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ADDRESSING THE UNEQUAL BURDEN OF MALNUTRITION[i]

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The poor are not uniformly disadvantaged. For most health indicators, the status of 'excluded groups' such as the Scheduled Castes (SC), Scheduled Tribes (ST) and Muslims is significantly worse than that of other castes and religious groups. Our analysis of rural India indicates that, while nutritional status is closely linked with levels of income, education and access to public health services, social identity is an additional aggravating factor in nutritional inequity. While the Constitution of India acknowledges that discrimination across social groups exists, greater action to address it is called for. This note makes some policy recommendations to minimise these differences.

Malnutrition: unequal spread

Nutrition data from the National Family Health Survey (NFHS)-3, (2005-6) show that malnutrition is particularly prevalent amongst the STs, SCs, Other Backward Classes (OBC) and Muslims (refer Figure 4 in Policy Note# 1).

As the Table 1 shows, while nationally (across rural India) about 40.5 percent of all women are 'underweight' , women from the SC and ST groups respectively have a 8 and 13 percent higher incidence of undernutrition than those from the 'General Category' (GC). Such inequalities are also reflected in the nutritional status of children under five, with SC and ST children showing underweight prevalence that is about 14 and 20 percent higher than that among children from the GC. Child mortality rates are similarly over 15 percent higher for SC/ST children than for GC children. OBCs are worse-off in comparison to the GC, though better-off than the SC/ST.

Moreover, the decline in malnutrition levels of SC and ST children over the three rounds of NFHS: 1992-93, 1998-99 and 2005-06 has been slower than that seen in the case of the GC category (Figure 1).

Comparing child malnutrition across religious groups, it is clear that there are differences across religious as well as socio-religious groups. Children from Christian and Sikh groups have relatively better nutritional status than those from Hindu and Muslim groups. Among socio-religious groups, SC-Muslims have the highest proportion of underweight children followed by ST-Hindus and SC-Hindus. Similarly, women from the ST-Hindu and SC-Muslim groups have the highest incidence of malnutrition (51 and 45 percent respectively, as compared to the average in those groups). Many groups of women are worse-off than their male counterparts (data not shown).

Table 1: Malnutrition among children across social and religious groups in rural India

	Children		Women	Children (Proportion of under-weight <Med-2SD)				
Social Groups	CMR	(Weight for age)<Med 2SD	BMI 18.5	Hindu	Muslim	Christian	Sikh	Others
SC	25.6	50.6	44.7	51.3	57.6	30.6	33.5	43.4
ST	38.3	56.1	48.4	56.9	36.5	44.1	NA	NA
OBC	18.7	45.7	39.7	45.6	46.7	27.3	19.6	NA
General	13.3	36.3	35.8	33.7	43.5	27.7	18.8	NA
Average	21.0	45.6	40.5	46.3	44.0	37.0	24.6	44.5

Source: Computed from NFHS-3 (2005-06) data file, NA- indicates sample size less than 50 so not considered.CMR: Child Mortality Rate

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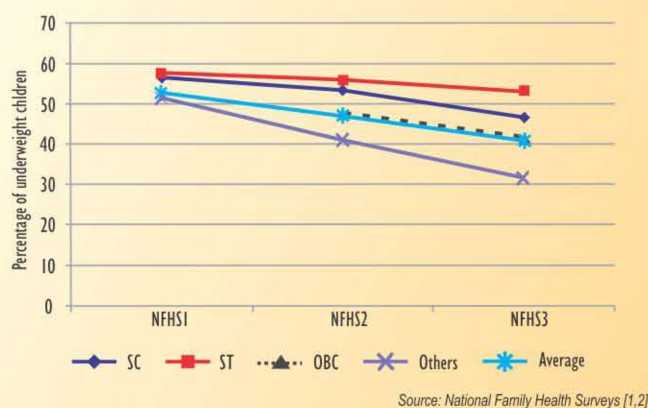

In summary, malnutrition levels of women and children from SC and ST communities are higher than those of the general category. The pace of decline of undernutrition across these groups is much slower than that in the general category. This situation calls for stronger policy measures to accelerate improvements in the nutritional status of women and children from SC/ST groups.

Unpacking the undernutrition differentials

Regression analysis of rural NFHS-3[ii] data has identified four key factors impacting child malnutrition in India–economic status, education, access to health services, and social identity. The following sections discuss the impact of these factors.

Effect of economic status, mother's education and access to health services

The logistic regression analysis indicates that children from wealthier households have a lower incidence of malnutrition than others. When all other factors, including social group, are held constant, the likelihood of the poorest being malnourished is about three times that of children from the highest wealth quintile (odds ratio of children from poorest households to those from the richest = 1/0.342 = 2.9). Analysis of the three rounds of NFHS data (1992-2005) shows that improvement in nutritional status has occurred mainly in the wealthier groups where malnutrition has declined from 34 percent to 18 percent. On the other hand, nutritional levels of children from the poorer groups have reduced marginally from 61 percent to 56 percent. [3]

Education level of mothers also affects nutritional status of children. The likelihood of children of illiterate mothers being malnourished is twice that of children of mothers with secondary or higher education (odds ratio of illiterate mothers to those having higher education = 1/0.463 = 2.16).

Access to health services is a third crucial factor affecting nutrition. Data indicates that mothers who have better access to health services, such as antenatal care, have lower odds of having a malnourished child–specifically, the probability that they will have malnourished children is 0.67 times that of mothers who do not receive such services.

Thus, measures to alleviate poverty, improve educational levels and increase access to public health services are necessary to improve nutritional status of children across all social groups.

Effect of social identity on nutritional levels

In addition to the three factors above, data in Tables 2, 3 and 4 demonstrates that social groups also impact the level of child malnutrition. Tables 2 and 3 show that nutritional levels of SC and ST groups are lower than the GC group at similar levels of wealth and mother's education. Moreover, SC/ST mothers and children have relatively poorer access to public health services than other social groups. For example, children from these excluded groups have immunisation rates about 20 percent lower than the GC (Table 4).

The results of our regression analysis indicate that once controlled for income, education, health services, religion, gender and place of residence (rural-urban), the likelihood of SC and ST children being undernourished is about 1.4 times that of children from the GC. Studies also provide evidence of discrimination against SC children in food-

Table 2: Nutritional status of children (percent underweight) in different social groups by wealth index

Social groups	Wealth Index				
	Poorest	Poorer	Middle	Richer	Richest
SC	57.4	51.5	45.0	36.2	22.7
ST	61.0	54.2	48.0	33.1	24.5
OBC	56.6	48.7	42.3	34.9	19.3
General	48.7	46.2	34.0	29.6	17.2
All	56.3	49.2	40.8	32.9	18.6

Source: Computed by the authors from NFHS-3 (2005-06) data file

Table 3: Nutritional status of children (percent underweight) in different social groups by Mothers' educational level

Social groups	Mother's educational level				
	Illiterate	Primary	Secondary	Higher	Total
SC	55.5	46.3	39.5	31.3	50.6
ST	59.2	54.0	45.0	24.1	56.1
OBC	51.1	44.8	35.4	18.4	45.7
General	46.6	36.0	28.9	16.8	36.3

Source: Thorat Sukhadeo and Sadana Nidhi: 'Discrimination and Children's Nutritional Status in India', IDS Bulletin, Vol 40 Number 4, July, 2009

Table 4: Access to essential health services across social groups (Women & Children), rural India, 2005-6

Access to essential health services	Scheduled Caste	Scheduled Tribe	Other Backward Classes	Others
Percentage of children vaccinated	39.7	31.3	40.7	53.8
% distribution of children 0-59 months covered by Anganwadi center by frequency of weighing	78.1	64.2	83.3	82.7
Place of delivery at Home (in %)	67.1	82.3	62.5	49.0
Assistance during delivery (in %)				
(a) From Dai (TBA)	37.7	50.2	37.1	30.4
(b) By friends/relative	20.7	23.0	15.5	11.3
(c) By skilled provider	23.7	16.3	26.4	34.5
Postnatal check-up: less than 4 hrs (in %)	23.7	16.3	26.4	34.5

Source: Computed by the authors from NFHS-3 (2005-06) data file

related schemes, such as the mid-day meals in schools, [4] in the provision of public health services, [5] limiting access to public services, rural and urban employment.[6,7,8] Thus, discrimination appears to be an additional pervasive factor contributing to the higher rates of undernutrition.

In sum, malnutrition is directly affected not only by income levels, education and public health services, but also by social identity. Thus, central to accelerating improvements in nutrition in India is the need to address the various disparities and deficiencies in the socio-economic environment, and to ensure equal and non-discriminatory access to public services, markets and opportunities for all social, ethnic and religious groups.

Policy suggestions

We make two sets of suggestions–one, aimed at the poor, regardless of social groups, and two, specifically for discriminated groups.

Measures to improve the nutrition status of the poor include:

- *Increasing income:* This is essential for better diets and access to health care. Policies to increase the incomes of the poor include guarantee of employment/wage labor, and of small and marginal farmers coupled with supportive services. Measures such as subsidised food distribution and targeted transfers of cash and/or food coupons are necessary to address food insecurity of poor households.
- *Girls' education and awareness of nutrition and health:* Retaining girls in school is critical for their attaining at least secondary education. At the same time, programs to create awareness of nutrition, health and care are necessary to inform critical feeding and caring behaviours at the family level and to promote use of health services.
- *Reaching the unreached:* Expanding functional health services to rural and poorly-served urban areas is necessary for improving access of the poor to health.

Discriminated groups also require specific measures to help overcome obstacles that impede their access to health, food and other services. Some suggested measures are:

- Establishing Integrated Child Development Services' (ICDS) Anganwadi centres, health facilities and 'fair-price food shops' in underserved SC, ST and Muslim habitations. Anganwadi Workers (AWW) and Auxiliary Nurse Midwives (ANM) training must emphasize the adverse effects of gender and caste discrimination on public health and nutrition outcomes. Incentives for ICDS and health workers to proactively promote 'inclusion' may be considered.
- Recruiting AWWs and ANMs from SC, ST and Muslim communities will serve to improve coverage of these groups. For more of SC/ST/Muslim girls to qualify for these recruitments, increasing their education levels will be an important measure.
- Monitoring and using data disaggregated by social group at all levels to identify underserved communities/groups must be done. This data when available in the public domain may be used fruitfully by public and social interest groups.
- Conducting national public awareness campaigns against discriminatory practices, integrating relevant messages into school curricula, and ensuring that public/social services emphasize 'social inclusion' will help sensitize the public and promote 'non-discriminatory behaviour'.

[i]Source of the Policy Note: Thorat Sukhadeo and Sabharwal Nidhi, Inter-Group Inequalities in Malnutrition in Rural India: Need for Socially Inclusive Policies. Paper presented in the international conference on '2020 Vision: Leveraging Agriculture for Improving Nutrition and Health', organized by IFPRI, 10-12 February, New Delhi; 2011 and Thorat Sukhadeo and Sadana Nidhi: 'Discrimination and Children's Nutritional Status in India', *IDS Bulletin, Vol 40 Number 4, July, 2009*

[ii]Logistic regression analysis is a part of the paper by Thorat Sukhadeo and Sabharwal Nidhi, Inter-Group Inequalities in Malnutrition in Rural India: Need for Socially Inclusive Policies. Paper presented in the international conference on '2020 Vision: Leveraging Agriculture for Improving Nutrition and Health', organized by IFPRI, 10-12 February, New Delhi; 2011 (under publication by IFPRI)

REFERENCES:

[1] IIPS, National Family Health Survey-1992/93, Mumbai: International Institute for Population Sciences;1995.

[2] IIPS and ORC Macro, National Family Health Survey--India (NFHS-2 and 3), India 1998-99. Mumbai: International Institute for Population Sciences; 2000 and 07.

[3] Kulkarni PM. Nutritional status of children in India-poor levels and persistent disparities *(Paper presented at the workshop on Nutritional Status of Children in India: Trends and Strategies organised by the University of Warwick, the Institute for Human Development, and the University of Allahabad, New Delhi on 18-19 October 2010).*

[4] Thorat S, Lee J. Caste discrimination and government food security program. In: Thorat Sukhadeo and Newman Katherine editors. Blocked by caste-economic discrimination and social exclusion in modern India. New Delhi: OUP; 2009.

[5] Acharya S. Public health care services and caste discrimination: A case of dalit children. In: Thorat S, Newman K, editors. Blocked by caste-economic discrimination and social exclusion in modern India. New Delhi: OUP; 2009.

[6] Braun VJ, Hill VR, Lorch-Pandaya R. The poorest and hungry: Assessment, analysis and actions. Washington, D.C., International Food Policy Research Institute; 2009.

[7] Thorat S, Mahamallik M, Sadana N. Caste system and pattern of discrimination in rural markets. In: Thorat S, Newman K, editors. Blocked by caste-economic discrimination and social exclusion in modern India. New Delhi: OUP; 2009.

[8] Thorat S, Attewell P. The legacy of social exclusion: A correspondence study of job discrimination in India's urban private sector. In: Thorat S, Newman K, editors. Blocked by caste-economic discrimination and social exclusion in modern India. New Delhi: OUP; 2009.

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