coverage; and (7) perform necessary adjustments for inflation. We define "full coverage" as 100 percent of the target population, except in the case of treatment of severe acute malnutrition, which we set to 80 percent. This is in keeping with SUNWWIC methods and is based on the reality that it is exceptionally challenging to surpass 80 percent of coverage at-scale. We first conducted all calculations at the national level, and then estimated costs at the state level.

The intervention descriptions, target population, and delivery channel are specified in Table 1.1. Below we describe the data sources for the size of the target populations and the unit costs of interventions.

DATA INPUTS FOR COST ESTIMATIONS

Below we provide a detailed description of the data sources and methods used to obtain national and state specific target populations and unit costs.

1. Target populations: We used India's 2011 Census and accompanying Sample Registration System (SRS) as the main source of data for estimating the size of each target population in 2014, as it is the most credible source of demographic information in the country. More specifically, we used data on the aggregated population, age-specific strata for males and females, the crude birthrate, and the derived average population growth rate that is reported in the SRS bulletins and vital statistics sections by the Ministry of Home Affairs. Our secondary data source was the NFHS-3, which we used to derive estimates of the prevalence of stunting, wasting, underweight, severe wasting, and severe underweight among children under 5 years of age. Finally, we used data from the 68th round of the National Sample Survey (NSS) on employment and unemployment to estimate the percentage of women aged 18–50 years who work in the government sector. The sources of data for the target population estimates for the SUNWWIC and *India Plus* were the same, but since target populations vary between the two sets of interventions, they were estimated appropriate to the intervention. To estimate the size of the various target populations, we performed the following calculations:

    - To estimate the number of derived live births (DLB), we multiplied the crude birthrate (CBR) by the total population and then divided this whole number by 1,000.

    - To derive the annual growth rate (AGR), we divided the decadal growth rate by 1,000, and expressed this number as a percentage.

- The projected number of live births (PLB) was calculated using the following equation: PLB = DLB*(1+AGR). For states without a state-specific estimate of the prevalence of severe underweight among children under 5 in the NFHS-3, we used the national average.

- The number of children aged 0–6 months was assumed to be half the number of children 0–12 months of age (as reported in the Census); this number was then projected to 2014 using the standard formula mentioned above.

- The number of children aged 6–12 months was assumed to be half the number of children 0–12 months of age (as reported in the Census); this number was then projected to 2014 using the standard formula.

- The number of children aged 12–36 months was calculated as the sum of the number of children aged 1–2 years and 2–3 years (as reported in the Census), and was then projected to 2014.

- The number of children 6–36 months of age was estimated as the derived number of children 6–12 months of age plus the number of children of children 1–3 years of age (as reported in the Census), projected to 2014.

- The number of children 6–59 months of age was estimated as the derived number of children 6–12 months of age plus the number of children 1–5 years of age (as reported in the Census), projected to 2014.

- The number of children 6–59 months of age with a WHZ <-3 was calculated as the state-specific proportion of children under 5 years of age with a WHZ <-3 multiplied by the number of children 6–59 months of age, projected to 2014. We then multiplied this number by 2 to estimate the incidence of severe acute malnutrition (i.e., the number of actual cases per year). For the costing of the *India Plus* actions, we assumed that 15 percent of these children would actually receive inpatient treatment for severe acute malnutrition. For the costing of the standard *SUN* interventions, we assumed that if all interventions are first scaled up, the prevalence of SAM will decrease by 50 percent, and 80 percent of the remaining children should receive via a community-based management of acute malnutrition (CMAM) approach.

- The number of severely underweight children 6–36 months of age was calculated as the state-specific weighted proportion of children 6–36 months of age with a WAZ <-3 multiplied by the number of children 6–36 months of age, projected to 2014. To estimate the number of children who would require additional supplementary food rations for the costing of the *India Plus* interventions, we subtracted the approximate number of children 6–36 months of age receiving inpatient treatment for severe acute malnutrition (as calculated above).

- For the basic costing of the standard *SUN* interventions, we multiplied the state-specific prevalence of underweight (WAZ <-2) among children under 5 years of age by the number of children 6-23 months of age projected to 2014, by 2 (to allow for imperfect targeting).

- The number of adolescent girls was estimated as the total number of girls between 11–18 years of age (as reported in the Census), projected to 2014.

- The number of adolescent boys was estimated as the total number of boys between 11–18 years of age (as reported in the Census), projected to 2014.

- The total number of pregnant women was assumed to be equal to the crude birthrate multiplied by the total population, projected to 2014. We recognize that this is likely to be a slight underestimate, as it does not include miscarriages or stillbirths.

- The total number of breastfeeding mothers for 6 months after delivery was assumed to be equal to half the number of children 0–1 year of age, projected to 2014.

- The number of breastfeeding mothers eligible to receive the maternity benefit for six months after delivery was calculated as the PLB minus the estimated number of women aged 18–49 years employed in the government sector, derived from employment data in the National Sample Survey 2011–12.

State-specific estimates of target populations for implementing the *India Plus* interventions are shown in Appendix Tables A1 through A6.

2. Unit costs: In performing the analyses to estimate the SUN costs, we used the same unit costs as for the 10 core SUN interventions used in SUNWWIC (Horton et al. 2010). For the *India Plus* interventions, we estimated local unit costs from a variety of sources. These are described below.

   a) Interpersonal counseling for behavior change: Given there are no detailed, high-quality costing studies on successful nutrition behavior change communication programs in India, our unit cost estimates for the counseling activities were based on a recent study that estimated the implementation costs of the Alive and Thrive (A&T) initiative in Bangladesh (Khan, Saha, and Rawat 2014). A&T aims to improve infant and young child feeding (IYCF) practices by reaching 8.5 million households with children under 2 years of age through intensive community-based interventions and national media campaigns The authors of the costing study calculated costs per visit for the face-to-face counseling sessions, which includes the costs of staff, logistics and supplies, travel, incentives, monitoring, and materials. We multiplied this cost per visit by the estimated number of visits each beneficiary would receive per year to arrive at the total annual cost per beneficiary of counseling during pregnancy, counseling for breastfeeding, and counseling for complementary feeding and hand washing.

   b) Supplementary food: We used the Ministry of Women and Child Development's 2013 revised norms for the supplementary nutrition components of the Integrated Child Development Services (ICDS) program to estimate the cost per beneficiary for supplementary food rations for children 6–36 months of age, pregnant and lactating women, and severely malnourished children (Ministry of Women and Child Development 2012). There are currently no clear estimates of the actual costs of producing, delivering, and promoting the consumption of high quality supplementary foods in the Indian context or in South Asia.

   c) Micronutrient supplementation and other commodities: Estimates of the unit costs of iron-folic acid (IFA) supplements for pregnant women, iron supplementation for children, vitamin A supplementation for children, and therapeutic zinc supplements were based on detailed unit cost estimates provided in the Micronutrient Initiative's 2007–2011 National Micronutrient Investment Plan for India (Micronutrient Initiative 2011). These estimates include the costs of physical inputs as well as the delivery costs, including training, IEC materials, and program monitoring and evaluation. The combined unit cost of weekly IFA supplements and semi-annual deworming prophylaxis for adolescents was obtained from a

2011 report by UNICEF-India titled "The Adolescent Girls Anemia Control Program: Breaking the Inter-Generational Cycle of Undernutrition in India with a focus on Adolescent Girls" (UNICEF 2011). The unit cost of providing two rounds of deworming to children 12–59 months of age was calculated from data in India's NRHM's Project Implementation Plan (PIP) (Ministry of Health and Family Welfare 2012). We also used the NRHM's PIP to obtain unit cost estimates of ORS and assumed that each child 2–59 months of age would have an average of 3 episodes of diarrhea per year. The estimated cost of an insecticide-treated bed net was provided by UNICEF (UNICEF 2013).

d) Treating severe acute malnutrition: We estimated the per beneficiary cost of facility-based treatment of severe acute malnutrition using the Ministry of Health and Family Welfare's 2011 Operational Guidelines and assumed an average stay of 12.4 days in the treatment facility (Ministry of Health and Family Welfare 2011). India does not currently have guidelines for community-based management of acute malnutrition (CMAM) and thus, unit cost estimates can only be derived for facility-based treatment.

e) Cash transfers for maternity benefits: The unit cost of the maternity benefit for breastfeeding mothers was obtained directly from India's 2013 Food Security Bill (Ministry of Law and Justice 2013).

All unit cost estimates, the source of data, and relevant assumptions for the *India Plus* are summarized in Table 2.1.

TABLE 2.1 ASSUMPTIONS, TARGET POPULATIONS, AND UNIT COSTS OF *INDIA PLUS* INTERVENTIONS

Intervention	Description	Assumptions	Target population	Unit cost (US$)	Source
Counseling actions					
Counseling during pregnancy	Promotion of optimal nutrition during pregnancy though an average of 3.5 individual/group contacts during pregnancy	Assumes an average of 4.1 face-to-face visits per pregnant woman at $0.43 per visit.	Pregnant women	$1.76 per pregnant woman per year	(Khan, Saha, and Rawat 2014)
Counseling for breastfeeding	Promotion of optimal breastfeeding practices though an average of 11.7 individual/group contacts between 0–6 months of age	Assumes an average of 15.2 face-to-face visits between 0–6 months at $0.11 per visit.	Caregivers of children 0–6 months of age	$1.67 per child 0–6 months of age per year	(Khan, Saha, and Rawat 2014)
Counseling for complementary feeding and hand washing	Promotion of optimal IYCF and hand washing practices through an average of 11.6 individual/group contacts between 6–12 months of age, and 13.5 contacts between 12–24 months of age	Assumes an average of 13.3 face-to-face visits per child between 6–12 months of age at $0.56 per visit, and an average of 12.2 face-to-face visits per child between 12–24 months of age at $0.23 per visit.	Caregivers of children 6–24 months of age	$7.47 per child 6–12 months of age per year $2.80 per child 12–24 months of age per year	(Khan, Saha, and Rawat 2014)
Supplementation					
Complementary food supplements	Daily food supplements between 6–36 months of age	Assumes provision of a daily ration at Rs.6 ($0.097) per day.	Children 6–36 months of age	$14.52 per child 6–12 months of age per year; $29.03 per child 12–26 months of age per year	(Ministry of Women and Child Development 2012)
Supplementary food rations	Daily food supplements for the second and third trimesters (i.e. approx. 6 months) of pregnancy and the first 6 months of lactation	Assumes provision of a daily ration for 6 months during pregnancy and 6 months after birth at Rs.7 ($0.11) per day	Pregnant and lactating women for six months after delivery	$16.93 per pregnant woman per year; $16.93 per mother of a child 0–6 months of age per year	(Ministry of Women and Child Development 2012)

Intervention	Description	Assumptions	Target population	Unit cost (US$)	Source
Additional food rations for severely malnourished children	Provision of an additional daily food supplement for 3 months for children who are severely malnourished	Assumes provision of a daily ration for 3 months at Rs.9 (US$0.145) per day.	Children 6–59 months of age with WAZ < -3	$13.06 per severely underweight child 6–36 months of age per year	(Ministry of Women and Child Development 2012)
Micronutrient and deworming					
Iron-folic acid supplements for pregnant and breastfeeding women	Provision IFA supplements for women	Provision of daily IFA supplements for women during the second and third trimesters of pregnancy and for six months after delivery	Pregnant and lactating women for six months after delivery	$0.72 per pregnant woman per year; $0.51 per mother of a child 0–6 months of age per year	(Micronutrient Initiative 2011)
IFA supplements and deworming for adolescents	Provision of IFA supplements through the school system	Assumes weekly provision of IFA tablets and semi-annual deworming prophylaxis	Adolescents 11–18 years of age	$0.40 per adolescent 11–18 years of age per year	(UNICEF 2011)
Iron supplements for children	Provision of daily iron supplements for children 6–59 months of age	This is the GOI's current expenditure on iron supplementation per beneficiary	Children 6–59 months of age	$0.37 per child 6–36 months of age per year	(Micronutrient Initiative 2011)
Vitamin A	Supplements for children	Assumes 2 rounds of vitamin A supplementation per child per year	Children 6–59 months of age	$0.07 per child 6–59 months of age per year	(Micronutrient Initiative 2011)
ORS and therapeutic zinc supplements for treatment of diarrhea	Daily ORS and zinc for 14 days during/following an episode of diarrhea	Assumes each child 2–59 months of age has an average of 3 episodes of diarrhea per year, 2 ORS sachets are required to treat each episode of diarrhea, zinc is provided for 14 days per episode	Children 2–59 months of age with diarrhea	$0.64 per child 2–59 months of age per year	(Micronutrient Initiative 2011)
Deworming	Deworming tablets for children	Assumes two rounds of deworming per child per year	Children 12–59 months of age	$0.23 per child 12–59 months of age per year	(Ministry of Health and Family Welfare 2012)
Health interventions					
Treatment of severe acute malnutrition	Facility-based treatment for children with severe acute malnutrition	Assumes that the incident cases of SAM per year is twice the prevalence of severe wasting; 15 percent of these children will receive inpatient treatment; average duration of treatment is 12.5 days	Children 6–59 months of age with a WHZ <-3	$107.38 per case treated per year	(Ministry of Health and Family Welfare 2011)
Insecticide treated nets	Provision of insecticide treated bed nets to pregnant women for prevention of malaria in malaria-endemic areas	Endemic areas include: Chhattisgarh, Jharkhand, Odisha, West Bengal, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura; and Andaman and Nicobar Islands	Pregnant women	$4.84 per pregnant woman per year	(UNICEF 2013)
Miscellaneous interventions					
Maternity benefit for breastfeeding mothers	Monthly cash stipend provided to breastfeeding mothers	Includes the cost of the benefit and incentives. The benefit is provided for 6 months after delivery. Excludes women working in the government sector per year	Breastfeeding mothers after the first 6 months of delivery	$103.22 per eligible woman	(Ministry of Law and Justice 2013)

Source: Compiled by authors.

METHODS FOR EXPENDITURE ANALYSIS

We attempted to undertake an expenditure analysis to compare the SUN and *India Plus* cost estimates with actual government expenditures. The estimated costs for the *SUN* and *India Plus* interventions are calculated for specific age groups and specific interventions. However, government reporting of health and ICDS expenditures includes numerous interventions bundled up across different target populations. Therefore, it is extremely challenging to compare our cost estimates with the government's reported expenditure figures. This challenge is particularly pronounced for interventions such as counselling, micronutrient supplementation, deworming, and facility based treatment of SAM, which have no comparable reported expenditure figures in government data. As an illustrative exercise in comparing cost estimates to expenditures, we restricted our comparisons to the ICDS food supplementation interventions. We used the expenditure data published by the Parliament of India (Lok Sabha)[1] and coverage data from the website of the Ministry of Women and Child Development. To compare coverage levels of target beneficiaries for the food supplementation, we compared ICDS-reported 2014 coverage of target beneficiaries with our estimates of the number of beneficiaries to be covered if the ICDS is universalized to reach 100% of the stated target population. Although the reported expenditures cover a broader target population base than in our costing exercise, it is still possible to undertake some basic comparisons.

Cautionary note: The expenditure analysis is only meant to be illustrative. The exercise is based on the assumption that the reported ICDS expenditure follows the same distribution as ICDS stated unit costs multiplied by ICDS reported target population sizes. In effect, the estimates of expenditure provided here are intended to demonstrate the difficulty in assessing expenditure across interventions in India and are not intended to be definitive.

Supplementary Nutrition Program Expenditure Estimation Methods

We followed the steps below to compare reported program expenditures for the ICDS supplementary nutrition program to our cost estimates:

1. The Government of India reports expenditure in Indian National Rupee (INR) and we use the January 2014 dollar exchange rate to convert the figures to US dollars.

2. The number of beneficiaries covered under four categories – children aged 6 to 36 months, children aged 3-6 years, pregnant and lactating women, and severely malnourished children - are reported annually by the ICDS. We use the figures reported for 2014. These data were sourced from the Ministry of Women and Child Development. Refer to Table A25 for source links and data accessed.

3. The total number of beneficiaries covered under each target population in 2014 as reported by the ICDS are then multiplied by the intended unit costs provided by the ICDS for the same target population. Estimated costs for each target population covered were then summed up to obtain total estimated cost for the ICDS SNP, if the ICDS were to spend the intended unit cost for all reported beneficiaries on an annual basis.

4. The total actual expenditure incurred by the ICDS under SNP is also reported annually by the Ministry of Women and Child Development, but is not reported by intervention. We used the total reported expenditure on the supplementary nutrition program for 2014 and compared this with

[1] Data appendices for questions answered pertaining to queries in the parliament provide credible data sources for expenditure data. Table A25 in the appendix shows data sources for the expenditure analysis. The data tables are accessible via the Lok Sabha website http://loksabha.nic.in/.

our cost estimates. These data were sourced from the Lok Sabha. Refer to Table A25 for source links and data accessed.

5. The reported target population covered under each intervention was also compared with the estimated target population for the comparable intervention, to assess potential shortfall in beneficiary coverage.

.

3. Results: Total cost of implementing two sets of nutrition interventions at scale

In this section we present the results of the costing exercise for the SUN and *India Plus* interventions.

SUN INTERVENTIONS

As shown in Table 3.1, the total annual cost of implementing the ten core SUN interventions at full coverage, nationwide, is US$4.22 billion. Of this total, US$891.4 million (21 percent) is allocated to community nutrition programs for behavior change communication, US$574.81 million (14 percent) is dedicated to micronutrient and deworming interventions, and US$2.75 billion (65 percent) is allocated to supplementary and therapeutic feeding interventions. State-specific estimates of implementing the SUN interventions are shown in Appendix Tables A7 through A12.

TABLE 3.1 TOTAL ANNUAL COST OF IMPLEMENTING THE CORE SUN INTERVENTIONS AT FULL COVERAGE NATION-WIDE

Intervention	Assumptions	Unit cost (US$)	Cost (US$ million) per year	Share in cost (percent)
Community nutrition programs for behavior change communication	Assumes two children under 5 per household.	$15.00 per household per year (or $7.50 per child under 5 years of age)	891.42	21.11
Vitamin A supplementation	Assumes two doses per year.	$1.20 per child 6–59 months of age per year	129.79	3.07
Zinc supplementation	Allows for 2-3 rounds of zinc supplementation per child per year	$1.00 per child 6–59 months of age per year	5.54	0.13
Multiple micronutrient powders	Assumes each child will receive 60 sachets. Target population does not include children receiving complementary food for the prevention of moderate malnutrition.	$3.60 per child 6–23 months of age per year	4.84	0.11
Deworming	Assumes 2 rounds per year.	$0.50 per child 12–59 months of age per year	59.43	1.41
Iron-folic acid (IFA) supplements	Assumes that pregnant women will receive IFA supplements for the last two trimesters of pregnancy.	$2.00 per pregnancy	56.37	1.33
Iron fortification of staple foods	General population	$0.20 per person per year	255.07	6.04
Salt iodization	General population	$0.05 per person per year	63.77	1.51
Complementary food for prevention or treatment of moderate malnutrition	Assumes ~ 250 kcal/day should be provided to each targeted child on a daily basis, since the prevalence of wasting (WHZ <-2) is >10 percent.	$51.10 per child per year	1,649.4	39.06
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	Prevalence of severe wasting is doubled to estimate the incidence of SAM cases over a one-year period. Assumes that if all other interventions are delivered first, the prevalence of SAM will decrease by 50 percent. Full coverage is then defined as 80 percent of this remainder.	$200 per child treated	1,107.51	26.22

All SUN interventions	4,223.14	100.00

Source: Author's estimates using populatiuon data from Indian Census 2011 and unit cost data from SUNWWIC.

INDIA PLUS INTERVENTIONS AT FULL COVERAGE

Table 3.2 illustrates that the total annual cost of implementing the larger set of *India Plus* interventions at full coverage throughout India is US$5.93 billion. The largest proportion of the total cost (49 percent) is allocated to the maternity benefit to support breastfeeding. This is followed by supplementary food rations, which account for 39 percent of the total cost; health interventions (including inpatient treatment of severe acute malnutrition), which account for 4 percent of the total cost; counseling actions (5 percent); and micronutrient supplements and deworming (3 percent).

TABLE 3.2 TOTAL ANNUAL COST OF IMPLEMENTING THE FULL SET OF *INDIA PLUS* INTERVENTIONS AT FULL COVERAGE NATIONWIDE

Action	Cost per year (US$ million)	Share in cost (percent)
Counseling		
Counseling during pregnancy	49.61	0.84
Counseling for breastfeeding	17.87	0.30
Counseling for complementary feeding and hand-washing	219.56	3.70
Supplementation		
Complementary food supplements for children 6–36 months of age	1,526.01	25.73
Supplementary food rations for pregnant and lactating women	658.35	11.10
Additional food rations for severely malnourished children	111.04	1.87
Micronutrient and deworming		
Iron-folic acid supplements for pregnant and breastfeeding women	19.83	0.33
IFA supplements and deworming for adolescents	40.19	0.68
Iron supplements for children 6–36 months of age	40.02	0.67
Vitamin A supplementation	7.57	0.13
ORS and therapeutic zinc supplements for treatment of diarrhea	70.99	1.20
Deworming	22.41	0.38
Health		
Treatment of severe acute malnutrition	222.98	3.76
Insecticide treated nets for pregnant women in malaria-endemic areas	24.76	0.42
Miscellaneous		
Maternity benefit for breastfeeding mothers	2,899.73	48.89
Total	5,930.91	100.00

Source: Author's estimates.

Finally, our estimates for *India Plus* costs lead to an average estimated cost per child (0–24 months) per year of US$54.2 for food supplements, US$68.4 for maternity benefits, US$6.8 for a full package of counseling, US$4.7 for micronutrient supplementation and deworming, and US$5.9 for health interventions (excluding immunizations). This leads to a cost of US$140 per child per year.

COMPARISON OF THE TWO SETS OF INTERVENTIONS

Figures 3.1 and 3.2 show a comparison of the cost components of SUN and *India Plus* interventions in India. In Figure 3.1, "counseling" includes community nutrition programs for behavior change communication; "supplementation" includes complementary food for prevention or treatment of moderate malnutrition; "micronutrient and deworming" includes vitamin A supplementation, zinc supplementation, multiple micronutrient powders, deworming, iron-folic acid (IFA) supplements; "health" includes treatment of severe acute malnutrition (SAM) using community-based management of

acute malnutrition (CMAM); and "fortification" includes iron fortification of staple foods and salt iodization.

In Figure 3.2, "counseling" includes counseling during pregnancy, counseling for breastfeeding, counseling for complementary feeding and hand-washing; "supplementation" includes supplementary food rations for pregnant and lactating women, complementary food supplements for children 6–36 months of age, additional food supplements for severely malnourished children; "micronutrient and deworming" includes IFA supplements for pregnant and breastfeeding women, IFA supplements and deworming for adolescents, iron supplements for children 6–36 months of age, vitamin A supplementation, oral rehydration salts and therapeutic zinc supplements for treatment of diarrhea, and deworming; "health" includes facility-based treatment for severe acute malnutrition and provision of insecticide treated nets for pregnant women in malaria-endemic areas.

FIGURE 3.1 THE COST COMPONENTS OF DELIVERING SUN INTERVENTIONS AT SCALE IN INDIA

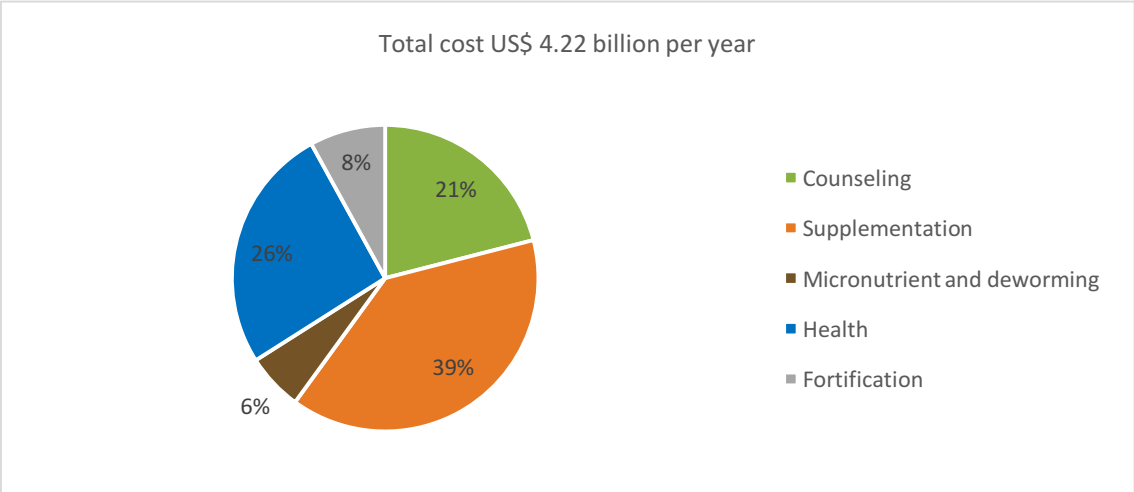
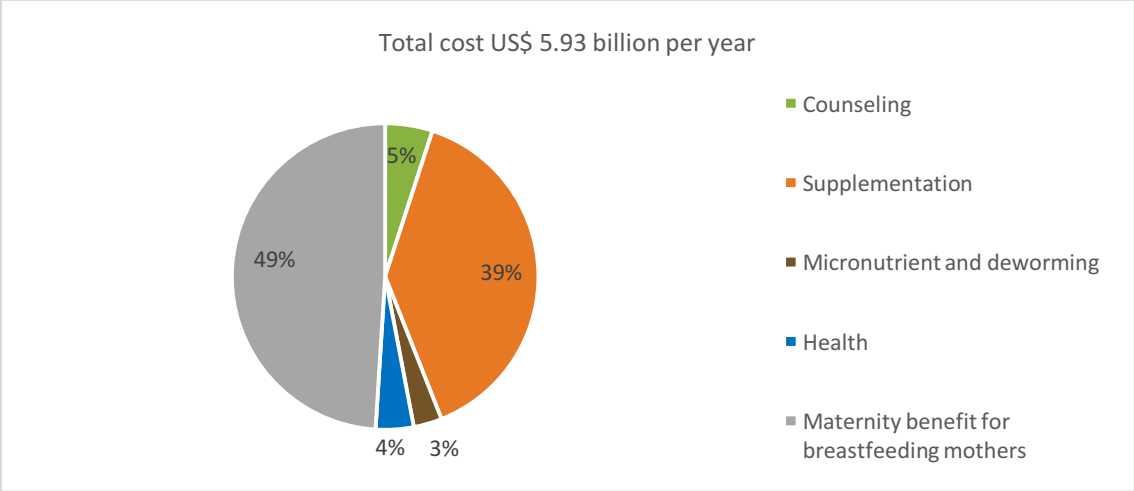


FIGURE 3.2 THE COST COMPONENTS OF DELIVERING *INDIA PLUS* INTERVENTIONS AT SCALE IN INDIA



Source: Author's estimates.

4. Results: State-specific cost estimates

In this section, we present the main results of the state-specific costing exercise. There is considerable variability in the costs for delivering the both the SUN and *India Plus* interventions at scale in the different states across India (Tables 4.1 and 4.2), with variability in cost estimates primarily driven by differences in target populations. The state-wise costs show that the region of India's Gangetic plains (including states like Uttar Pradesh, Bihar, West Bengal and Jharkhand) requires the greatest financial commitment. Other regions such as central states (Madhya Pradesh, Maharashtra, Chhattisgarh, and Odisha) and individual states such as Rajasthan, Gujarat, Andhra Pradesh, Tamil Nadu and Karnataka each require substantial investments. In particular, the cost of implementing all *India Plus* interventions in the state of Uttar Pradesh will amount to just under US$1.2 billion, which is 20 percent of the total *India Plus* cost estimate. Costs for Uttar Pradesh are driven up primarily by the existing population and high fertility rates as well as by the state's poor performance on nutrition, which amplifies the costs for treatment of severe acute malnutrition. Similarly, in other states, such as Bihar, Madhya Pradesh, Rajasthan, and Maharashtra, where wasting rates and population sizes are high, delivering interventions at scale will cost in excess of US$400 million per year. The state-specific target populations, and costs of implementing the entire set of SUN and *India Plus* interventions are shown in Appendix Tables A1 to A18.

TABLE 4.1 STATE-WISE COSTS OF SUN INTERVENTIONS AT SCALE

Million	Total population	Counseling	Supplementation	Micronutrient and deworming	Health	Iodization and fortification
	(person)	(US$ million)	(US$ million)	(US$ million)	(US$ million)	(US$ million)
Indo-gangetic plains (subtotal)	**427.7**	**351.9**	**687.4**	**101.3**	**447.0**	**113.5**
Uttar Pradesh	199.6	162.2	332.1	47.3	161.3	53.0
Bihar	103.8	103.1	204.3	29.2	168.2	28.0
West Bengal	91.3	57.3	97.0	16.5	50.2	23.8
Jharkhand	33.0	29.2	54.1	8.4	67.3	8.8
Central states (subtotal)	**252.5**	**182.1**	**350.8**	**52.5**	**269.6**	**66.5**
Madhya Pradesh	72.6	59.5	116.7	17.5	144.9	19.3
Maharashtra	112.4	73.6	139.7	20.8	73.9	29.5
Chhattisgarh	25.5	20.4	41.5	5.8	22.0	6.8
Odisha	41.9	28.6	53.0	8.4	28.8	10.9
Western (subtotal)	**182.1**	**137.2**	**246.6**	**40.5**	**156.2**	**48.2**
Rajasthan	68.6	58.4	97.5	17.7	82.4	18.3
Gujarat	60.4	43.4	89.5	12.2	48.9	16.0
Haryana	25.4	18.8	34.8	5.5	18.1	6.7
Punjab	27.7	16.7	24.8	5.1	6.7	7.2
Southern (subtotal)	**252.8**	**149.3**	**225.7**	**46.9**	**165.0**	**65.6**
Andhra Pradesh	84.7	48.7	84.3	14.6	32.9	21.9
Karnataka	61.1	39.7	69.5	11.8	45.3	16.0
Tamil Nadu	72.1	41.5	52.3	13.8	71.2	18.9
Kerala	33.4	18.7	18.8	6.4	14.7	8.5
Goa	1.5	0.8	0.8	0.3	0.8	0.4
Northern (subtotal)	**29.5**	**23.0**	**36.9**	**6.7**	**22.4**	**7.8**
Jammu and Kashmir	12.5	11.4	15.8	3.4	9.6	3.4
Uttaranchal	10.1	7.3	12.7	2.1	7.5	2.7
Himachal Pradesh	6.9	4.2	8.4	1.2	5.3	1.8
North eastern (subtotal)	**45.6**	**37.0**	**65.6**	**10.7**	**41.1**	**12.0**
Meghalaya	3.0	3.3	7.8	0.9	12.6	0.8
Tripura	3.7	2.5	3.5	0.8	4.2	1.0
Manipur	2.7	1.8	2.9	0.6	0.8	0.7
Nagaland	2.0	1.5	2.3	0.4	1.5	0.5
Arunachal Pradesh	1.4	1.2	2.0	0.3	1.4	0.4
Assam	31.2	25.3	45.0	7.3	19.8	8.2
Sikkim	0.6	0.3	0.5	0.1	0.2	0.2
Mizoram	1.1	1.0	1.8	0.3	0.7	0.3
Union Territories (subtotal)	**20.1**	**13.2**	**22.5**	**3.9**	**17.6**	**5.4**
Delhi	16.8	11.0	18.3	3.3	14.9	4.5
Puducherry	1.2	0.8	1.6	0.2	0.9	0.3
Chandigarh	1.1	0.6	1.2	0.2	0.8	0.3

Dadra and Nagar Haveli	0.3	0.3	0.6	0.1	0.4	0.1
Andaman and Nicobar Islands	0.4	0.2	0.4	0.1	0.3	0.1
Daman and Diu	0.2	0.2	0.3	0.0	0.2	0.1
Lakshadweep	0.1	0.0	0.1	0.0	0.0	0.0

Source: Author's estimates.

TABLE 4.2 STATE-WISE COSTS OF *INDIA PLUS* ACTIONS AT SCALE

Million	Total population	Counseling	Supplementation	Micronutrient and deworming	Health	Maternity benefits for breastfeeding
	(person)	(US$ million)	(US$ million)	(US$ million)	(US$ million)	(US$ million)
Indo-gangetic plains (subtotal)	**427.7**	**108.3**	**903.9**	**90.6**	**102.1**	**1,197.1**
Uttar Pradesh	199.6	51.4	420.8	42.7	32.5	616.9
Bihar	103.8	30.1	266.5	25.5	33.9	324.0
West Bengal	91.3	17.7	140.7	15.0	17.8	164.2
Jharkhand	33.0	9.0	75.8	7.4	17.9	91.9
Central states (subtotal)	**252.5**	**60.8**	**475.2**	**46.7**	**62.0**	**587.1**
Madhya Pradesh	72.6	20.1	162.4	15.3	29.2	216.8
Maharashtra	112.4	24.3	186.2	18.7	14.9	207.2
Chhattisgarh	25.5	6.9	52.8	5.2	7.8	70.9
Odisha	41.9	9.5	73.8	7.4	10.1	92.2
Western (subtotal)	**182.1**	**45.3**	**356.9**	**35.1**	**31.4**	**454.8**
Rajasthan	68.6	19.2	152.6	14.9	16.6	200.6
Gujarat	60.4	14.0	113.8	11.1	9.8	143.3
Haryana	25.4	6.5	49.0	4.8	3.6	61.6
Punjab	27.7	5.6	41.6	4.3	1.4	49.3
Southern (subtotal)	**252.8**	**50.0**	**375.7**	**38.8**	**33.2**	**464.5**
Andhra Pradesh	84.7	16.6	123.1	12.9	6.6	160.5
Karnataka	61.1	13.1	101.7	10.2	9.1	126.8
Tamil Nadu	72.1	13.8	103.1	10.7	14.3	123.8
Kerala	33.4	6.3	45.7	4.8	3.0	51.3
Goa	1.5	0.3	2.0	0.2	0.2	2.0
Northern (subtotal)	**29.5**	**7.4**	**56.2**	**5.8**	**4.5**	**58.8**
Jammu and Kashmir	12.5	3.6	26.9	2.8	1.9	25.2
Uttaranchal	10.1	2.4	18.4	1.9	1.5	21.3
Himachal Pradesh	6.9	1.4	10.9	1.1	1.1	12.3
North eastern (subtotal)	**45.6**	**11.5**	**92.4**	**9.2**	**13.3**	**106.2**
Meghalaya	3.0	1.1	8.6	0.8	2.9	8.0
Tripura	3.7	0.8	6.1	0.6	1.1	5.9
Manipur	2.7	0.6	4.5	0.5	0.4	4.4
Nagaland	2.0	0.4	3.5	0.4	0.5	3.4
Arunachal Pradesh	1.4	0.3	2.9	0.3	0.4	3.1
Assam	31.2	7.9	63.7	6.4	7.7	78.2
Sikkim	0.6	0.1	0.8	0.1	0.1	1.1
Mizoram	1.1	0.3	2.4	0.2	0.2	2.0
Union Territories (subtotal)	**20.1**	**4.3**	**37.7**	**3.8**	**3.6**	**39.0**
Delhi	16.8	3.6	27.4	2.8	3.0	32.5
Puducherry	1.2	0.3	2.0	0.2	0.2	2.3
Chandigarh	1.1	0.2	1.6	0.2	0.2	1.8
Dadra and Nagar Haveli	0.3	0.1	0.9	0.1	0.1	1.1
Andaman and Nicobar Islands	0.4	0.1	0.6	0.1	0.1	0.6
Daman and Diu	0.2	0.1	0.4	0.0	0.0	0.5
Lakshadweep	0.1	0.0	0.1	0.0	0.0	0.1

Source: Author's estimates.

Maharashtra's commitment to scaling up nutrition

The state of Maharashtra has been highlighted as a global example in the Lancet Series for its commitment to nutrition. Based on a comparison between the National Family Health Survey (2005–06) and the Comprehensive Nutritional Survey in Maharashtra (2012), the state has reported a reduction in stunting from 30 percent to 23 percent. Maharashtra has committed to the SUN movement and is the only Indian state to have done so, according to the State of the SUN Movement Progress Report (2013). As per our estimates, full coverage toward all 10 SUN interventions will cost the government about US$337.5 million (INR crore 2,092.2) in 2014. Table 4.2 shows that out of the core 10 SUN interventions, Maharashtra is close to achieving universalization in the delivery of deworming and salt iodization. For services such as

community nutrition programs, vitamin A supplementation, and Iron folic acid supplementation, the service delivery ranges between 45–58 percent of the target population being covered currently. Further, for the two costliest interventions, SAM treatment and complementary food, there is very little information available on coverage, if any. Collecting accurate data on coverage is crucial to track how Maharashtra performs in meeting its SUN targets and how much additional expenditure is to be incurred by the state in years to come.

Table 4.3 shows that it would cost Maharashtra a total of US$451.3 million (INR crore 2,979.8) per year to deliver all of the SUN interventions. As per Appendix Table A.20, Maharashtra received a total of US$225.9 million in 2012–13 from the center for ICDS and Maharashtra added US$121 million, primarily toward SNP. The center also allotted a total of US$228.73 million in 2012–13 for NRHM and Maharashtra added US$40.63 million to that. Hence in 2012–13, Maharashtra's commitment toward its nutrition and health programs was about US$160 million, out of which 75 percent was for ICDS and 25 percent for NRHM.

TABLE 4.3 SUN INTERVENTIONS AT FULL COVERAGE IN MAHARASHTRA AND CURRENT PERFORMANCE ON INDICATORS

Coverage/prevalence indicators	Current coverage/ prevalence status (%)	SUN interventions	Estimated cost to meet full coverage in 2014 US$ millions
Children who are underweight [a]	22	Complementary food for prevention or treatment of moderate malnutrition	139.7
Children who are severely wasted [a]	4	Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	73.9
Children less than 6 months who are exclusively breastfed	57	Community nutrition programs for behavior change communication	73.6
Children 6–23 months who are fed iron-rich foods (including commercially fortified foods especially designed for infants and young children)	17	Iron fortification of staple foods	23.6
Children 9–23 months who were given a vitamin A dose in the last 6 months	48	Vitamin A supplementation	10.7
Children 6–23 months who live in households that use adequately iodized salt	78	Salt iodization	5.9
Coverage under deworming program (2012 Round 1 - deworming tablets/syrups)	89	Deworming	4.9
Mothers who consumed iron and folic acid supplements for 90days or longer during last pregnancy	58	Iron folic acid supplementation	4.0
No data available	–	Multiple Micronutrient Powders	0.8
Use of ORT for treatment of childhood diarrhea (no data for Zinc)	45	Therapeutic zinc supplementation (as part of diarrhea management with ORS)	0.4

Source: Compiled by authors from Comprehensive Nutritional Survey in Maharashtra (2012)

[a] Prevalnce figures presented because no coverage data was available for the intervention.

State Focus: Uttar Pradesh

Uttar Pradesh is situated in the northern plains of India with an estimated population of 211.85 million in 2014.[2] We estimate (Table A.1) that in 2014, Uttar Pradesh will be home to 18.2 percent of India's under 5 children and 19.4 percent of all adolescent girls in India. In 2012, it had an existing network of over 300,000 Front Line workers. According to fact sheets from the Rapid Survey of Children released by the Ministry of Women and Child Development, the prevalence rates of stunting and underweight were 50.4 percent and 34.3 percent, in 2013/14, respectively. This figures were much higher than the national prevalence rates for the same indicators during that period. According the Census - clinical, anthropometry and biometry data (CAB -2014), anemia was close to 90 percent across all age groups surveyed.

Table A.19 shows that about one third of households in Uttar Pradesh still practice open defecation. Further, the coverage of many services provided by the ICDS and NRHM is also well below India's national average. For instance, one in three pregnant women receives 3 or more ANC visits in Uttar Pradesh compared to two in three in India. Less than 5 percent of the women consumed IFA tablets for more than 90 days in Uttar Pradesh compared to 23 percent for India. Similarly, the receipt of services such as immunization, take home rations, deworming, and ORS were well below the national average.

As per Table 4.2, under full coverage, the cost of implementing all *India Plus* interventions in Uttar Pradesh will amount to just under US$1.2 billion (~20 percent of all India full coverage investment). Cost heads are driven primarily by the existing population and high fertility rates (approximated by the reported 2 percent per annum population growth in the 2011 census) as well as by the state's poor performance on nutritional indicators. At 100 percent coverage, Uttar Pradesh will account for 18 percent of the on counseling and 21 percent of expenditure on maternity benefits promised under the NFSA 2013. Health intervention costs for Uttar Pradesh will amount to 13 percent of all India investment on the same category. Finally, expenditure on supplementary food and micronutrient and deworming interventions will cost 18 percent and 21 percent, respectively, of the national costs of scaling up the *India Plus* actions to full coverage.

[2] Appendix Table A19 contains information from various sources for budgets, FLW networks, and coverage, health and nutrition indicators, and estimated population projections for Uttar Pradesh.

5. Results: Expenditure analysis

In this section, we compare the government reported expenditures as well as target beneficiary numbers with estimated costs and estimated target beneficiary numbers. As noted in the methods section, results in this section are restricted to an expenditure analysis of the ICDS supplementary nutrition program as the approach to reporting expenditures by the ICDS and the NRHM do not allow one to assess spending on individual nutrition interventions.

Comparing reported and estimated expenditures and beneficiary coverage levels for the ICDS Supplementary Nutrition Program (SNP)

Here, we examine the following: (1) *ICDS SNP expenditure in 2014* as reported by the Government of India, compared to the estimated costs for the reported target populations for 2014 (i.e., by multiplying by the ICDS unit costs per beneficiary with reported number of beneficiaries covered; and (2) *Reported coverage of ICDS SNP beneficiaries* compared to the number of beneficiaries estimated under 'full coverage' (using population estimates and target beneficiary age groups).

Table 5.1 compares reported ICDS SNP expenditures for 2014 with our estimated costs for the same level of coverage. Our results illustrate that it is likely that the ICDS was not spending enough on SNP even by its own unit cost norms. The data indicate that less than US$ 1.9 billion was spent on SNP in 2014, whereas the SNP cost norms suggest that required expenditures should have been over US$ 2.6 billion. The total expenditure gap for reported coverage levels of ICDS SNP is thus, potentially well over half a billion dollars in 2014.

TABLE 5.1 NATIONAL-LEVEL COMPARISON OF 2014 COST AND EXPENDITURE OF ICDS SNP ON TARGET GROUPS

Target group	Government- reported target beneficiary coverage for ICDS SNP in 2014	Unit cost as per ICDS norms (US$)	Estimated cost for reported ICDS coverage (US$ million)	Government reported expenditure in 2014 (US$ million)
	1	2	3=1x2	4
6–12 months	9,338,081	14.52	135	NA
12–36 months	37,352,325	29.03	1,084	NA
3–6 years	38,250,195	29.03	1,110	NA
Pregnant and lactating women	19,568,216	16.93	331	NA
SAM children	1,313,991	8.60	17	NA
Total			**2,678**	**1,883**

Source: Integrated Child Development Services, Ministry of Women and Child Development & Lok Sabha. Refer to Table A25 for source links and details of data accessed.
Notes: ICDS SNP expenditure for 2014 was reported to be US$ 1883.2 million ($1=INR62) NA= Not available

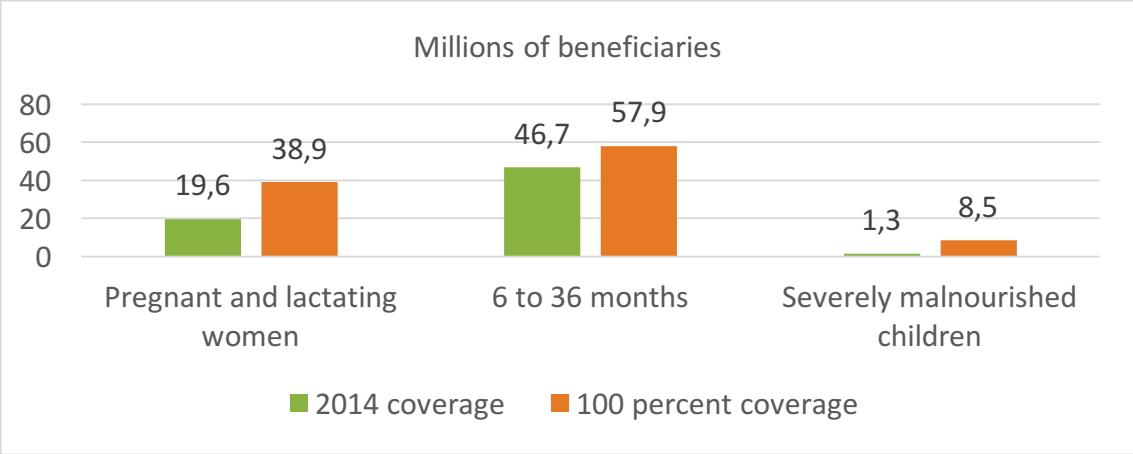
The cost and expenditure comparisons for 2014 indicate that at the national level, the ICDS spends less on each beneficiary it covers than it would cost if the reported cost norms were applied to the reported number of beneficiaries. However, this difference between cost norms and actual expenditure varies across states. For example, states such as Andhra Pradesh, Madhya Pradesh, Odisha, Rajasthan, Uttar Pradesh, Tamil Nadu, Uttarakhand, Meghalaya, Mizoram, Tripura and Sikkim closely match the unit cost norms stated by the ICDS, while Assam, West Bengal, Arunachal Pradesh, Goa and Punjab spend much less on each beneficiary than stated in ICDS cost norms (Table A24 in the appendix).

Comparing *reported* target beneficiaries to *estimated* target beneficiaries also illustrates large gaps. Figure 5.1 shows that there are large gaps in current coverage of the ICDS compared to its goal of

universalization. The ICDS SNP reported covering 19.5 million pregnant and lactating women in 2014; however, according to our estimates, to achieve full coverage, the ICDS would have had to almost double these coverage levels to reach 38 million pregnant and lactating women. In addition, the SNP reported covering 47 million children in the age group 6 months to 3 years. Our estimates of the number of target beneficiaries to be covered if the program were truly universalized indicate that the ICDS would need to expand the coverage of this age group by almost 11 million children to reach full coverage of close to 60 million children 6 months to 3 years of age.

Finally, the ICDS reported covering 1.3 million severely malnourished children in 2014 whereas our estimates suggest that coverage needs to expand quite substantially, by about 7 million children, to reach all severely malnourished children. The coverage estimates and gaps in coverage of severely malnourished children are limited by the different approaches used to identify severely malnourished children in the program versus in our estimates, and by the datedness of the data used to derive estimates of the malnourished population. These will be updated as soon as raw data from the Rapid Survey on Children (2014) are available for analysis.

FIGURE 5.1 DIFFERENCES IN REPORTED COVERAGE OF TARGET BENEFICIARIES WITH ICDS SNP IN 2014, COMPARED TO ESTIMATED NUMBER OF TARGET BENEFICIARIES



Source: Census 2011 data and ICDS Supplementary Nutrition Program (SNP) coverage data. Refer to Table A25 for source links and details of data accessed.

Expenditure Trends in the ICDS

In recent years, the ICDS has reported total expenditures incurred under two broad categories: (1) funds released by the central government and (2) total expenditure incurred (which includes additional funds spent by states). As per Table 5.2, the contribution of the state governments toward ICDS was about 35 percent of its total outlay at the national level. The ICDS has also reported its budget allocation toward three sub-heads, namely, 'General', 'Supplementary Nutrition Program (SNP)', and 'Training'. The trends indicate that the share of expenditure under ICDS General has increased as a result of the restructuring that took place in the ICDS, from 33.6 percent (2010–11) to 42.4 percent (2011–12) of total ICDS expenditure. Supplementary nutrition makes up the largest share of expenditure undertaken under ICDS, amounting to 57.2 percent of total expenditure.

Expenditure on training only constitutes around 0.5 percent of ICDS's total expenditure and thus we compare the trends in expenditure only for the other two categories. Table 5.2 shows the broad patterns in SNP allocations and expenditures since 2012–13. On average, center spends around 37 percent of its

allocated ICDS budget toward SNP and the states double that investment. In 2013–14, the total spending on SNP (center and state together) was of 11,698 INR crore (US$1.9 billion).

TABLE 5.2 FUNDING TRENDS OF MWCD, ICDS, AND SNP SINCE 2012

	2012–13	2013–14	2014–15	2015–16
	INR crore per year (US$ billion)			
Budget allocation				
Budget allocation of MWCD	18,584 (3.0)	20,440 (3.3)	21,194 (3.4)	17,901 (2.9)^
Budget allocation of ICDS	15,850 (2.6)	16,058 (2.6)	18,691 (3.0)	15,486 (2.5)
Expenditure				
Expenditure of ICDS (center)	15,701 (2.5)	16,267 (2.6)	NA	NA
Expenditure on SNP (center plus state)	11,830 (1.9)	11,698 (1.9)	NA	NA
Expenditure on SNP (center)	5,822 (0.9)	5,867 (1.0)	6,391 (1.0)*	NA
SNP funding pattern				
SNP's share in center's ICDS allocation (percent)	37	37	34*	NA
Centre's share in total SNP expenditure (percent)	49	50	NA	NA

Sources: Lok Sabha data on expenditure (Refer to Table A25 for source link and other details) and budget allocation figures for MWCD for 2013, 2014 and 2015 are from Accountability Initiative India Expenditure Track available at http://www.accountabilityindia.in/expenditure_track (Accessed 20th December 2015)

Notes: * = figures only available until February 2015; ^INR cr 10,351 (US$ 1.7 bn) initial allocation + INR cr 7,550 (US$ 1.2 bn) additional release; NA = not available; MWCD = Ministry of Women and Child Development; ICDS = Integrated Child Development Services; SNP = Supplementary Nutrition Program. For 2015-15 actual expenditure of ICDS was not available.

Expenditure on both General and SNP categories has been increasing steadily over the past few years (Table 5.2). The central government releases funds to states in excess of US$2 billion per year total toward both categories. States then add funds in excess of US$700 million total, predominantly toward SNP. The funds that individual states allocate toward ICDS differ both in absolute and relative amounts.

The central government reduced budgetary allocations for 2015, cutting allocation to the Ministry of Women and Child Development Ministry (MWCD) by 50.9 percent from US$ 3.4 billion in 2014-to US$ 1.7 billion in 2015. The 2015 allocations were subsequently increased by an additional US$ 1.2 billion. Given earlier increases in outlays to this ministry and the ICDS program over the previous years, the 2015 budget, was a clear break in that trend. The 2015 budget cut toward the WCD marked a change in allocation trend, and implies that available funds from the central pool would likely fall far short of what is required to address the goals of true universalization. Two points are worth noting here, however:

1. Even with the increasing trend in allocation toward ICDS, the 2013/14 budget and expenditure were far short of what would be required for universalization.
2. The 2015 budget cut would imply that states would need to go well beyond their 50 percent commitments to SNP to even get to 2014 spending levels.

Admittedly, not all families' likely need or want the food supplements, and there are well-known challenges with assuring quality of the food supplements. However, for a program that is expected to universalize food supplementation, and is mandated to do so by the Supreme Court of India, it is clear that the budget process does not fully consider the level of spending needed to ensure that the food supplements are available for those families who choose to/want to access them.

Expenditure trends in the NRHM

Several nutrition-specific interventions are also delivered by the NHRM. However, they are bundled with several other interventions or packages provided by NHRM, and thus it is challenging to compare specific expenditures under NRHM to costed nutrition interventions. Table 5.2 below shows that the program comparable to the *India Plus* Micronutrient-Deworming and Health estimates is the RCH-II. RCH-II consists of numerous interventions that go beyond those covered in the *India Plus* framework and, consequently, it is difficult to disentangle the expenditures made on those interventions and compare them with our estimates.

TABLE 5.2 COMPARING INTERVENTIONS INCLUDED UNDER RCH-II TO THE COSTED NUTRITION INTERVENTIONS *PLUS*

Thrust areas under Child Health program (RCH II)	Matching Interventions under *India Plus*
Thrust Area 1: Neonatal Health	
Essential newborn care (at every "delivery" point at time of birth) Facility-based sick newborn care (at FRUs and district hospitals) Home-based newborn care	Not able to match
Thrust Area 2: Nutrition (cost reported by NRHM under RCH-II)	
Promotion of optimal infant and young child feeding practices (with ICDS)	Counseling for breastfeeding, complementary feeding and hand washing
Micronutrient supplementation (vitamin A, Iron Folic Acid)	Iron folic acid supplements for pregnant and lactating women, iron supplements for children 6–59 months, Vitamin A supplements for children 6–59 months
Management of children with severe acute malnutrition	Treatment of SAM for children 6–59 months with a WHZ<-3
Thrust Area 3: Management of common childhood illnesses (cost reported by NRHM under RCH-II)	
Management of childhood diarrheal diseases and acute respiratory infections	ORS and therapeutic zinc supplements for treatment of diarrhea, deworming
Thrust Area 4: Immunization (additional costs reported by NRHM under routine immunizations and Pulse Polio Immunization (PPI))	
Intensification of routine Immunization Eliminating measles- and Japanese Encephalitis-related deaths Polio eradication	No match

Source: Ministry of Health and Family Welfare, National Rural Health Mission. http://nrhm.gov.in/nrhm-components/rmnch-a/child-health-immunization.html (Accessed Dec 28, 2015)

Regardless of our ability to identify expenditures for the costed nutrition interventions within the NRHM, it is useful to examine the total expenditures under the NRHM over time. Analogous to the ICDS, the NRHM also reports its expenditures in a manner that separates contributions by the center and the state government. Government reported expenditures for NRHM are in broad categories similar to that of the ICDS (Table 5.3) .

In 2013-14, the total expenditure incurred under the NRHM was US$2.9 billion, of which, state governments contributed approximately 9 percent. In 2012-13, the highest overall expenditures were reported in Uttar Pradesh, Maharashtra, Bihar, and Madhya Pradesh, in that order (Table A21). Yet, Uttar Pradesh was unable to utilize all the funds contributed by the center and hence, made no contributions on its own. Of the remaining three states, Maharashtra made the largest contribution of approximately US$40 million, followed by Madhya Pradesh and Bihar. Overall, the NRHM has been consistently increasing spending on RCH and spent over US$ 1 billion on it in 2013—14 (Table 5.3).

TABLE 5.3 EXPENDITURES REPORTED UNDER NRHM FOR YEARS 2011—12 TO 2014—15

	INR Crore (US$ million)				Percentage of total expenditure			
Program	**2011–12**	**2012–13**	**2013–14**	**2014-15**	**2011–12**	**2012–13**	**2013-14**	**2014-15**
RCH Flexible Pool	4572.9 (738)	5757.8 (929)	6812.3 (1099)	5464.4 (881)	28.7	33.9	37.7	29.6
Mission Flexible Pool	4798.9 (774)	5817.4 (938)	6411.6 (1034)	5949.9 (960)	30.1	34.2	35.5	32.2
Routine Immunization	186.9 (30)	363.4 (59)	441.9 (71)	249.9 (40)	1.2	2.1	2.4	1.4
Pulse Polio Immunization	370.7 (60)	479.1 (77)	394.2 (54)	330.1 (53)	2.3	2.8	2.2	1.8
National Iron Deficiency Disorders Control Program	21.4 (3)	1.4 (0)	0.3 (0)	50.1 (8)	0.1	0.0	0.0	0.3
Infrastructure Maintenance	4877.5 (787)	3995.5 (644)	3264.2 (526)	4403.9 (710)	30.6	23.5	18.1	23.8
Communicable Disease control Programs	919.7 (148)	570.9 (92)	538.5 (87)	1396.2 (225)	5.8	3.4	3.0	7.6
Non Communicable Disease Programs	212.8 (34)	0 (0)	207.4 (33)	647.4 (104)	1.3	0.0	1.1	3.5
Total	**15,960.8 (2,574)**	**16,985.5 (2,740)**	**18,070.4 (2915)**	**18491.9 (2,983)**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Annexure of Unstarred Question 2445 dated 25.07.2014, The Lok Sabha (House of the People) (Refer to Table A25 for source link and access date)
Notes: Figures for 2014-15 are budget allocations because actual expenditure data were not available.

Summary

Overall, this section highlights the challenges in assessing the actual resourcing and spending patterns for nutrition interventions both within the ICDS and the NRHM. To enable an assessment of adequacy of financing for nutrition, it is important to ensure that spending is reported for the specific interventions and age groups that are meaningfully aligned with the intended package of interventions under each ministry's purview.

6. Summary and discussion

This report presents the findings of an extensive exercise to estimate costs for delivering, at scale, a range of preventive, promotive, and therapeutic interventions for nutrition in India's diverse landscape. Using the SUNWWIC unit costs and India-specific target populations, we estimated that about US$4.2 billion would be needed to deliver at scale the SUN interventions in India. Using a more tailored, but expanded, set of interventions already in India's policy landscape and a set of unit costs tailored to the Indian/South Asian context, we find that cost would be about US$5.9 billion for the set of actions we labelled *India Plus*. We find that costs and the differences in total costs between the two methods vary, depending on the interventions chosen, unit costs, and target populations. We only estimated state-specific costs for the *India Plus* set of interventions and find there that the costs are driven both by population size and the levels of undernutrition in each state. Costs are highest for Uttar Pradesh, followed by Bihar, Maharashtra, Rajasthan, and other states. For the *India Plus* interventions, our findings indicate that the supplementary food and maternity cash benefits together account for over 80 percent of the total estimated costs.

Overall, the costs estimated in this paper tally reasonably well with estimates from previous reviews and studies. For instance, in SUNWWIC, the World Bank (Horton et al. 2010) estimates that the total additional costs of all ten SUN interventions is about US$5.9 billion for South Asia (Afghanistan, Bangladesh, India, Nepal, and Pakistan) and in the Lancet (Bhutta et al. 2013a) the figure estimated is US$4.8 billion.

While major studies at the global level (Horton et al. 2010; Bhutta et al. 2013b; Darmstadt et al. 2008) focused on providing costs for multiple interventions for South Asia as a whole, other focused studies (Fiedler and Macdonald 2009; Neidecker-Gonzales, Nestel, and Bouis 2007; Bhutta et al. 2013a) have provided country specific costs for micronutrients, behavioral change communication (BCC), vaccination, and fortification. To our knowledge, this study is the first to have estimated costs for multiple interventions at the subnational level.

SENSITIVITY OF ESTIMATES TO UNIT COSTS AND TARGET POPULATIONS

Cost estimates are highly sensitive to unit costs, which are highest for food supplementation and cash benefits. As with other studies, our estimates reaffirm that unit costs for micronutrients and deworming are lowest among the spectrum of interventions, and, therefore, yield the lowest total intervention costs. Nevertheless, even unit costs can vary across countries and within, and total costs can therefore be sensitive to this variability. For example, Nepal's National Vitamin A program reports a unit cost of US$0.04 per capsule, which is US$0.03 less than the unit cost used in this study, but excludes the costs of training, personnel, and promotion (Neidecker-Gonzales, Nestel, and Bouis 2007). Adding in those costs increases the unit cost to US$0.82. In another example, the SUNWWIC (Horton et al. 2010) estimate for unit costs for counseling is US$7.5 per child per year, on average, while we used unit costs of US$1.76 for pregnancy-related counseling, 1.67 for breastfeeding counseling (0—6 months), 7.47 for complementary feeding counseling (6—12 months), and 2.8 for counseling between 12—24 months, yielding a total cost that is lower than the SUNWWIC estimate. Another study on the costs of providing counseling have used a slightly higher unit cost than SUNWWIC on account of factoring in an additional cost to training workers of US$0.20/child/year (Holla, Gupta, and Dadhich 2012). We believe the unit costs applied in our study are likely the most applicable for the South Asian context as they draw on a detailed costing study that assesses the financial and economic costs of delivering a package of counseling services in a delivery platform that is similar to health systems in South Asia.

One of the most challenging areas for estimating unit costs is the cost of delivering a high quality nutritional supplement as part of the supplementary nutrition program. Global recommendations for

interventions support the inclusion of a food supplement or cash transfer along with counseling for behavior change (Bhutta et al. 2013a). However, the cost of providing a high quality supplementary food is not well-studied. Cost estimates for South Asian countries in SUNWWIC are based on a complementary food developed by the World Food Programme (called India ready-to-use food) at US$0.13 per child per day (Horton et al. 2010), whereas *India Plus* estimates are based on cost norms of US$0.097 per child per day for the ICDS supplementary nutrition program, as budgeted by the Government of India. In the context of the *India Plus* estimates, we chose to use the Government of India's stated cost norms for supplementary food in the ICDS program. We recognize, however, that the cost norm of $0.097 (INR 6) per child per day (Ministry of Women and Child Development 2012) may be unlikely to deliver a high quality supplementary food that also meets available guidance on the quality of supplementary foods for complementary feeding. The Government of India cost norms for supplementary nutrition aim to deliver 500 kcal in calories and 12-15 grams in protein, for 300 days a year, to children 6-36 months, at US$29 per beneficiary per year. The SUNWWIC complementary food supplements cost a total of US$51.1 per child per year to provide 260 kcal (per day) to moderately malnourished children in India. It would be prudent, given the variability in what the current cost norms are likely to be able to deliver across India, for a careful review of the composition, quality, and nutritional appropriateness of the supplementary foods intended to be provided in India. Further research on the true unit costs of provision of a palatable, safe, high quality food supplement in India and other South Asian countries is thus strongly merited.

In the *India Plus* estimates, complementary food rations, even using the slightly lower cost norms as noted above, will cost US$1.5 billion per year. The internationally comparable intervention in the SUNWWIC costing is "complementary food for prevention or treatment of moderate malnutrition." One major area of difference between the SUNWWIC and the *India Plus* estimates we derived is that the ICDS targets all children aged 6–36 months for food supplements irrespective of their nutritional status, whereas SUN interventions are targeted to children 6–23 months with a WAZ score of less than –2. This leads to differences between the two costing approaches due to target population definitions. The target population for the SUN intervention is narrower and, hence, smaller than the universal age-based targeting in the ICDS program. Research in other contexts suggests that a blanket age-targeted program for supplementary food is likely to have greater community-wide impacts on undernutrition (Ruel et al. 2007). Even though the SUNWIC intervention accommodates for targeting errors by assuming twice the prevalence of WAZ <–2, the resultant target populations using the SUNNWIC and *India Plus* methods are 32.2 and 57.9 million children, respectively. These vastly different target populations yield different total costs depending on the unit cost applied. If one applies the US$29 *India Plus* unit cost to the SUNWWIC target population, the total cost is approximately US$0.93 billion, which is much less than the US$1.65 billion figure using the SUNWWIC unit cost. On the other hand, applying the SUNWWIC cost of supplementary food ($0.13 per child per day) would lead to a total higher cost of US$2.96 billion for the *India Plus* estimate, given the different target groups.

Our estimates suggest that, at $2.9 billion per year, the universally targeted maternity cash benefits to support breastfeeding are the highest cost intervention to deliver at scale. These estimates, too, are subject to unit cost and target population variability, however. For example, one recent estimate in India (Holla, Gupta, and Dadhich 2012) suggests that delivering maternity cash benefits of $2 per day for six months to a target population of women from households living below the poverty line in South Asia would cost US$4.8 billion a year. A key difference between this estimate and what is currently budgeted in the government norms for maternity benefits is the unit cost—US$360 per woman for the Holla, Gupta, and Dadhich estimate compared to about $100 per woman. In this particular example, either a small increase in per day transfers for a universal intervention or a much higher transfer amount for a more targeted intervention will both have significant implications for total financial outlays.

Further, we investigated trends in the expenditure incurred on the ICDS and NRHM. ICDS expenditures on both the General and the Supplementary Nutrition Program (SNP) categories has been increasing steadily over the past few years. The center contributes toward both categories, while state governments primarily fund SNP through a 50:50 ratio. This trend may just break as a result of the change in funding pattern made in 2015 by the center. Under the new system, it is the responsibility of states to invest in the SNP from the unrestricted fund provided to them. We also find preliminary evidence that the ICDS likely spends less per year on each beneficiary, on average, than it would incur if stipulated cost norms per beneficiary are adhered to. Moreover, expenditures incurred on training of staff are miniscule and could, therefore, be a cause of concern for the quality of services delivered, particularly with respect to provision of skilled services such as counseling. Expenditures reported by the NRHM do not lend themselves to expenditure analyses like those for ICDS because expenditures for several interventions are bundled together and thus are difficult to disentangle and then compare individually to cost estimates for specific interventions. The expenditure analysis highlights the pressing need for costs to be reported in more fine-grained categories of beneficiary age groups or specific interventions, for both NRHM and ICDS. This can not only aid in analysis, but would also enable greater transparency and better planning.

LIMITATIONS

Our approach to deriving estimates of the total cost of delivering nutrition-specific interventions in India is not without limitations. Although there might well be differences in costs of delivery within different states, the lack of detailed costing studies precludes an accounting for local unit cost variations in our state-specific estimates. In this study, we do not attempt to estimate gaps between projected costs and actual expenditures for all interventions, primarily because actual expenditures are difficult to track for all essential nutrition interventions.

Another critical limitation for the estimates derived here is data availability for the target population estimates used in deriving costs of treatment for severe acute malnutrition. The primary source of data for nutrition indicators is the National Family Health Survey-3 (International Institute for Population Sciences 2007) from 2005–06, which is now outdated by 10 years. Recent estimates published in India, suggest that wasting rates in India may well have gone down by several percentage points, which would, in turn, lead to significant reductions in the numbers of severely malnourished children(Ministry of Women and Child Development 2015) . This will have significant financial implications for the costing of treatment of severe acute malnutrition, one of the more expensive interventions.

Another limitation of our estimates are that we have not accounted for the cost of formative research or mass media campaigns for behavior change. The literature suggests that the costs of mass media can be quite high (US$1—5 per beneficiary at 1992 prices) and could likely increase BCC outlays required considerably (Horton 1992). However, these costs will again need to be estimated either at the state-level or the regional level, given the diversity across India.

In addition, we have not extended the costs derived from this study to their natural progression—a cost-benefit analysis. However, a recent paper on the cost-benefit ratios for nutrition interventions (Hoddinott et al. 2013) recommended by SUNWWIC and the Lancet, indicate that benefit-cost ratio estimates range from 12.9 to 18.4 for Nepal and Bangladesh and 28.9 to 38.6 for Pakistan and India, respectively. Taken together, our work indicates that the investments in nutrition in India, especially, can have significant benefits.

Finally, as mentioned earlier, the expenditure analysis is only meant to be illustrative. The current reporting of expenditures for NRHM and ICDS is not conducive to make one to one comparisons for specific interventions. Therefore, our estimates provide only a flavor of true additional requirements. A

more robust analysis requires exact expenditure figures reported intervention and target population wise, which were not available in the public domain.

PROGRAM AND POLICY RECOMMENDATIONS

This study has estimated the financial commitments required to deliver at scale a set of interventions already within the policy frameworks in India, a country that contributes the largest number of children in the South Asia region.

The financial requirements for delivering these interventions vary within India, and prioritization of financing for nutrition across India will need to consider the gaps between projected costs for each state, current expenditures, and the availability of national- and state-level finances to deliver fully for nutrition.

Further research is essential to re-estimate some of these costs based on updated unit costs for supplementary feeding, updated target population estimates for severe acute malnutrition, and any other updates to unit costs.

Last, but not least, government departments need to align reporting of expenditures and coverage data to specific target age categories and specific nutrition interventions, to enable a better analysis of adequacy of spending on nutrition across both ministries that currently deliver nutrition-specific interventions.

References

Avula, R., Kadiyala, S., Singh, K., Menon, P. 2013. *The Operational Evidence Base for Delivering Direct Nutrition Interventions in India*. Discussion Paper. Washington, DC: International Food Policy Research Institute.

Bhutta Z. A., J. K. Das, A. Rizvi, M. F. Gaffey, N. Walker, S. Horton et al. 2013a. "Evidence-based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done and at What Cost?" *Lancet* 382: 452–477.

Bhutta, Z. A., J. K. Das, N. Walker, A. Rizvi, H. Campbell et al. 2013b. "Interventions to Address Deaths from Childhood Pneumonia and Diarrhoea Equitably: What Works and at What Cost?" *Lancet* 381: 1417–1429.

Coalition for Sustainable Nutrition Security. 2010. "Sustainable Nutrition Security in India: A Leadership Agenda for Action." Accessed on Dec 28, 2015. http://www.intrahealth.org/files/media/vistaar-publications/LeadershipAgendaforAction-May2010.pdf.

Darmstadt, G. L., N. Walker, J. E. Lawn, Z. A. Bhutta, R. A. Haws et al. 2008. "Saving Newborn Lives in Asia and Africa: Cost and Impact of Phased Scale-up of Interventions within the Continuum of Care." *Health Policy and Planning* 23 (2): 101–117.

Fiedler, J., T. Sanghvi, and M. K. Saunders. 2007. "The Costs of Micronutrient Interventions : Policy Issues and Interventions: The Societal Costs of Micronutrient Estimates of the Cost of Micronutrient." Accessed on Dec 28, 2015. http://pdf.usaid.gov/pdf_docs/PNADK391.pdf

Fiedler, J. L., and B. Macdonald. 2009. "A Strategic Approach to the Unfinished Fortification Agenda: Feasibility, Costs, and Cost-effectiveness Analysis of Fortification Programs in 48 Countries." *Food and Nutrition Bulletin* 30 (4): 283–316.

Government of India, Census of India. "Clinical, Anthropometric and Biochemical (CAB) 2014." Accessed on Dec 28, 2015. http://www.censusindia.gov.in/2011census/hh-series/cab.html

Government of India, Ministry of Health and Family Welfare. 2011. "Operational Guidelines on Facility Based Management of Children with Severe Acute Malnutrition, New Delhi." Accessed on Dec 28, 2015. http://www.cmamforum.org/Pool/Resources/India-Operational-guidelines-facility-based-management-SAM-2011.pdf

Government of India, Ministry of Health and Family Welfare. 2012. "Project Implementation Plan for National Rural Health Mission, New Delhi." Accessed on Dec 28, 2015. http://nrhm.gov.in/.

Government of India, Ministry of Law and Justice. 2013. *THE NATIONAL FOOD SECURITY ACT, India: Supreme Court*. Accessed on Dec 28, 2015. http://indiacode.nic.in/acts-in-pdf/202013.pdf

Government of India, Ministry of Women and Child Development. 2014. "Rapid Survey of Children 2013-2014 – India Fact Sheet." Accessed on Dec 28, 2015. http:/s-cd.nic.in/icds/National_Fact%0sheet_RSOC%20_02-07-2015.pdf

Government of India, Ministry of Women and Child Development. 2012. "Strengthening and Restructuring of Integrated Child Development Services (ICDS) Scheme." Accessible on May 20, 2015. wcd.nic.in/icds/ICDSWEB /StrengtheningRestructuredICDSScheme.docx

Hoddinott, J., H. Alderman, J. R. Behrman, L. Haddad, and S. Horton. 2013. "The Economic Rationale for Investing in Stunting Reduction." *Maternal and Child Nutrition* 9 (S2): 69–82.

Holla, R., A. Gupta, and J. Dadhich. 2012. "Scaling Up Breastfeeding/Infant and Young Child Feeding Interventions Rates—What Will It Cost?" In *The World Breastfeeding Conference, 2012*, December 6–9, Delhi, India.

Holla, R., A. Lellamo, A. Gupta, J. Smith, and J. P. Dadhich. 2013. "The Need to Invest in Babies." Accessed on Dec 28, 2015. *infactcanada.ca/pdf/the-need-to-invest-in-babies.pdf*

Horton, S. 1992. *Unit Costs, Cost-Effectiveness, and Financing of Nutrition Interventions*. Policy Research Working Paper Series 952. Washington, DC: World Bank.

Horton, S., F. Begin, A. Greig, and A. Lakshman. 2009. *Best Practice Paper: Micronutrient Supplements for Child Survival (Vitamin A and Zinc)*. Copenhagen Consensus Center. Accessed on Dec 28, 2015. http://www.copenhagenconsensus.com/

Horton, S., M. Shekar, C. McDonald, A. Mahal, and J. K. Brooks. 2010. *Scaling Up Nutrition—What Will It Cost?* Washington, DC: World Bank.

IFPRI (International Food Policy Research Institute). 2014. "Global Nutrition Report, India." Accessed on May 26, 2015. http://globalnutritionreport.org/files/2014/11 /gnr14_cp_india.pdf

International Institute for Population Sciences. 2007. *National Family Health Survey (NFHS-3), 2005-06: India*. Accessed on Dec 28, 2015. www.nfhsindia.org

Khan, J. A. M., K. K. Saha, and R. Rawat. 2014. "Estimating the Implementation Costs of Alive & Thrive Interventions to Improve Infant and Young Child Feeding (IYCF) Practices in Bangladesh: Activity-based Costing of Community-based Activities through BRAC's Health Network and Other Existing Platforms." Unpublished.

Kosec, K., R. Avula, B. Holtemeyer, P. Tyagi, S. Hausladen et al. 2015. "Predictors of Essential Health and Nutrition Service Delivery in Bihar, India: Results From Household and Frontline Worker Surveys.". *Global Health: Science and Practice*. June 1, 2015 vol. 3 no. 2 p. 255-273.

Micronutrient Initiative. 2011. *India's Micronutrient National Investment Plan 2007–2011, New Delhi*. Accessed on Dec 28, 2015. http://inclentrust.org/inclen/

Neidecker-Gonzales, O., P. Nestel, and H. Bouis. 2007. "Estimating the Global Costs of Vitamin A Capsule Supplementation: A Review of the Literature." *Food and Nutrition Bulletin* 28 (3): 307–316.

Ruel, M. T., P. Menon, J. P. Habicht, C. Loechl, G. Bergeron et al. 2007. "Age-based Preventive Targeting of Food Assistance and Behavior Change Communication Is More Effective in Reducing Childhood Undernutrition than Targeting Undernourished Children: Evidence from a Cluster Randomized Trial in Haiti." *Lancet* 371 (588-95): 539.

Stenberg, K., H. Axelson, P. Sheehan, I. Anderson, A. Gülmezoglu et al. 2015. "Advancing Social and Economic Development by Investing in Women's and Children's Health: A New Global Investment Framework." *Lancet* 383 (9925): 1333–1354.

UNICEF (United Nations Children's Fund). 2011. "The Adolescent Girls Anaemia Control Programme—Breaking the Inter-Generational Cycle of Undernutrition in India with a focus on Adolescent Girls." Accessed on Dec 28, 2015. http://www.unicef.org/india/14._Adolescent_Anaemia_Control_ Programme.pdf

UNICEF (United Nations Children's Fund). 2013. "Long Lasting Insecticidal Nets (LLINs) price data." Accessed on Dec 28, 2015. http://www.unicef.org/supply/files/LLINs_price_transparency_August_2013.pdf

Appendix: Additional Results Tables

TABLE A1 TARGET POPULATION AND MULTIPLIERS FOR NORTHERN STATES

	Northern states					
Target population and multipliers	**Jammu & Kashmir**	**Himachal Pradesh**	**Uttarakhand (Uttaranchal)**	**Punjab**	**Haryana**	**Uttar Pradesh**
Crude birthrate	18.3	16.9	19.3	16.6	22.3	28.3
Derived number of live births per year, in 2011	2,29,118	1,16,032	1,95,253	4,60,535	5,64,563	56,40,305
Decadal growth rate	23.71	12.81	19.17	13.73	19.9	20.09
Derived average annual growth rate (%)	2.37%	1.28%	1.92%	1.37%	1.99%	2.01%
2014 Projections (based on 2011 Census data)						
Projected total population in 2014	1,34,62,862	71,23,394	1,07,09,791	2,88,61,113	2,68,96,980	21,18,53,529
Projected number of children under 5 years in 2014	15,17,930	5,66,197	9,79,079	22,22,621	25,06,387	2,16,29,608
Projected number of live births in 2014	2,45,804	1,20,549	2,06,699	4,79,766	5,98,942	59,87,121
Projected number of children 0—6 months in 2014	1,47,681	52,899	91,447	2,18,743	2,47,578	18,57,902
Projected number of children 6—12 months in 2014	1,47,681	52,899	91,447	2,18,743	2,47,578	18,57,902
Projected number of children 12—23 months in 2014	2,94,377	1,18,350	1,87,395	4,42,354	4,97,057	38,62,482
Projected number of children 6—23 months in 2014	4,42,058	1,71,250	2,78,841	6,61,098	7,44,635	57,20,385
Projected number of children 6—36 months in 2014	7,48,814	2,82,744	4,74,445	10,96,937	12,48,185	1,01,69,704
Projected number of children 12—36 months in 2014	6,01,132	2,29,844	3,82,998	8,78,194	10,00,607	83,11,801
Projected number of children 6—59 months in 2014	13,70,248	5,13,298	8,87,632	20,03,878	22,58,809	1,97,71,705
Projected number of 11—18 year old girls in 2014	10,93,778	5,00,032	9,17,187	19,93,965	20,31,175	1,95,18,303
Estimated Proportion of Women 18—50 years working in government sector (derived from NSS Data)	0.0059	0.0103	0.0029	0.0051	0.0031	0.0017
NFHS-3 Data						
Percent of children U5 with HAZ <-2	35.0	48.0	44.4	36.7	45.7	56.8
Percent of children U5 with WAZ <-2	25.6	42.5	38.0	24.9	39.6	42.4
Weighted percent of children 6—36 months with WAZ <-3	8.2	16.6	15.7	8.0	14.2	16.4
Percent of children U5 with WHZ <-2	14.8	19.8	18.8	9.2	19.1	14.8
Percent of children U5 with WHZ <-3	4.4	6.4	5.3	2.1	5.0	5.1

TABLE A2 TARGET POPULATION AND MULTIPLIERS FOR EASTERN STATES

	Eastern states				
Target population and multipliers	**Bihar**	**West Bengal**	**Chhattisgarh**	**Orissa (Odisha)**	**Jharkhand**
Crude birthrate	28.1	16.8	25.3	20.5	25.3
Derived number of live births per year, in 2011	29,16,910	15,32,499	6,45,923	8,59,921	8,34,423
Decadal growth rate	25.07	13.93	22.59	13.97	22.34
Derived average annual growth rate (%)	2.51%	1.39%	2.26%	1.40%	2.23%
2014 Projections (based on 2011 Census data)					
Projected total population in 2014	11,18,09,145	9,52,18,581	2,73,10,450	4,37,30,046	3,52,25,361
Projected number of children under 5 years in 2014	1,37,49,357	76,43,884	27,17,192	38,08,276	38,98,309
Projected number of live births in 2014	31,41,837	15,97,439	6,90,693	8,96,466	8,91,604
Projected number of children 0—6 months in 2014	10,85,166	6,68,576	2,66,388	3,49,711	3,34,016
Projected number of children 6—12 months in 2014	10,85,166	6,68,576	2,66,388	3,49,711	3,34,016
Projected number of children 12—23 months in 2014	25,10,305	14,58,572	5,00,868	8,02,543	7,29,151
Projected number of children 6—23 months in 2014	35,95,471	21,27,148	7,67,256	11,52,254	10,63,167
Projected number of children 6—36 months in 2014	66,13,521	36,98,458	13,06,689	18,90,225	18,74,675
Projected number of children 12—36 months in 2014	55,28,354	30,29,882	10,40,301	15,40,514	15,40,659
Projected number of children 6—59 months in 2014	1,26,64,190	69,75,308	24,50,804	34,58,565	35,64,293
Projected number of 11—18 year-old girls in 2014	89,38,885	73,34,060	23,13,701	34,51,339	29,42,427
Estimated proportion of women 18—50 years working in government sector (derived from NSS Data)	0.001	0.004	0.0055	0.0036	0.0013
NFHS-3 Data					
Percent of children U5 with HAZ <-2	55.6	44.6	52.9	45.0	49.8
Percent of children U5 with WAZ <-2	55.9	38.7	47.1	40.7	56.5
Weighted percent of children 6—36 months with WAZ <-3	24.1	11.1	16.4	13.4	26.1
Percent of children U5 with WHZ <-2	27.1	16.9	19.5	19.5	32.3
Percent of children U5 with WHZ <-3	8.3	4.5	5.6	5.2	11.8

TABLE A3 TARGET POPULATION AND MULTIPLIERS FOR WESTERN STATES AND CENTRAL STATES

Target population and multipliers	Western and Central States			
	Gujarat	Rajasthan	Madhya Pradesh	Maharashtra
Crude birthrate	21.8	26.7	27.3	17.1
Derived number of live births per year, in 2011	13,15,500	18,29,701	19,81,914	19,21,165
Decadal growth rate	19.17	21.44	20.3	15.99
Derived average annual growth rate (%)	1.92%	2.14%	2.03%	1.60%
2014 Projections (based on 2011 Census data)				
Projected total population in 2014	6,39,23,287	7,31,30,022	7,71,09,114	11,78,50,157
Projected number of children under 5 years in 2014	57,80,414	77,81,987	79,35,586	98,18,342
Projected number of live births in 2014	13,92,614	19,49,928	21,05,079	20,14,805
Projected number of children 0—6 months in 2014	5,08,596	7,23,247	7,48,964	9,31,051
Projected number of children 6—12 months in 2014	5,08,596	7,23,247	7,48,964	9,31,051
Projected number of children 12—23 months in 2014	11,85,172	14,59,968	15,35,093	20,20,234
Projected number of children 6—23 months in 2014	16,93,768	21,83,214	22,84,058	29,51,285
Projected number of children 6—36 months in 2014	28,75,948	38,32,248	38,91,453	49,31,878
Projected number of children 12—36 months in 2014	23,67,352	31,09,001	31,42,489	40,00,827
Projected number of children 6—59 months in 2014	52,71,818	70,58,741	71,86,622	88,87,290
Projected number of 11—18 year old girls in 2014	47,23,503	62,81,299	64,25,900	83,24,592
Estimated Proportion of Women 18—50 years working in government sector (derived from NSS Data)	0.0033	0.0032	0.0022	0.0038
NFHS-3 Data				
Percent of children U5 with HAZ <-2	51.7	43.7	50.0	46.3
Percent of children U5 with WAZ <-2	44.6	39.9	60.0	37.0
Weighted percent of children 6—36 months with WAZ <-3	16.3	15.3	27.3	11.9
Percent of children U5 with WHZ <-2	18.7	20.4	35.0	16.5
Percent of children U5 with WHZ <-3	5.8	7.3	12.6	5.2

TABLE A4 TARGET POPULATION AND MULTIPLIERS FOR SOUTHERN STATES

Target population and multipliers	Southern States			
	Karnataka	Kerala	Tamil Nadu	Andhra Pradesh
Crude birthrate	19.2	14.8	15.9	17.9
Derived number of live births per year, in 2011	11,76,487	4,94,138	11,49,645	15,11,761
Decadal growth rate	15.67	4.86	15.6	11.1
Derived average annual growth rate (%)	1.57%	0.49%	1.56%	1.11%
2014 Projections (based on 2011 Census data)				
Projected total population in 2014	6,40,49,725	3,38,76,839	7,55,68,002	8,75,16,306
Projected number of children under 5 years in 2014	52,87,702	24,89,032	55,29,618	64,96,379
Projected number of live births in 2014	12,32,665	5,01,377	12,04,292	15,62,664
Projected number of children 0—6 months in 2014	4,89,114	2,44,704	5,26,371	6,27,876
Projected number of children 6—12 months in 2014	4,89,114	2,44,704	5,26,371	6,27,876
Projected number of children 12—23 months in 2014	10,66,268	5,07,685	11,29,988	13,02,762
Projected number of children 6—23 months in 2014	15,55,382	7,52,389	16,56,359	19,30,638
Projected number of children 6—36 months in 2014	26,14,112	12,42,314	27,59,986	31,51,993
Projected number of children 12—36 months in 2014	21,24,998	9,97,610	22,33,616	25,24,117
Projected number of children 6—59 months in 2014	47,98,589	22,44,328	50,03,248	58,68,503
Projected number of 11—18 year old girls in 2014	46,31,313	21,62,468	49,88,099	64,94,251
Estimated Proportion of Women 18-50 years working in government sector (derived from NSS data)	0.0032	0.0078	0.004	0.0048
NFHS-3 Data				
Percent of children U5 with HAZ <-2	43.7	24.5	30.9	42.7
Percent of children U5 with WAZ <-2	37.6	22.9	29.8	32.5
Weighted percent of children 6—36 months with WAZ <-3	12.8	4.7	6.4	9.9
Percent of children U5 with WHZ <-2	17.6	15.9	22.2	12.2
Percent of children U5 with WHZ <-3	5.9	4.1	8.9	3.5

TABLE A5 TARGET POPULATION AND MULTIPLIERS FOR ISLANDS AND UNION TERRITORIES

	Islands and Union Territories							
Target population and multipliers	**Andaman & Nicobar Islands**	**Puducherry**	**NCT of Delhi**	**Chandigarh**	**Dadra & Nagar Haveli**	**Daman & Diu**	**Goa**	**Lakshadweep**
Crude birthrate	15.6	16.7	17.8	15.6	26.6	18.8	13.2	14.3
Derived number of live births per year, in 2011	5,927	20,783	2,98,599	16,453	9,120	4,567	19,242	921
Decadal growth rate	6.68	27.72	20.96	17.1	55.5	53.54	8.17	6.23
Derived average annual growth rate (%)	0.67%	2.77%	2.10%	1.71%	5.55%	5.35%	0.82%	0.62%
2014 Projections (based on 2011 Census data)								
Projected total population in 2014	3,87,609	13,50,849	1,78,28,913	11,09,722	4,03,165	2,84,054	14,93,744	65,641
Projected number of children under 5 years in 2014	29,334	1,01,980	14,69,883	86,125	42,993	22,403	1,03,704	5,147
Projected number of live births in 2014	6,047	22,559	3,17,772	17,312	10,724	5,340	19,717	939
Projected number of children 0—6 months in 2014	2,743	9,763	1,35,525	8,276	3,642	1,861	9,755	568
Projected number of children 6—12 months in 2014	2,743	9,763	1,35,525	8,276	3,642	1,861	9,755	568
Projected number of children 12—23 months in 2014	6,118	21,993	2,89,090	16,567	8,756	4,513	21,704	1,017
Projected number of children 6—23 months in 2014	8,861	31,756	4,24,615	24,843	12,398	6,374	31,459	1,585
Projected number of children 6—36 months in 2014	14,813	51,975	7,24,364	42,072	21,463	11,103	52,328	2,539
Projected number of children 12—36 months in 2014	12,070	42,211	5,88,839	33,795	17,821	9,242	42,574	1,971
Projected number of children 6—59 months in 2014	26,591	92,217	13,34,358	77,849	39,351	20,542	93,949	4,579
Projected number of 11—18 year old girls in 2014	26,061	87,154	12,69,886	70,488	27,438	14,609	86,415	4,881
Estimated Proportion of Women 18—50 years working in government sector (derived from NSS Data)	0.0202	0.0061	0.0087	0.0091	0.0052	0.0089	0.013	0.0153
NFHS-3 Data								
Percent of children U5 with HAZ <-2	48.0	48.0	42.2	48.0	48.0	48.0	25.6	48.0
Percent of children U5 with WAZ <-2	42.5	42.5	26.1	42.5	42.5	42.5	25.0	42.5
Weighted % of children 6—36 months with WAZ <-3	16.6	16.6	8.7	16.6	16.6	16.6	25.0	16.6
Percent of children U5 with WHZ <-2	19.8	19.8	15.4	19.8	19.8	19.8	14.1	19.8
Percent of children U5 with WHZ <-3	6.4	6.4	7.0	6.4	6.4	6.4	5.6	6.4

TABLE A6 TARGET POPULATION AND MULTIPLIERS FOR NORTH EASTERN STATES

	North Eastern States							
Target population and multipliers	**Arunachal Pradesh**	**Manipur**	**Meghalaya**	**Mizoram**	**Nagaland**	**Sikkim**	**Tripura**	**Assam**
Crude birthrate	20.5	14.9	24.5	17.1	16.8	17.8	14.9	23.2
Derived number of live births per year, in 2011	28,344	40,554	72,618	18,656	33,274	10,817	54,698	7,21,951
Decadal growth rate	25.92	18.65	27.82	22.78	-0.47	12.36	14.75	16.93
Derived average annual growth rate (%)	2.59%	1.87%	2.78%	2.28%	-0.05%	1.24%	1.48%	1.69%
2014 Projections (based on 2011 Census data)								
Projected total population in 2014	14,92,934	28,76,896	32,18,329	11,67,285	19,77,811	6,30,501	38,35,883	3,27,79,312
Projected number of children under 5 years in 2014	1,54,280	2,45,255	4,41,003	1,29,708	1,96,984	43,925	3,37,051	33,78,791
Projected number of live births in 2014	30,605	42,866	78,849	19,961	33,227	11,223	57,155	7,59,243
Projected number of children 0–6 months in 2014	12,541	21,727	44,134	12,785	16,708	3,968	29,401	2,88,600
Projected number of children 6–12 months in 2014	12,541	21,727	44,134	12,785	16,708	3,968	29,401	2,88,600
Projected number of children 12–23 months in 2014	32,545	56,628	93,664	30,755	40,086	8,531	66,987	6,58,500
Projected number of children 6–23 months in 2014	45,086	78,355	1,37,798	43,539	56,795	12,499	96,388	9,47,100
Projected number of children 6–36 months in 2014	76,325	1,24,688	2,23,271	67,779	96,911	21,038	1,64,319	16,51,244
Projected number of children 12–36 months in 2014	63,783	1,02,961	1,79,137	54,994	80,203	17,070	1,34,918	13,62,644
Projected number of children 6–59 months in 2014	1,41,738	2,23,527	3,96,869	1,16,923	1,80,276	39,957	3,07,650	30,90,191
Projected number of 11–18 year old girls in 2014	1,44,651	2,20,889	3,04,531	94,907	1,85,606	54,969	2,91,172	26,52,425
Estimated Proportion of Women 18–50 years working in government sector (derived from NSS Data)	0.0038	0.0035	0.0154	0.0139	0.0077	0.0124	0.0043	0.0025
NFHS-3 Data								
Percent of children U5 with HAZ <-2	43.3	35.6	55.1	39.8	38.8	38.3	35.7	46.5
Percent of children U5 with WAZ <-2	32.5	22.1	48.8	19.9	25.2	19.7	39.6	36.4
Weighted percent of children 6–36 months with WAZ <-3	11.1	4.7	27.7	5.4	7.1	4.9	15.7	11.4
Percent of children U5 with WHZ <-2	15.3	9.0	30.7	9.0	13.3	9.7	24.6	13.7
Percent of children U5 with WHZ <-3	6.1	2.1	19.9	3.5	5.2	3.3	8.6	4.0

TABLE A7 COST ESTIMATES FOR SUN INTERVENTIONS IN 2014 - I

	Total annual cost of implementing core SUN interventions at full coverage in northern India				
	Jammu & Kashmir	Himachal Pradesh	Uttarakhand (Uttaranchal)	Punjab	Haryana
	US$ million (1US$=62INR)				
Community nutrition programs for behavior change communication	11.38	4.25	7.34	16.67	18.80
Vitamin A supplementation	1.64	0.62	1.07	2.40	2.71
Zinc supplementation	0.05	0.03	0.04	0.03	0.09
Multiple micronutrient powders	0.48	0.02	0.11	0.63	0.23
Deworming	0.76	0.28	0.49	1.11	1.25
Iron-folic acid (IFA) supplements	0.49	0.24	0.41	0.96	1.20
Iron fortification of staple foods	2.69	1.42	2.14	5.77	5.38
Salt iodization	0.67	0.36	0.54	1.44	1.34
Treatment of severe acute malnutrition (SAM) using a community-based management of acute malnutrition (CMAM)	9.65	5.26	7.53	6.73	18.07
Complementary food for prevention or treatment of moderate malnutrition	15.81	8.40	12.65	24.80	34.78
Total	43.63	20.88	32.32	60.56	83.85
	INR crore				
Community nutrition programs for behavior change communication	70.58	26.33	45.53	103.35	116.55
Vitamin A supplementation	10.19	3.82	6.60	14.91	16.81
Zinc supplementation	0.30	0.16	0.23	0.21	0.56
Multiple micronutrient powders	2.96	0.15	0.70	3.93	1.43
Deworming	4.71	1.76	3.04	6.89	7.77
Iron-folic acid (IFA) supplements	3.05	1.49	2.56	5.95	7.43
Iron fortification of staple foods	16.69	8.83	13.28	35.79	33.35
Salt iodization	4.17	2.21	3.32	8.95	8.34
Treatment of severe acute malnutrition (SAM) using a community-based management of acute malnutrition (CMAM)	59.81	32.59	46.67	41.74	112.04
Complementary food for prevention or treatment of moderate malnutrition	98.04	52.09	78.45	153.74	215.63
Total	270.50	129.43	200.38	375.45	519.89

TABLE A8 COST ESTIMATES FOR SUN INTERVENTIONS IN 2014 - II

	Total annual cost of implementing the core SUN interventions at full coverage in northern and eastern India				
	Uttar Pradesh	Bihar	Jharkhand	West Bengal	Orissa (Odisha)
	US$ million (1US$=62INR)				
Community nutrition programs for behavior change communication	162.22	103.12	29.24	57.33	28.56
Vitamin A supplementation	23.73	15.20	4.28	8.37	4.15
Zinc supplementation	0.81	0.84	0.34	0.25	0.14
Multiple micronutrient powders	0.00	0.00	0.02	0.83	0.41
Deworming	10.81	6.87	1.95	3.82	1.90
Iron-folic acid (IFA) supplements	11.97	6.28	1.78	3.19	1.79
Iron fortification of staple foods	42.37	22.36	7.05	19.04	8.75
Salt iodization	10.59	5.59	1.76	4.76	2.19
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	161.34	168.18	67.29	50.22	28.78
Complementary food for prevention or treatment of moderate malnutrition	332.07	204.31	54.11	96.96	52.99
Total	755.91	532.76	167.81	244.78	129.67
	INR crore				
Community nutrition programs for behavior change communication	1,005.78	639.35	181.27	355.44	177.08
Vitamin A supplementation	147.10	94.22	26.52	51.90	25.73
Zinc supplementation	5.00	5.21	2.09	1.56	0.89
Multiple micronutrient powders	0.00	0.00	0.09	5.13	2.57
Deworming	67.05	42.62	12.08	23.70	11.81
Iron-folic acid (IFA) supplements	74.24	38.96	11.06	19.81	11.12
Iron fortification of staple foods	262.70	138.64	43.68	118.07	54.23
Salt iodization	65.67	34.66	10.92	29.52	13.56
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	1,000.29	1,042.72	417.22	311.38	178.41
Complementary food for prevention or treatment of moderate malnutrition	2,058.81	1,266.70	335.49	601.14	328.55
Total	4,686.64	3,303.08	1,040.42	1,517.63	803.94

TABLE A9 COST ESTIMATES FOR SUN INTERVENTIONS IN 2014 - III

	Total annual cost of implementing the core SUN interventions at full coverage in the north-eastern states							
	Assam	Meghalaya	Tripura	Manipur	Nagaland	Arunachal Pradesh	Mizoram	Sikkim
	US$ million (1US$=62INR)							
Community nutrition programs for behavior change communication	25.34	3.31	2.53	1.84	1.48	1.16	0.97	0.33
Vitamin A supplementation	3.71	0.48	0.37	0.27	0.22	0.17	0.14	0.05
Zinc supplementation	0.10	0.06	0.02	0.00	0.01	0.01	0.00	0.00
Multiple micronutrient powders	0.24	0.00	0.10	0.08	0.05	0.02	0.03	0.01
Deworming	1.69	0.22	0.17	0.12	0.10	0.08	0.06	0.02
Iron-folic acid (IFA) supplements	1.52	0.16	0.11	0.09	0.07	0.06	0.04	0.02
Iron fortification of staple foods	6.56	0.64	0.77	0.58	0.40	0.30	0.23	0.13
Salt iodization	1.64	0.16	0.19	0.14	0.10	0.07	0.06	0.03
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	19.78	12.64	4.23	0.75	1.50	1.38	0.65	0.21
Complementary food for prevention or treatment of moderate malnutrition	45.01	7.76	3.52	2.85	2.25	2.00	1.77	0.49
Total	105.58	25.43	12.01	6.72	6.16	5.25	3.97	1.29
	INR crore							
Community nutrition programs for behavior change communication	157.11	20.51	15.67	11.40	9.16	7.17	6.03	2.04
Vitamin A supplementation	22.99	2.95	2.29	1.66	1.34	1.05	0.87	0.30
Zinc supplementation	0.61	0.39	0.13	0.02	0.05	0.04	0.02	0.01
Multiple micronutrient powders	1.48	0.00	0.62	0.50	0.28	0.13	0.20	0.07
Deworming	10.47	1.37	1.04	0.76	0.61	0.48	0.40	0.14
Iron-folic acid (IFA) supplements	9.41	0.98	0.71	0.53	0.41	0.38	0.25	0.14
Iron fortification of staple foods	40.65	3.99	4.76	3.57	2.45	1.85	1.45	0.78
Salt iodization	10.16	1.00	1.19	0.89	0.61	0.46	0.36	0.20
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	122.62	78.35	26.25	4.66	9.30	8.58	4.06	1.31
Complementary food for prevention or treatment of moderate malnutrition	279.06	48.11	21.80	17.67	13.96	12.37	10.98	3.03
Total	654.57	157.64	74.46	41.68	38.18	32.53	24.62	8.01

TABLE A10 COST ESTIMATES FOR SUN INTERVENTIONS IN 2014 - IV

	Total annual cost of implementing the core SUN interventions at full coverage in western and central India				
	Gujarat	Rajasthan	Maharashtra	Madhya Pradesh	Chhattisgarh
	US$ million (1US$=62INR)				
Community nutrition programs for behavior change communication	43.35	58.36	73.64	59.52	20.38
Vitamin A supplementation	6.33	8.47	10.66	8.62	2.94
Zinc supplementation	0.24	0.41	0.37	0.72	0.11
Multiple micronutrient powders	0.00	0.99	0.79	0.00	0.00
Deworming	2.89	3.89	4.91	3.97	1.36
Iron-folic acid (IFA) supplements	2.79	3.90	4.03	4.21	1.38
Iron fortification of staple foods	12.78	14.63	23.57	15.42	5.46
Salt iodization	3.20	3.66	5.89	3.86	1.37
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	48.92	82.45	73.94	144.88	21.96
Complementary food for prevention or treatment of moderate malnutrition	89.49	97.51	139.65	116.72	41.48
Total	210.00	274.26	337.45	357.92	96.44
	INR crore				
Community nutrition programs for behavior change communication	268.79	361.86	456.55	369.00	126.35
Vitamin A supplementation	39.22	52.52	66.12	53.47	18.23
Zinc supplementation	1.52	2.56	2.29	4.49	0.68
Multiple micronutrient powders	0.00	6.14	4.87	0.00	0.00
Deworming	17.92	24.12	30.44	24.60	8.42
Iron-folic acid (IFA) supplements	17.27	24.18	24.98	26.10	8.56
Iron fortification of staple foods	79.26	90.68	146.13	95.62	33.86
Salt iodization	19.82	22.67	36.53	23.90	8.47
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	303.32	511.17	458.44	898.27	136.15
Complementary food for prevention or treatment of moderate malnutrition	554.86	604.53	865.83	723.64	257.18
Total	1,301.98	1,700.43	2,092.21	2,219.09	597.91

TABLE A11 COST ESTIMATES FOR SUN INTERVENTIONS IN 2014 - V

	Total annual cost of implementing the core SUN interventions at full coverage in southern India			
	Kerala	**Karnataka**	**Andhra Pradesh**	**Tamil Nadu**
	US$ million (1US$=62INR)			
Community nutrition programs for behavior change communication	18.67	39.66	48.72	41.47
Vitamin A supplementation	2.69	5.76	7.04	6.00
Zinc supplementation	0.07	0.23	0.16	0.36
Multiple micronutrient powders	1.38	0.71	1.01	2.28
Deworming	1.24	2.64	3.25	2.76
Iron-folic acid (IFA) supplements	1.00	2.47	3.13	2.41
Iron fortification of staple foods	6.78	12.81	17.50	15.11
Salt iodization	1.69	3.20	4.38	3.78
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	14.72	45.30	32.86	71.25
Complementary food for prevention or treatment of moderate malnutrition	18.84	69.47	84.25	52.31
Total	67.09	182.23	202.31	197.73
	INR crore			
Community nutrition programs for behavior change communication	115.74	245.88	302.08	257.13
Vitamin A supplementation	16.70	35.70	43.66	37.22
Zinc supplementation	0.46	1.40	1.02	2.21
Multiple micronutrient powders	8.56	4.37	6.29	14.12
Deworming	7.72	16.39	20.14	17.14
Iron-folic acid (IFA) supplements	6.22	15.29	19.38	14.93
Iron fortification of staple foods	42.01	79.42	108.52	93.70
Salt iodization	10.50	19.86	27.13	23.43
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	91.28	280.85	203.75	441.73
Complementary food for prevention or treatment of moderate malnutrition	116.80	430.69	522.36	324.31
Total	415.98	1,129.85	1,254.34	1,225.92

TABLE A12 COST ESTIMATES FOR SUN INTERVENTIONS IN 2014 - VI

	Total annual cost of implementing the core SUN interventions at full coverage in India's Union Territories							
	NCT of Delhi	Andaman & Nicobar Islands	Chandigarh	Dadra & Nagar Haveli	Daman & Diu	Goa	Lakshadweep	Puducherry
	US$ million (1US$=62INR)							
Community nutrition programs for behavior change communication	11.02	0.22	0.65	0.32	0.17	0.78	0.04	0.76
Vitamin A supplementation	1.60	0.03	0.09	0.05	0.02	0.11	0.01	0.11
Zinc supplementation	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multiple micronutrient powders	0.24	0.00	0.00	0.00	0.00	0.06	0.00	0.00
Deworming	0.73	0.01	0.04	0.02	0.01	0.05	0.00	0.05
Iron-folic acid (IFA) supplements	0.64	0.01	0.03	0.02	0.01	0.04	0.00	0.05
Iron fortification of staple foods	3.57	0.08	0.22	0.08	0.06	0.30	0.01	0.27
Salt iodization	0.89	0.02	0.06	0.02	0.01	0.07	0.00	0.07
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	14.94	0.27	0.80	0.40	0.21	0.84	0.05	0.94
Complementary food for prevention or treatment of moderate malnutrition	18.31	0.43	1.22	0.61	0.31	0.82	0.08	1.56
Total	52.02	1.09	3.12	1.53	0.81	3.08	0.19	3.82
	INR crore							
Community nutrition programs for behavior change communication	68.35	1.36	4.00	2.00	1.04	4.82	0.24	4.74
Vitamin A supplementation	9.93	0.20	0.58	0.29	0.15	0.70	0.03	0.69
Zinc supplementation	0.46	0.01	0.02	0.01	0.01	0.03	0.00	0.03
Multiple micronutrient powders	1.48	0.01	0.02	0.01	0.01	0.34	0.00	0.03
Deworming	4.56	0.09	0.27	0.13	0.07	0.32	0.02	0.32
Iron-folic acid (IFA) supplements	3.94	0.07	0.21	0.13	0.07	0.24	0.01	0.28
Iron fortification of staple foods	22.11	0.48	1.38	0.50	0.35	1.85	0.08	1.68
Salt iodization	5.53	0.12	0.34	0.12	0.09	0.46	0.02	0.42
Treatment of severe acute malnutrition (SAM) using a Community-based Management of Acute Malnutrition (CMAM)	92.66	1.69	4.94	2.50	1.30	5.22	0.29	5.85
Complementary food for prevention or treatment of moderate malnutrition	113.54	2.70	7.56	3.77	1.94	5.10	0.48	9.66
Total	322.55	6.73	19.33	9.48	5.03	19.09	1.18	23.69

TABLE A13 COST ESTIMATES FOR *INDIA PLUS* INTERVENTIONS IN 2014 - I

	Total annual cost of implementing the core *India Plus* interventions at full coverage in northern India				
	Jammu & Kashmir	**Himachal Pradesh**	**Uttarakhand (Uttaranchal)**	**Punjab**	**Haryana**
			US$ million (1US$=62INR)		
Counseling during pregnancy	0.43	0.21	0.36	0.84	1.05
Counseling for BF (0—6 months)	0.25	0.09	0.15	0.37	0.41
Counseling for CF and WASH (6—12 months)	2.14	0.77	1.33	3.18	3.59
Counseling for CF and WASH (12—24 months)	0.82	0.33	0.52	1.24	1.39
Food supplements (6—12 months)	2.14	0.77	1.33	3.18	3.59
Food supplements (12—36 months)	17.45	6.67	11.12	25.49	29.05
Food supplements (pregnancy)	4.16	2.04	3.50	8.12	10.14
Food supplements (lactation)	2.50	0.90	1.55	3.70	4.19
Food supplements (children 6—36 months with WAZ <-3)	0.67	0.54	0.87	1.06	2.07
IFA for pregnant and lactating women	0.20	0.09	0.15	0.36	0.43
IFA + deworming for adolescent girls	0.44	0.20	0.37	0.80	0.81
Iron supplements for children 6—59 months	0.86	0.32	0.56	1.26	1.42
Vitamin A supplements (6—59 months)	0.10	0.04	0.06	0.14	0.16
Zinc for diarrhoea treatment in children 2—59 months	0.37	0.14	0.24	0.54	0.61
Deworming for children 12—59 months	0.28	0.11	0.18	0.41	0.46
SAM treatment for children 6—59 months with WHZ <-3	1.94	1.06	1.52	1.36	3.64
Insecticide treated nets for pregnant women	0.00	0.00	0.00	0.00	0.00
ORS for treatment of diarrhoea	0.53	0.20	0.35	0.78	0.88
Maternity benefits for breastfeeding	25.22	12.31	21.27	49.27	61.63
Total	60.52	26.78	45.43	102.09	125.54
			INR crore		
Counseling during pregnancy	2.68	1.32	2.26	5.24	6.54
Counseling for BF (0-6 months)	1.53	0.55	0.95	2.26	2.56
Counseling for CF and WASH (6—12 months)	13.29	4.76	8.23	19.69	22.29
Counseling for CF and WASH (12—24 months)	5.11	2.05	3.25	7.68	8.63
Food supplements (6—12 months)	13.29	4.76	8.23	19.69	22.29
Food supplements (12—36 months)	108.20	41.37	68.93	158.06	180.10
Food supplements (pregnancy)	25.80	12.65	21.70	50.36	62.87
Food supplements (lactation)	15.50	5.55	9.60	22.96	25.99
Food supplements (children 6—36 months with WAZ <-3)	4.17	3.36	5.42	6.55	12.84
IFA for pregnant and lactating women	1.24	0.55	0.94	2.21	2.68
IFA + deworming for adolescent girls	2.71	1.24	2.27	4.95	5.04
Iron supplements for children 6—59 months	5.35	2.00	3.47	7.83	8.82
Vitamin A supplements (6—59 months)	0.59	0.22	0.39	0.87	0.98
Zinc for diarrhoea treatment in children 2—59 months	2.27	0.85	1.47	3.33	3.75
Deworming for children 12—59 months	1.74	0.66	1.14	2.55	2.87
SAM treatment for children 6—59 months with WHZ <-3	12.04	6.56	9.40	8.40	22.56
Insecticide treated nets for pregnant women	0.00	0.00	0.00	0.00	0.00
ORS for treatment of diarrhoea	3.31	1.24	2.15	4.85	5.46
Maternity benefits for breastfeeding	156.38	76.35	131.90	305.47	382.11
Total	375.24	166.06	281.68	632.93	778.36

TABLE A14 COST ESTIMATES FOR *INDIA PLUS* INTERVENTIONS IN 2014 - II

	Total annual cost of implementing the core *India Plus* interventions at full coverage in northern and eastern India				
	Uttar Pradesh	**Bihar**	**Jharkhand**	**West Bengal**	**Orissa (Odisha)**
			US$ million (1US$=62INR)		
Counseling during pregnancy	10.54	5.53	1.57	2.81	1.58
Counseling for BF (0—6 months)	3.10	1.81	0.56	1.12	0.58
Counseling for CF and WASH (6—12 months)	26.98	15.76	4.85	9.71	5.08
Counseling for CF and WASH (12—24 months)	10.81	7.03	2.04	4.08	2.25
Food supplements (6—12 months)	26.98	15.76	4.85	9.71	5.08
Food supplements (12—36 months)	241.29	160.49	44.73	87.96	44.72
Food supplements (pregnancy)	101.36	53.19	15.09	27.04	15.18
Food supplements (lactation)	31.45	18.37	5.65	11.32	5.92
Food supplements (children 6—36 months with WAZ <-3)	19.75	18.67	5.52	4.71	2.92
IFA for pregnant and lactating women	4.00	2.16	0.63	1.16	0.64
IFA + deworming for adolescent girls	7.81	3.58	1.18	2.93	1.38
Iron supplements for children 6—59 months	12.46	7.98	2.25	4.39	2.18
Vitamin A supplements (6—59 months)	1.38	0.89	0.25	0.49	0.24
Zinc for diarrhoea treatment in children 2—59 months	5.25	3.35	0.95	1.85	0.92
Deworming for children 12—59 months	4.12	2.66	0.74	1.45	0.72
SAM treatment for children 6—59 months with WHZ <-3	32.48	33.86	13.55	10.11	5.79
Insecticide treated nets for pregnant women	0.00	0.00	4.32	7.73	4.34
ORS for treatment of diarrhoea	7.71	4.94	1.39	2.72	1.35
Maternity benefits for breastfeeding	616.94	323.98	91.91	164.23	92.20
Total	1,164.42	679.98	202.02	355.53	193.06
			INR crore		
Counseling during pregnancy	65.33	34.28	9.73	17.43	9.78
Counseling for BF (0—6 months)	19.24	11.24	3.46	6.92	3.62
Counseling for CF and WASH (6—12 months)	167.26	97.69	30.07	60.19	31.48
Counseling for CF and WASH (12—24 months)	67.05	43.58	12.66	25.32	13.93
Food supplements (6—12 months)	167.26	97.69	30.07	60.19	31.48
Food supplements (12—36 months)	1,496.01	995.03	277.30	545.34	277.27
Food supplements (pregnancy)	628.44	329.79	93.59	167.68	94.10
Food supplements (lactation)	195.02	113.91	35.06	70.18	36.71
Food supplements (children 6—36 months with WAZ <-3)	122.45	115.72	34.25	29.20	18.12
IFA for pregnant and lactating women	24.81	13.37	3.88	7.17	3.94
IFA + deworming for adolescent girls	48.41	22.17	7.30	18.19	8.56
Iron supplements for children 6—59 months	77.23	49.47	13.92	27.25	13.51
Vitamin A supplements (6—59 months)	8.58	5.50	1.55	3.03	1.50
Zinc for diarrhoea treatment in children 2—59 months	32.55	20.74	5.87	11.50	5.72
Deworming for children 12—59 months	25.55	16.51	4.61	8.99	4.43
SAM treatment for children 6—59 months with WHZ <-3	201.39	209.94	84.00	62.69	35.92
Insecticide treated nets for pregnant women	0.00	0.00	26.76	47.94	26.90
ORS for treatment of diarrhoea	47.81	30.62	8.62	16.87	8.36
Maternity benefits for breastfeeding	3,825.03	2,008.65	569.85	1,018.21	571.64
Total	7,219.39	4,215.88	1,252.52	2,204.26	1,196.98

TABLE A15 COST ESTIMATES FOR *INDIA PLUS* INTERVENTIONS IN 2014 - III

	Total annual cost of implementing the core *India Plus* interventions at full coverage in the north-eastern states							
	Assam	**Meghalaya**	**Tripura**	**Manipur**	**Nagaland**	**Arunachal Pradesh**	**Mizoram**	**Sikkim**
	US$ million (1US$=62INR)							
Counseling during pregnancy	1.34	0.14	0.10	0.08	0.06	0.05	0.04	0.02
Counseling for BF (0—6 months)	0.48	0.07	0.05	0.04	0.03	0.02	0.02	0.01
Counseling for CF and WASH (6—12 months)	4.19	0.64	0.43	0.32	0.24	0.18	0.19	0.06
Counseling for CF and WASH (12—24 months)	1.84	0.26	0.19	0.16	0.11	0.09	0.09	0.02
Food supplements (6—12 months)	4.19	0.64	0.43	0.32	0.24	0.18	0.19	0.06
Food supplements (12—36 months)	39.56	5.20	3.92	2.99	2.33	1.85	1.60	0.50
Food supplements (pregnancy)	12.85	1.33	0.97	0.73	0.56	0.52	0.34	0.19
Food supplements (lactation)	4.89	0.75	0.50	0.37	0.28	0.21	0.22	0.07
Food supplements (children 6—36 months with WAZ <-3)	2.20	0.63	0.28	0.07	0.07	0.09	0.04	0.01
IFA for pregnant and lactating women	0.53	0.06	0.04	0.03	0.03	0.02	0.02	0.01
IFA + deworming for adolescent girls	1.06	0.12	0.12	0.09	0.07	0.06	0.04	0.02
Iron supplements for children 6—59 months	1.95	0.25	0.19	0.14	0.11	0.09	0.07	0.03
Vitamin A supplements (6—59 months)	0.22	0.03	0.02	0.02	0.01	0.01	0.01	0.00
Zinc for diarrhoea treatment in children 2—59 months	0.82	0.11	0.08	0.06	0.05	0.04	0.03	0.01
Deworming for children 12—59 months	0.64	0.08	0.06	0.05	0.04	0.03	0.02	0.01
SAM treatment for children 6—59 months with WHZ <-3	3.98	2.54	0.85	0.15	0.30	0.28	0.13	0.04
Insecticide treated nets for pregnant women	3.67	0.38	0.28	0.21	0.16	0.15	0.10	0.05
ORS for treatment of diarrhoea	1.21	0.15	0.12	0.09	0.07	0.06	0.05	0.02
Maternity benefits for breastfeeding	78.17	8.01	5.87	4.41	3.40	3.15	2.03	1.14
Total	163.80	21.42	14.50	10.29	8.18	7.08	5.20	2.26
	INR crore							
Counseling during pregnancy	8.28	0.86	0.62	0.47	0.36	0.33	0.22	0.12
Counseling for BF (0—6 months)	2.99	0.46	0.30	0.22	0.17	0.13	0.13	0.04
Counseling for CF and WASH (6—12 months)	25.98	3.97	2.65	1.96	1.50	1.13	1.15	0.36
Counseling for CF and WASH (12—24 months)	11.43	1.63	1.16	0.98	0.70	0.56	0.53	0.15
Food supplements (6—12 months)	25.98	3.97	2.65	1.96	1.50	1.13	1.15	0.36
Food supplements (12—36 months)	245.26	32.24	24.28	18.53	14.44	11.48	9.90	3.07
Food supplements (pregnancy)	79.69	8.28	6.00	4.50	3.49	3.21	2.10	1.18
Food supplements (lactation)	30.29	4.63	3.09	2.28	1.75	1.32	1.34	0.42
Food supplements (children 6—36 months with WAZ <-3)	13.64	3.93	1.75	0.41	0.43	0.57	0.24	0.07
IFA for pregnant and lactating women	3.31	0.39	0.27	0.20	0.16	0.14	0.10	0.05
IFA + deworming for adolescent girls	6.58	0.76	0.72	0.55	0.46	0.36	0.24	0.14
Iron supplements for children 6—59 months	12.07	1.55	1.20	0.87	0.70	0.55	0.46	0.16
Vitamin A supplements (6—59 months)	1.34	0.17	0.13	0.10	0.08	0.06	0.05	0.02
Zinc for diarrhoea treatment in children 2—59 months	5.09	0.66	0.51	0.37	0.30	0.23	0.19	0.07
Deworming for children 12—59 months	4.00	0.50	0.40	0.29	0.23	0.18	0.15	0.05
SAM treatment for children 6—59 months with WHZ <-3	24.69	15.77	5.28	0.94	1.87	1.73	0.82	0.26
Insecticide treated nets for pregnant women	22.78	2.37	1.72	1.29	1.00	0.92	0.60	0.34
ORS for treatment of diarrhoea	7.47	0.96	0.74	0.54	0.44	0.34	0.28	0.10
Maternity benefits for breastfeeding	484.67	49.68	36.42	27.34	21.10	19.51	12.60	7.09
Total	1,015.55	132.78	89.90	63.79	50.69	43.90	32.24	4.02

TABLE A16 COST ESTIMATES FOR *INDIA PLUS* INTERVENTIONS IN 2014 - IV

	Total annual cost of implementing the core *India Plus* interventions at full coverage in western and central India				
	Gujarat	**Rajasthan**	**Maharashtra**	**Madhya Pradesh**	**Chhattisgarh**
			US$ million (1US$=62INR)		
Counseling during pregnancy	2.45	3.43	3.55	3.70	1.22
Counseling for BF (0—6 months)	0.85	1.21	1.55	1.25	0.44
Counseling for CF and WASH (6—12 months)	7.38	10.50	13.52	10.87	3.87
Counseling for CF and WASH (12—24 months)	3.32	4.09	5.66	4.30	1.40
Food supplements (6—12 months)	7.38	10.50	13.52	10.87	3.87
Food supplements (12—36 months)	68.72	90.25	116.14	91.23	30.20
Food supplements (pregnancy)	23.58	33.01	34.11	35.64	11.69
Food supplements (lactation)	8.61	12.24	15.76	12.68	4.51
Food supplements (children 6—36 months with WAZ <-3)	5.47	6.56	6.66	11.95	2.51
IFA for pregnant and lactating women	0.97	1.36	1.50	1.46	0.49
IFA + deworming for adolescent girls	1.89	2.51	3.33	2.57	0.93
Iron supplements for children 6—59 months	3.32	4.45	5.60	4.53	1.54
Vitamin A supplements (6—59 months)	0.37	0.49	0.62	0.50	0.17
Zinc for diarrhoea treatment in children 2—59 months	1.40	1.88	2.38	1.92	0.66
Deworming for children 12—59 months	1.10	1.46	1.83	1.48	0.50
SAM treatment for children 6—59 months with WHZ <-3	9.85	16.60	14.89	29.17	4.42
Insecticide treated nets for pregnant women	0.00	0.00	0.00	0.00	3.34
ORS for treatment of diarrhoea	2.06	2.75	3.47	2.80	0.96
Maternity benefits for breastfeeding	143.27	200.63	207.18	216.81	70.90
Total	291.99	403.94	451.26	443.74	143.62
			INR crore		
Counseling during pregnancy	15.20	21.28	21.99	22.97	7.54
Counseling for BF (0—6 months)	5.27	7.49	9.64	7.75	2.76
Counseling for CF and WASH (6—12 months)	45.79	65.11	83.82	67.42	23.98
Counseling for CF and WASH (12—24 months)	20.57	25.35	35.07	26.65	8.70
Food supplements (6—12 months)	45.79	65.11	83.82	67.42	23.98
Food supplements (12—36 months)	426.09	559.58	720.09	565.60	187.24
Food supplements (pregnancy)	146.18	204.68	211.49	220.96	72.50
Food supplements (lactation)	53.39	75.92	97.73	78.62	27.96
Food supplements (children 6—36 months with WAZ <-3)	33.91	40.68	41.29	74.11	15.57
IFA for pregnant and lactating women	6.01	8.45	9.31	9.02	3.03
IFA + deworming for adolescent girls	11.71	15.58	20.64	15.94	5.74
Iron supplements for children 6—59 months	20.59	27.57	34.71	28.07	9.57
Vitamin A supplements (6—59 months)	2.29	3.06	3.86	3.12	1.06
Zinc for diarrhoea treatment in children 2—59 months	8.69	11.68	14.73	11.91	4.07
Deworming for children 12—59 months	6.79	9.03	11.35	9.18	3.11
SAM treatment for children 6—59 months with WHZ <-3	61.07	102.92	92.30	180.85	27.41
Insecticide treated nets for pregnant women	0.00	0.00	0.00	0.00	20.73
ORS for treatment of diarrhoea	12.75	17.07	21.49	17.38	5.93
Maternity benefits for breastfeeding	888.28	1,243.89	1,284.50	1,344.21	439.59
Total	1,810.35	2,504.44	2,797.83	2,751.20	890.47

TABLE A17 COST ESTIMATES FOR *INDIA PLUS* INTERVENTIONS IN 2014 - V

	Total annual cost of implementing the core *India Plus* interventions at full coverage in southern India			
	Kerala	**Karnataka**	**Andhra Pradesh**	**Tamil Nadu**
			US$ million (1US$=62INR)	
Counseling during pregnancy	0.88	2.17	2.75	2.12
Counseling for BF (0—6 months)	0.41	0.82	1.05	0.88
Counseling for CF and WASH (6—12 months)	3.55	7.10	9.12	7.64
Counseling for CF and WASH (12—24 months)	1.42	2.99	3.65	3.16
Food supplements (6—12 months)	3.55	7.10	9.12	7.64
Food supplements (12—36 months)	28.96	61.69	73.28	64.84
Food supplements (pregnancy)	8.49	20.87	26.46	20.39
Food supplements (lactation)	4.14	8.28	10.63	8.91
Food supplements (children 6—36 months with WAZ <-3)	0.56	3.77	3.64	1.34
IFA for pregnant and lactating women	0.38	0.88	1.12	0.88
IFA + deworming for adolescent girls	0.86	1.85	2.60	2.00
Iron supplements for children 6—59 months	1.41	3.02	3.70	3.15
Vitamin A supplements (6—59 months)	0.16	0.34	0.41	0.35
Zinc for diarrhoea treatment in children 2—59 months	0.60	1.28	1.57	1.34
Deworming for children 12—59 months	0.46	0.99	1.21	1.03
SAM treatment for children 6—59 months with WHZ <-3	2.96	9.12	6.62	14.34
Insecticide treated nets for pregnant women	0.00	0.00	0.00	0.00
ORS for treatment of diarrhoea	0.88	1.87	2.29	1.95
Maternity benefits for breastfeeding	51.35	126.83	160.52	123.81
Total	111.04	260.96	319.71	265.79
			INR crore	
Counseling during pregnancy	5.47	13.45	17.05	13.14
Counseling for BF (0—6 months)	2.53	5.06	6.50	5.45
Counseling for CF and WASH (6—12 months)	22.03	44.03	56.52	47.39
Counseling for CF and WASH (12—24 months)	8.81	18.51	22.62	19.62
Food supplements (6—12 months)	22.03	44.03	56.52	47.39
Food supplements (12—36 months)	179.56	382.47	454.31	402.02
Food supplements (pregnancy)	52.63	129.39	164.03	126.41
Food supplements (lactation)	25.69	51.34	65.91	55.25
Food supplements (children 6—36 months with WAZ <-3)	3.49	23.35	22.59	8.34
IFA for pregnant and lactating women	2.36	5.44	6.93	5.47
IFA + deworming for adolescent girls	5.36	11.49	16.11	12.37
Iron supplements for children 6—59 months	8.77	18.74	22.92	19.54
Vitamin A supplements (6—59 months)	0.97	2.08	2.55	2.17
Zinc for diarrhoea treatment in children 2—59 months	3.73	7.94	9.74	8.29
Deworming for children 12—59 months	2.85	6.15	7.47	6.38
SAM treatment for children 6—59 months with WHZ <-3	18.38	56.55	41.02	88.94
Insecticide treated nets for pregnant women	0.00	0.00	0.00	0.00
ORS for treatment of diarrhoea	5.43	11.60	14.19	12.10
Maternity benefits for breastfeeding	318.36	786.34	995.25	767.62
Total	688.44	1,617.96	1,982.22	1,647.88

TABLE A18 COST ESTIMATES FOR INDIA PLUS INTERVENTIONS IN 2014 - VI

	Total annual cost of implementing the core *India Plus* interventions at full coverage in India's Union Territories							
	NCT of Delhi	Andaman & Nicobar Islands	Chandigarh	Dadra & Nagar Haveli	Daman & Diu	Goa	Lakshadweep	Puducherry
	US$ million (1US$=62INR)							
Counseling during pregnancy	0.56	0.01	0.03	0.02	0.01	0.03	0.00	0.04
Counseling for BF (0—6 months)	0.23	0.00	0.01	0.01	0.00	0.02	0.00	0.02
Counseling for CF and WASH (6—12 months)	1.97	0.04	0.12	0.05	0.03	0.14	0.01	0.14
Counseling for CF and WASH (12—24 months)	0.81	0.02	0.05	0.02	0.01	0.06	0.00	0.06
Food supplements (6—12 months)	1.97	0.04	0.12	0.05	0.03	0.14	0.01	0.14
Food supplements (12—36 months)	17.09	0.35	0.98	0.52	0.27	1.24	0.06	1.23
Food supplements (pregnancy)	5.38	0.10	0.29	0.18	0.09	0.33	0.02	0.38
Food supplements (lactation)	2.29	0.05	0.14	0.06	0.03	0.17	0.01	0.17
Food supplements (children 6—36 months with WAZ <-3)	0.62	0.03	0.08	0.04	0.02	0.16	0.00	0.10
IFA for pregnant and lactating women	0.23	0.00	0.01	0.01	0.00	0.02	0.00	0.02
IFA + deworming for adolescent girls	0.51	0.01	0.03	0.01	0.01	0.03	0.00	0.03
Iron supplements for children 6—59 months	0.84	0.02	0.05	0.02	0.01	0.06	0.00	0.06
Vitamin A supplements (6—59 months)	0.09	0.00	0.01	0.00	0.00	0.01	0.00	0.01
Zinc for diarrhea treatment in children 2—59 months	0.36	0.01	0.02	0.01	0.01	0.03	0.00	0.02
Deworming for children 12—59 months	0.28	0.01	0.02	0.01	0.00	0.02	0.00	0.02
SAM treatment for children 6—59 months with WHZ <-3	3.01	0.05	0.16	0.08	0.04	0.17	0.01	0.19
Insecticide treated nets for pregnant women	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
ORS for treatment of diarrhea	0.52	0.01	0.03	0.02	0.01	0.04	0.00	0.04
Maternity benefits for breastfeeding	32.52	0.61	1.77	1.10	0.55	2.01	0.10	2.31
Total	69.27	1.39	3.92	2.22	1.12	4.66	0.22	4.97
	INR crore							
Counseling during pregnancy	3.47	0.07	0.19	0.12	0.06	0.22	0.01	0.25
Counseling for BF (0—6 months)	1.40	0.03	0.09	0.04	0.02	0.10	0.01	0.10
Counseling for CF and WASH (6—12 months)	12.20	0.25	0.75	0.33	0.17	0.88	0.05	0.88
Counseling for CF and WASH (12—24 months)	5.02	0.11	0.29	0.15	0.08	0.38	0.02	0.38
Food supplements (6—12 months)	12.20	0.25	0.75	0.33	0.17	0.88	0.05	0.88
Food supplements (12—36 months)	105.98	2.17	6.08	3.21	1.66	7.66	0.35	7.60
Food supplements (pregnancy)	33.36	0.63	1.82	1.13	0.56	2.07	0.10	2.37
Food supplements (lactation)	14.23	0.29	0.87	0.38	0.20	1.02	0.06	1.02
Food supplements (children 6—36 months with WAZ <-3)	3.87	0.18	0.50	0.26	0.13	0.99	0.03	0.62
IFA for pregnant and lactating women	1.43	0.03	0.08	0.05	0.02	0.09	0.00	0.10
IFA + deworming for adolescent girls	3.15	0.06	0.17	0.07	0.04	0.21	0.01	0.22
Iron supplements for children 6—59 months	5.21	0.10	0.30	0.15	0.08	0.37	0.02	0.36
Vitamin A supplements (6—59 months)	0.58	0.01	0.03	0.02	0.01	0.04	0.00	0.04
Zinc for diarrhea treatment in children 2—59 months	2.21	0.04	0.13	0.06	0.03	0.16	0.01	0.15
Deworming for children 12—59 months	1.71	0.03	0.10	0.05	0.03	0.12	0.01	0.12
SAM treatment for children 6—59 months with WHZ <-3	18.66	0.34	1.00	0.50	0.26	1.05	0.06	1.18
Insecticide treated nets for pregnant women	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
ORS for treatment of diarrhea	3.23	0.06	0.19	0.10	0.05	0.23	0.01	0.22
Maternity benefits for breastfeeding	201.59	3.79	10.98	6.83	3.39	12.45	0.59	14.35
Total	429.49	8.63	24.30	13.76	6.95	28.92	1.39	30.83

TABLE A19 STATE PROFILE – UTTAR PRADESH VERSUS INDIA

State profile	Uttar Pradesh %	India %
State of services received / coverage indicators from Rapid Survey of Children 2013/2014		
Registered pregnancy	64.2	84.1
3 or more antenatal care visits (women 15-49 years)	38.6	63.4
Women who received/ purchased Iron Folic Acid (IFA)	7.6	31.2
Women who consumed IFA (>90 days)	4.3	23.6
Women who received cooked meal/take home ration during pregnancy	23.8	27.8
Visit from health worker within 2 days of delivery	19.1	51
Exclusive breast feeding (0-5 months)	62.2	64.9
Women who received cooked meal/take home ration during lactation	23.6	20.3
MCP/Immunization card 12-23 months	67.8	84.3
Fully immunized children 12-23 months	47	65.3
Dietary diversity among children 6-23 months children	15.1	19.9
Vitamin A received (children 6.59 months	26.6	45.2
Deworming received children 6.59 months	7.5	27.6
ORS only given children 0-59 months	31.7	54.4
ORS and zinc given children 0-59 months	6.9	12.6
Children who received take home rations during 6-35 months	22.8	49.2
Households practicing open defecation	57.7	45.5
Nutrition indicators from Rapid Survey of Children 2013/2014		
Children born with a low birthweight	22.5	18.6
Stunting prevalence among children under five years of age	50.4	38.7
Wasting prevalence among children under five years of age	10	15.1
Underweight prevalence among children under five years of age	34.3	29.4
Anaemia indicators from Census Clinical Anthropometry and Biometry data 2014		
Anaemia (6-59 months)	86.8	
Female	87.4	Not available
Male	86.3	
Anaemia (5-9 years)	92.4	
Female	93	Not available
Male	91.9	
Anaemia (10-17 years)	90.9	
Female	92.3	Not available
Male	89.6	
Anaemia (18-59 years)	----	
Female	91.5	Not available
Male	92.3	
Anaemia (>60 years)	---	
Female	91.4	Not available
Male	94.8	

Source: Census of India, Clinical Anthropometry and Biometry Data, Government of India and Rapid Survey of Children – India Fact sheet, Ministry of Women and Child Development.

Notes: 1. Coverage indicators are sourced from Government of India's released fact sheets.
2. Population estimates are based on author's calculations.

TABLE A20 COVERAGE AND EXPENDITURE TRENDS IN THE ICDS

State/UT	Beneficiaries for supplementary nutrition			Expenditure trends in the overall ICDS (US$ millions) (1US$=62INR)					
Year	2013			2010—11		2011—12		2012—13	
State/UT	Children (6 months - 3 years)	Children(3— 6 years)	Pregnant & lactating mothers (P&LM)	Funds released by central govt.	Expenditure reported by states	Funds released by central govt.	Expenditure reported by states	Funds released by central govt.	Expenditure reported by states
A & N Islands	9,257	4,105	3,380	0.7	1.2	1.2	1.8	0.9	1.5
Andhra Pradesh	26,35,752	16,57,530	13,29,557	84.9	172.3	149.8	240.7	177.4	228.3
Arunachal Pradesh	1,09,631	1,17,347	29,097	15.2	13.8	15.8	18.3	20.0	17.2
Assam	10,15,405	11,95,597	4,00,115	93.5	78.5	110.9	135.1	145.3	132.7
Bihar	55,26,272	53,71,573	17,31,257	118.6	139.8	132.1	195.8	174.1	254.3
Chandigarh	23,876	18,306	9,670	0.6	0.8	1.0	1.4	1.1	1.4
Chhattisgarh	11,59,187	8,98,860	4,60,273	42.4	68.0	62.1	94.6	86.9	97.9
Dadra & N Haveli	8,453	6,677	2,941	0.3	0.3	0.3	0.2	0.4	0.1
Daman & Diu	3,128	2,415	992	0.1	0.2	0.2	0.4	0.3	0.4
Delhi	5,33,118	1,50,980	1,50,397	12.3	20.1	11.2	26.6	26.6	34.8
Goa	36,423	17,080	15,106	2.0	2.5	2.0	3.1	3.0	3.1
Gujarat	16,65,764	14,33,314	7,55,356	49.9	103.7	130.1	140.5	97.0	140.4
Haryana	7,41,403	3,67,546	3,27,817	25.9	36.6	36.7	47.3	48.9	56.2
Himachal Pradesh	2,74,286	1,56,218	1,02,938	18.1	22.1	23.7	30.4	27.4	32.6
Jammu & Kashmir	3,93,142	3,00,450	1,84,121	26.9	17.1	27.4	29.5	42.0	58.5
Jharkhand	12,14,099	10,40,189	6,43,486	66.7	82.7	52.6	75.4	62.4	99.1
Karnataka	21,68,105	16,17,060	9,56,342	69.3	130.6	123.8	157.3	108.8	182.6
Kerala	3,77,800	3,51,940	1,67,511	33.6	50.5	59.8	53.3	44.3	63.0
Lakshadweep	2,360	2,290	1,663	0.1	0.3	0.3	0.5	0.2	0.3
Madhya Pradesh	36,59,070	35,67,141	14,50,712	113.0	206.4	149.8	245.9	237.2	273.8
Maharashtra	30,41,141	31,06,915	12,02,045	101.4	195.4	230.6	331.9	225.9	347.0
Manipur	1,75,636	1,79,540	75,010	13.2	14.6	13.2	12.3	12.4	8.1
Meghalaya	1,69,447	1,88,262	63,404	13.1	14.3	15.3	16.6	17.1	16.9
Mizoram	67,838	55,180	34,772	7.4	7.8	7.4	8.2	8.8	9.1
Nagaland	1,18,133	1,06,567	53,922	11.4	15.9	17.4	15.2	13.8	13.8
Orissa	20,23,629	18,33,321	7,73,090	66.4	116.8	110.2	140.1	107.1	165.2
Puducherry	24,996	798	9,344	1.2	1.6	2.8	1.7	0.6	1.9
Punjab	5,67,338	4,29,016	2,77,662	26.2	31.8	42.4	49.6	47.5	50.8
Rajasthan	17,83,564	10,55,190	9,45,089	60.4	112.3	95.6	144.4	111.1	158.5
Sikkim	8,396	12,231	4,050	1.4	2.5	2.2	3.2	3.4	3.2
Tamil Nadu	17,02,851	7,04,534	6,74,936	62.4	97.2	87.6	77.4	69.2	139.6
Tripura	1,44,192	1,49,369	83,969	18.7	13.5	21.3	21.2	15.2	17.5
Uttar Pradesh	1,10,17,097	84,01,029	47,62,317	301.4	517.1	357.7	540.7	215.4	614.3
Uttrakhand	1,13,141	2,47,290	44,742	8.3	11.0	19.1	21.2	208.0	20.7
West Bengal	35,12,398	33,77,266	13,55,127	106.4	174.2	187.4	214.6	172.0	247.2
Total	4,60,26,328	3,81,23,126	1,90,82,210	1,573.5	2,473.9	2,300.8	3,096.2	2,531.7	3,491.9

Source: Compiled by authors from data made available by The Lok Sabha (House of the People) and ICDS, GoI. Refer to Table A25 for details of data and source links.

TABLE A21 EXPENDITURE TRENDS IN THE OVERALL NRHM

States	2010—11			2011—12			2012—13		
	Centre	State	All	Centre	State	All	Centre	State	All
					US$ million				
Andaman & Nicobar Islands	2.55	0.29	2.85	1.43	2.01	3.44	1.29	1.20	2.48
Andhra Pradesh	130.68	-18.76	111.92	150.66	-36.30	114.36	135.11	18.22	153.32
Arunachal Pradesh	11.90	0.79	12.68	12.23	2.40	14.63	8.88	2.38	11.26
Assam	118.78	57.57	176.35	141.51	25.44	166.96	143.20	54.00	197.20
Bihar	166.96	67.71	234.67	126.98	58.14	185.12	178.13	27.00	205.13
Chandigarh	1.11	0.38	1.49	1.40	0.33	1.73	1.08	0.40	1.47
Chhattisgarh	52.78	-3.01	49.77	67.99	9.85	77.84	59.57	24.46	84.04
Dadra & Nagar Haveli	1.02	-0.09	0.93	0.78	0.27	1.05	0.94	-0.02	0.92
Daman & Diu	0.49	0.15	0.64	0.41	0.43	0.84	0.30	0.47	0.77
Delhi	17.50	-2.96	14.54	16.51	-1.63	14.88	8.74	7.90	16.64
Goa	2.78	0.19	2.96	3.21	1.23	4.43	4.05	0.65	4.70
Gujarat	89.80	26.69	116.49	100.16	23.46	123.61	107.96	7.37	115.32
Haryana	35.43	10.98	46.42	47.96	-1.31	46.65	48.11	7.56	55.67
Himachal Pradesh	18.26	8.31	26.57	31.81	-7.65	24.15	18.61	14.94	33.56
Jammu & Kashmir	28.03	5.96	33.99	40.72	-0.50	40.22	32.07	16.55	48.62
Jharkhand	57.56	3.90	61.47	75.40	-7.75	67.65	57.52	10.63	68.15
Karnataka	94.58	18.43	113.00	108.49	15.30	123.80	105.46	21.38	126.83
Kerala	40.87	21.38	62.25	93.95	-24.90	69.06	79.12	3.83	82.95
Lakshadweep	0.41	0.15	0.55	0.26	0.40	0.66	0.40	0.15	0.55
Madhya Pradesh	126.52	34.26	160.77	154.75	1.51	156.27	152.59	31.51	184.11
Maharashtra	145.70	59.40	205.10	211.17	28.05	239.22	228.73	40.63	269.36
Manipur	10.96	0.04	11.00	9.89	0.74	10.63	4.16	6.63	10.79
Meghalaya	8.47	6.37	14.84	10.05	7.32	17.37	17.47	-1.95	15.53
Mizoram	11.37	1.10	12.47	10.83	1.58	12.41	11.03	2.37	13.40
Nagaland	10.71	2.49	13.20	14.19	3.84	18.03	15.33	1.11	16.45
Orissa	88.62	18.54	107.16	111.92	5.46	117.38	86.21	29.19	115.40
Puducherry	2.63	0.17	2.80	2.55	0.77	3.32	2.38	0.73	3.11
Punjab	40.78	13.96	54.73	54.27	7.46	61.73	51.89	5.83	57.71
Rajasthan	139.35	49.69	189.04	168.64	0.96	169.60	136.63	40.07	176.70
Sikkim	5.31	0.08	5.40	4.37	0.79	5.15	5.61	-0.41	5.20
Tamil Nadu	113.24	19.86	133.10	124.98	22.95	147.93	152.93	-27.29	125.64
Tripura	13.79	3.22	17.00	11.03	6.57	17.60	11.22	7.60	18.81
Uttar Pradesh	353.45	80.96	434.40	300.60	23.78	324.37	362.45	-45.63	316.82
Uttarakhand	23.77	9.50	33.28	33.62	0.72	34.34	28.53	9.78	38.31
West Bengal	109.80	25.15	134.95	150.22	-4.78	145.44	151.21	4.80	156.01
Others (Training and Central Component under NRHM)	0.00	0.00	0.00	18.05	-5.60	12.44	10.84	-4.16	6.68
Total	2,075.99	522.83	2,598.81	2,412.97	161.35	2,574.32	2,419.75	319.88	2,739.63

Source: Compiled by authors from data made available by The Lok Sabha (House of the People) and NRHM, GoI. Refer to Table A25 for details of data and source links.

TABLE A22 COVERAGE AND EXPENDITURE TRENDS IN THE JANANI SURAKSHA YOJANA

States/UTs	Expenditure and coverage 2012-13		
	Centre allocation	Total expenditure reported	Beneficiaries
	Millions of US$ (1US$ = 62INR)		Persons
A & N Islands	0.02	0.01	298
Andhra Pradesh	5.13	4.60	3,41,041
Arunachal Pradesh	0.23	0.18	12,200
Assam	13.08	12.84	4,21,359
Bihar	39.40	48.38	18,29,916
Chandigarh	0.01	0.00	449
Chhattisgarh	9.89	7.49	2,77,653
Dadra & Nagar Haveli	0.02	0.01	786
Daman & Diu	0.01	0.00	0
Delhi	0.30	0.22	21,722
Goa	0.02	0.02	1,387
Gujarat	4.16	4.41	3,08,880
Haryana	1.02	0.67	61,902
Himachal Pradesh	0.38	0.18	13,626
Jammu & Kashmir	3.32	3.61	1,27,041
Jharkhand	14.40	9.57	2,82,169
Karnataka	6.85	5.31	4,07,611
Kerala	1.96	1.43	1,16,816
Lakshadweep	0.01	0.01	494
Madhya Pradesh	30.87	28.48	9,79,822
Maharashtra	4.88	5.16	3,64,039
Manipur	0.27	0.25	18,145
Meghalaya	0.35	0.24	21,082
Mizoram	0.22	0.19	12,057
Nagaland	0.29	0.23	17,609
Orissa	17.78	16.10	5,47,648
Puducherry	0.06	0.04	3,728
Punjab	1.30	0.89	79,511
Rajasthan	29.26	28.98	10,72,623
Sikkim	0.07	0.05	2,668
Tamil Nadu	5.76	4.34	3,58,224
Tripura	0.45	0.30	18,682
Uttar Pradesh	84.18	69.03	21,86,401
Uttarakhand	2.18	2.38	89,506
West Bengal	9.70	9.00	6,59,996
Total	287.82	264.60	1,06,57,091

Source: Compiled by authors from data made available by The Lok Sabha (House of the People) and NRHM, GoI. Refer to Table A25 for details of data and source links.

Note: The Janani Suraksha Yojana (JSY) under the NRHM is being implemented with the objective of reducing maternal and neonatal mortality by promoting institutional delivery among poor pregnant women. The scheme is under implementation in all states and Union Territories (UTs), with a special focus on Low Performing States. It is a cash transfer scheme that is conditional on successful institutional delivery among the below poverty line (BPL) pregnant women.

TABLE A23 COVERAGE AND EXPENDITURE TRENDS IN THE IGSMY

States/UTs	IGMSY Expenditure and Coverage 2012-13		
	Centre allocation	Total expenditure reported	Beneficiaries
	Millions of US$ (1US$ = 62INR)		Persons
Andhra Pradesh	4.41	4.73	65,762
Arunachal Pradesh	0.04	0.00	366
Assam	0.00	1.09	13,865
Bihar	0.00	4.92	75,669
Chhattisgarh	0.90	0.93	13,613
Goa	0.09	0.26	3,612
Gujarat	2.05	1.74	26,226
Haryana	0.08	0.15	2,483
Himachal Pradesh	0.10	0.14	1,819
Jammu & Kashmir	0.56	0.28	3,520
Jharkhand	0.00	0.50	7,417
Karnataka	0.00	2.70	29,069
Kerala	0.89	1.54	22,317
Madhya Pradesh	2.74	3.96	66,431
Maharashtra	0.00	3.33	48,075
Manipur	0.07	0.00	0
Meghalaya	0.00	0.09	1,199
Mizoram	0.09	0.04	2,193
Nagaland	0.06	0.03	864
Odisha	0.54	2.42	39,714
Punjab	0.00	0.97	12,247
Rajasthan	0.00	2.63	41,940
Sikkim	0.01	0.03	1,165
Tamil Nadu	0.00	3.95	43,178
Tripura	0.00	0.31	5,031
Uttar Pradesh	0.00	0.70	13,501
Uttarakhand	0.54	0.48	6,955
West Bengal	0.00	3.13	58,321
Delhi	0.00	0.67	6,850
Andaman & & Nicobar	0.02	0.02	394
Puducherry	0.01	0.01	518
Chandigarh	0.10	0.14	5,953
Daman & Diu	0.00	0.03	553
D & NH	0.00	0.03	1,434
Lakshadweep	0.00	0.00	0
Total	13.32	41.96	6,22,254

Source: Compiled by authors from data made available by The Lok Sabha (House of the People) and MoWCD, GoI. Refer to Table A25 for details of data and source links.

Note: The Indira Gandhi Matritva Sahyog Yojana (IGMSY) under the MWCD is a conditional cash transfer scheme and its goal is to pay compensation to pregnant and lactating women for “wage-loss” during childbirth and childcare. The scheme was implemented on pilot basis in 53 selected districts.

TABLE A24 STATE-WISE COVERAGE AND EXPENDITURE ESTIMATES FOR INTERVENTIONS IN THE ICDS SNP 2014

State	0-3 years	Pregnant and lactating women	Grade III and IV	Expenditure on SNP till Jan 2014 US$ million	2014 cost estimate US$ million 6-36 months children	2014 cost estimate US$ million Pregnant and lactating women	2014 cost estimate US$ million Severely malnourished children	Ratio of current cost to current expenditure	Expenditure performance based on ratio
	2014 coverage			Reported by ICDS					
Andhra Pradesh	2836259	1430658	59996	154.65	74.11	24.22	0.78	0.97	High
Arunachal Pradesh	106892	30829	3	1.98	2.79	0.52	0.00	3.32	Low
Assam	1612832	691237	21230	22.90	42.14	11.70	0.28	4.52	Low
Bihar	5690254	1817672	533518	209.12	148.67	30.77	6.97	1.65	Average
Chhattisgarh	1183978	493718	91121	42.12	30.93	8.36	1.19	1.56	Average
Goa	38382	15649	76	0.23	1.00	0.26	0.00	7.93	Low
Gujarat	1416634	657889	53712	52.48	37.01	11.14	0.70	1.71	Average
Haryana	731262	328186	38942	21.41	19.11	5.56	0.51	1.68	Average
Himachal Pradesh	271486	103003	1824	6.98	7.09	1.74	0.02	1.99	Average
Jharkhand	1471883	740351	20871	59.53	38.46	12.53	0.27	1.45	Average
Karnataka	2168703	973914	3509	76.44	56.66	16.49	0.05	1.61	Average
Kerala	412363	170121	7087	14.20	10.77	2.88	0.09	1.88	Average
Madhya Pradesh	3134957	1339496	148185	151.93	81.91	22.68	1.94	1.24	Low
Maharashtra	3057175	1145606	87829	118.72	79.88	19.40	1.15	1.60	Average
Meghalaya	214162	76332	353	13.08	5.60	1.29	0.00	1.03	High
Mizoram	46638	22366	229	4.90	1.22	0.38	0.00	0.53	High
Nagaland	161019	62680	319	6.11	4.21	1.06	0.00	1.53	Average
Orissa	2007782	817509	73348	120.22	52.46	13.84	0.96	1.02	High
Punjab	572119	279728	1939	5.79	14.95	4.74	0.03	5.59	Poor
Rajasthan	1957425	972494	7936	85.80	51.14	16.46	0.10	1.16	High
Sikkim	20923	7087	24	1.20	0.55	0.12	0.00	0.85	High
Tamil Nadu	1741727	688683	3415	75.89	45.51	11.66	0.04	1.02	High
Tripura	144692	77381	721	9.38	3.78	1.31	0.01	1.03	High
Uttar Pradesh	10854028	4694759	60622	477.89	283.59	79.48	0.79	1.25	High
Uttrakhand	384694	162115	4722	15.22	10.05	2.74	0.06	1.31	High
West Bengal	3471611	1387570	59318	63.95	90.71	23.49	0.77	3.35	Low
A & N Islands	9557	3635	92	1.25	0.25	0.06	0.00	0.35	High
Chandigarh	22432	9336	1110	0.83	0.59	0.16	0.01	1.54	Average
Delhi	525767	173203	165	17.98	13.74	2.93	0.00	1.54	Average

Source: Compiled by authors from data made available by The Lok Sabha and coverage data from data tables of the ICDS. Refer to Table A25 for details of data and source links.

Note: Ratio based rating indicates how well the state meets the unit cost norms of the ICDS (<1.5=High, 1.5-2=average, >2=Low).

TABLE A25 LINKS AND DETAILS OF DATA OBTAINED FROM THE LOK SABHA, ICDS AND NRHM

Lok Sabha data					
Question	**Date**	**Session**	**Data**	**Link**	**Date Accessed**
409	6th December 2013	15	NRHM expenditure 2010-11,	http://164.100.47.132/Annexture_New/lsq15/15/au409.htm	28th December 2015
2445	25th July 2014	16	NRHM expenditure 2011-12, 2012-13, 2013-14,	http://164.100.47.132/Annexture_New/lsq16/2/au2445.htm	28th December 2015
430	6th December 2013	15	ICDS expenditure	http://164.100.47.132/Annexture_New/lsq15/15/au430.htm	28th December 2015
3318	18th December 2015	16	2015-16 ICDS budget allocation and changes	https://164.100.47.190/loksabhaquestions/annex/6/AU3318.pdf	28th December 2015
4549	19th December 2014	16	SNP expenditure	http://164.100.47.132/Annexture_New/lsq16/3/au4549.htm	28th December 2015
3430	30th August 2013	15	JSY expenditure	http://164.100.47.132/Annexture_New/lsq15/14/au3430.htm	28th December 2015
2496	23rd August 2013	15	IGMSY expenditure	http://164.100.47.132/Annexture_New/lsq15/14/au2496.htm	28th December 2015
Other Sources					
Program	**Indicators**			**Link**	28th December 2015
ICDS	Coverage		Number of beneficiaries currently covered by category	http://icds-wcd.nic.in/icds/icdsdatatables.aspx	28th December 2015
NRHM	Program details		Annual Report	http://nrhm.gov.in/images/pdf/media/publication/Annual_Report-Mohfw.pdf	28th December 2015

Source: Compiled by authors from Lok Sabha, Ministry of Women and Child Development and Ministry of Health and Family Welfare, Government of India

POSHAN

Led by IFPRI

IFPRI-NEW DELHI

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

NASC Complex, CG Block,
Dev Prakash Shastri Road,
Pusa, New Delhi 110012, India
T+91.11.2584.6565 to 6567
F+91.11.2584.8008