NutritionIndiaInfo

Standards and Methods

Prepared by

CTARA
Centre for Technology
Alternatives for Rural Areas

unicef
for every child

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Hosted on cloud servers to ensure interruption free service

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Apache Solr

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4. COLOR CODING ON MAPS

4.1. Colors on Maps

Characteristics	Colors	Color Codes
Good	Green	#00af50
Warning	Yellow	#ffff00
Bad	Orange	#ffc000
Very Bad	Red	#fe0000
Extreme	Crimson Red	#8e0000
No Data	Grey	

4.2. Colors on graphs

Color codes should be used in the trend, rank charts and burden maps. These colors were also used in the UNICEF State and District Nutrition Profiles.

Indicator	Color	Color Codes
Stunting	Diarrhea green	#a3c00f
Wasting	Emergency red	#e53935
Underweight	Light blue	#039be5
MUAC	Emergency red	#e53935
Overweight/Obese	Purple	#7b1fa2
Anaemia	Dareker red	#b71c1c
Others	Saffron	#eda143

Cut-offs and color codes for NutritionINDIA

Please see excel document – Harmonized UNICEF/IFPRI cut-offs / color codes

Cutoffs are based on:

de Benoist B et al., eds. Worldwide prevalence of anaemia 1993-2005. WHO Global Database on Anaemia Geneva, World Health Organization, 2008.

de Onis, Mercedes et al. (2018) Prevalence thresholds for overall and severe wasting, overweight and stunting in children under 5 years. (Manuscript submitted for publication.)

5. TYPES OF MAPS

5.1.   Heat Maps

Maps presenting indicators (%) will always be presented with the colors defind in the color code section.

5.2.   Dot Density Maps

Maps presenting population numbers affected within states or districts will always be presented as dot density maps.

Number of dots to show:

The number can be rounded to the hundreds if the representative number is less than one thousand. The number can be rounded to the thousands if the representative number is more than one thousand.

The algorithm to calculate the representative number of affected persons would be
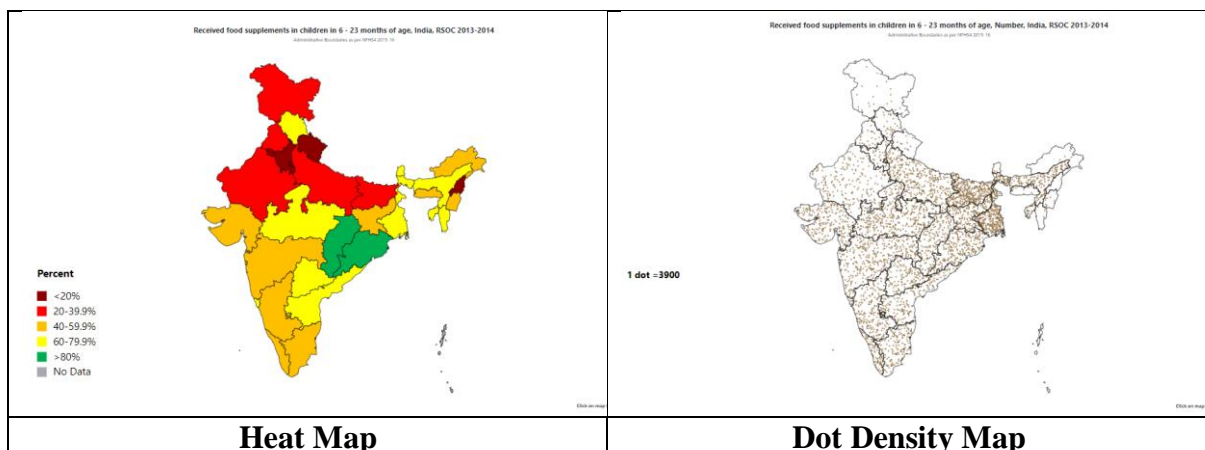
Representative Number (X) = 4000 / Number Affected

If X < 1000

X =100*ROUND((Population Affected/4000/100))

If X >= 1000

X =1000*ROUND((Population Affected/4000/1000))

| Heat Map | Dot Density Map |

6. BURDEN ESTIMATES

6.1.　Population Data

Population projections are done based on the population Census 2001, Census 2011, Population Projection 2016, Population Projection 2021

The data is collected from the following sources:

Census 2001: Population projections for India and states 2001-2026, Report of the technical group on population projections constituted by the national commission on population, May 2006

Census 2011: Population projections for India and states 2011-2036, Report of the technical group on population projections, November 2019

Projection 2016 & Population Projection 2021: Population projections for India and states 2011-2036, Report of the technical group on population projections, November 2019

6.1.1.　Population Age Subgroup Data

The population projection reports give the subgroup projections of India, States (except Goa) and Combined North-East States (Excluding Assam).

6.1.1.1. Calculating Age Subgroup of Areas (Not present in the report)

6.1.1.1.1.　Union Territories + Goa

1. Take percentage distribution of population by age of India.
2. Take total population of the state/UT
3. Multiply the percentage to the total population to get the age-group population of the state/UT

Example: To calculate 0-4 population of Goa in 2001 (Population in 1000's)

G_T = Total population of Goa, G_{0-4} = 0-4 Population of Goa

P_{0-4} = Percentage distribution of 0-4 population of India

$G_{0-4} = P_{0-4} * G_T/100$

$G_{0-4} = (11.8 * 1348/100) * 1000 = 159064$

6.1.1.1.2.　North-East States (Except Assam)

1. Take percentage distribution of population by age of North-East (except Assam).
2. Take total population of the state/UT
3. Multiply the percentage to the total population to get the age-group population of the state/UT

Example: To calculate 5-9 population of Sikkim in 2016 (Population in 1000's)

S_T = Total population of Sikkim, S_{5-9} = 5-9 Population of Sikkim

NE_{0-4} = Percentage distribution of 0-4 population of North-East (except Assam)

$S_{5-9} = NE_{0-4} * S_T/100$

$S_{5-9} = (10 * 644)/100 * 1000 = 64400$

6.1.1.2. Exception States

Andhra Pradesh

Telangana

Jammu & Kashmir

Ladakh

6.1.2. Calculating population at a specific year

Linear projection formula was used to calculate population at a particular year using (2001, 2011, 2016 & 2021) data.

Formula: ((change in Population)/(number of years))*(Difference between required year and start of the change).

Year between 2001 - 2011

Example for 2004 population Projection:

2004_Pop = 2001_pop + ((2006_pop – 2001_pop)/5)*(2004 – 2001)

Year between 2011- 2016

Example for 2013 population Projection:

2013_Pop = 2011_Pop + ((2016_pop – 2011_pop)/5)*(2013 – 2011)

Year between 2016- 2021

Example for 2017, 0-4 population Projection of Telangana:

2017_Pop = 2697000 + (2605000 - 2697000)/5*(2017-2016)
= 2678600

6.1.3. Calculating distribution of population under-five years

Age Group	As a Percentage of Under-Five (NFHS-3)
0 - 5 months	10.31
6 - 8 months	5.34
6-11 months	10.13
6 - 23 months	30.13
6 - 59 months	89.69
0 - 59 months	100

Age Category	Availability in Population Projection Report 2006	Calculation Method (for year < 2011)
< 1 Month	No	CBR*Total_Pop/1000
0 – 5 Months	No	0.1031*(0-4 Years_pop)
6 – 23 Months	No	0.3013*(0-4 Years_pop)
6 – 59 Months	No	0.8969*(0-4 Years_pop)
6 - 8Months	No	0.053*(0-4 Years_pop)
< 1 Year	No	0.2044*(0-4 Years_pop)
0 – 4 Years	Yes	

1 – 2 Years	No	0.4044*(0-4 Years_pop)
1 – 4 Years	No	0.7956*(0-4 Years_pop)
5 – 9 Years	Yes	
10 – 14 Years	Yes	
10 – 19 Years	No	Aggregate (10-14, 15-19)_pop
15 – 49 Years	No	Aggregate (10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-45, 45-49)

	Population 2011 (Census 2011)	As a Percentage of Under-Five
0 - 5 months	10,155,617	9.0
6 - 8 months	5,077,809	4.5
6-11 months	11,599,580	10.3
6 - 23 months	31,910,814	28.3
6 - 59 months	102,651,161	91.0
0 - 59 months	112,806,778	100.0

Age in Years	Male	Female	Total	Percentage of Under-Five
0	10,633,298	9,677,936	20,311,234	18.0
1	11,381,468	10,373,729	21,755,197	19.3
2	11,952,853	11,103,415	23,056,268	20.4
3	12,331,431	11,642,610	23,974,041	21.3
4	12,333,024	11,377,014	23,710,038	21.0
Total 0-4 Population 2011	58,632,074	54,174,704	112,806,778	100.0

Age Category	Availability in Population Projection Report 2019	Calculation Method (for year > 2011)
< 1 Month	No	CBR*Total_Pop/1000
0 – 5 Months	No	0.09*(0-4 Years_pop)
6 – 23 Months	No	0.283*(0-4 Years_pop)
6 – 59 Months	No	0.91*(0-4 Years_pop)
6 – 8 Months	No	0.045*(0-4 Years_pop)
< 1 Year	No	0.193*(0-4 Years_pop)
0 – 4 Years	Yes	
1 – 2 Years	No	0.397*(0-4 Years_pop)
1 – 4 Years	No	0.82*(0-4 Years_pop)
5 – 9 Years	Yes	
10 – 14 Years	Yes	
10 – 19 Years	No	Aggregate (10-14, 15-19)_pop
15 – 49 Years	No	Aggregate (10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-45, 45-49)

CBR is available in the projection reports used for estimating livebirths (or < 1-month children).

6.2. District Level Estimates

For district level estimates – include in database

% population in district / state total

To calculate any populations above for district

District population of Older Adolescents 15-19 years of age = (State population) for (year) * (proportion of population in district / state)

6.3. Burden Calculation

Burden estimates are calculated from the survey results and the midpoint year of data collection

$$\text{Burden} = \text{population} * \text{prevalence}$$

Please use the year of midpoint of data collection as the year of the population to include in the burden calculations, for example:

- NFHS-3 2005-06 (20-Apr-06 - 2006)
- RSOC 2013-14 (25-Feb-14 - 2014)
- NFHS-4 2015-16 (1-Jan-16 - 2016)
- CNNS 2016-18 (03-Jul-17 - 2017)

6.3.1. Round off

Round of burden estimates to

If greater than 10,000 to 1000

If less than 10,000 to 100

If less than 100 to 10

The NFHS-1 and NFHS-2 Surveys collected anthropometry data only from children from 0-36 months of age. These data are not comparable to the NFHS-3, NFHS-4 and other surveys. For children under-five, only the most recent survey results with anthropometry for children for the age group are presented.

Presentation of Population Numbers

The Census 2001 2011 are annually representative – We can just place these in the center of the year.

In the immediate and underlying determinants, the following population numbers are represented.

- Adolescence -> immediate and underlying determinants -> population 10-19 years (male and female together)
- Women of reproductive age -> immediate and underlying determinants -> female population 15-49 years

- Pregnancy -> immediate and underlying determinants -> population of pregnant women (no specification of age) (Live births*(1+stillbirthrate))
- Delivery PNC -> Live Births
- Early childhood -> immediate and underlying determinants -> population 0-4 years (male and female together)
- School age -> immediate and underlying determinants -> population 5-9 years (male and female together)

7. EXPLANATORY TEXT

## 7.1.	Updates

Update - Blank
All nutrition information at your fingertips

The Comprehensive National Nutrition Survey
the first national survey with data from birth to adolescence

Outstanding Stunting Reduction
See here for Bihar's progress in reducing chronic malnutrition

## 7.2.	Lifecycles – Text

Adolescence
The age group from 10-19 years of age is when children grow through the second growth spurt and physically and mentally transition into adults. The needs for a diverse well rounded diet are greater during adolescence than at any other time in the life cycle, except during pregnancy. Adolescence is the time to develop good lifelong habits, including consuming a healthy diet and regularly exercising to prevent undernutrition, anaemia and micronutrient deficiencies, overweight/obesity and eating disorders.

Women of Reproductive Age
The age group normally defined as 15 -49 years of age when women can give birth to children. Undernourished girls are more likely to become undernourished mothers who have a greater chance of giving birth to low birth weight babies, perpetuating an intergenerational cycle of malnutrition. Women's nutrition is critical to ensure that she can reach her full potential. But her nutrition is also important for families and communities. When women are healthy and can access resources, they invest in the nutrition, education and health of their family providing leading to economic growth and development of societies.

Pregnancy
Pregnancy marks the beginning of the first 1000 days from conception to the 2nd year of the child. For women, this period of intense physical growth and development demands more food but more important, a healthy nutrient-dense diet. Underweight women before pregnancy need to gain more, and overweight or obese women before pregnancy need to gain less weight. Too little weight in pregnancy can lead to the baby being born too small, with increased risk of illness, difficulty feeding, and developmental delays. Too much weight gain in pregnancy can lead to birth complications and increased risk of a caesarean birth. A healthy diet is associated with a reduced risk of pregnancy complications such as gestational diabetes and hypertension and a healthy childbirth.

Delivery PNC
The period from the delivery of a child and following post-natal care visits (PNC) are critical moments to ensure the health, nutrition and wellbeing for women and children. It is a time of both tremendous potential and enormous vulnerability. Institutional births help to ensure safe childbirth and can support the early initiation of breastfeeding within the 1st hour of life. The first milk (colostrum) is considered the first vaccination as it contains antibodies along with nutrients and essential fatty acids. Women need to continue to have a diverse and nutrient dense diet and appropriate health care to enable physiological feat of producing milk for her baby.

Early Childhood

Early childhood marks the second stage of the 1,000 days and the the critical window of opportunity to shape a child's development. The period of early infancy marked by explosive physical and mental growth also has the highest demands during the lifecycle for a nutritious diet. Luckily for physical growth and brain development, breastmilk is the ultimate superfood. Breastmilk contains the full range of nutrients, growth factors and hormones that are vital for a child's growth. After six months, nutrients from solid foods are needed along with continued breastfeeding along with the public health services to prevent anemia, micronutrient deficiencies, environmental enteropathies and childhood illness.

School Age

The period from 5 to 9 years of age when children start school has important nutrition and health needs which have often been overlooked. While growth has slowed following early childhood, the macronutrients and micronutrients needs for children are higher relative to body size compared to adults. Children need to protected against malnutrition, anemia and micronutrient deficiencies with appropriate diverse diets and health care in order to develop to their full educational potential.

7.3.   Indicator selection Text

Manifestation

Malnutrition is presented as undernutrition, micronutrient deficiencies, overweight/obesity and diet-related noncommunicable diseases.

Interventions

Essential public health and nutrition interventions are services to ensure the health and wellbeing of the population.

Immediate and Underlying Determinants

Determinants include immediate inadequacies in food, health and care along underlying conditions of social safety nets, hygiene & sanitation programs and women's empowerment.