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**LINKING HEALTH, NUTRITION AND
EDUCATION: LESSONS FOR THE FUTURE**

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Linking Health, Nutrition and Education: Lessons for the future

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I. Introduction

The Human Development approach has at its foundation the link between three critical sectors: Health, Nutrition and Education; as also the understanding of what constitutes an adequate social safety net. Across the globe, social safety net programs attempt to support human development by providing for consistent access to high quality health, nutrition and education programs. The World Bank in a recent report – ***the State of Social Safety Nets 2015*** - hailed India's record on providing social safety nets for the poorest citizens.²The Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) is the largest public works program in the world, with a 182 million beneficiaries. The Mid-Day Meal Scheme (MDMS) provides food for an estimated 105 million school children – again, the largest in the world. The Janani Suraksha Yojana is the world's largest cash transfer program, and so on.

The Government of India has also initiated other large programs that are aimed at enhancing health, nutrition and education outcomes for children, but they have not gone far enough. Some of the nation-wide programs addressing each of these issues include: the SarvaSikshaAbhiyan for the universalization of primary school education; various health schemes to address the health needs of young children including the Reproductive, Maternal, Newborn and Adolescent Health Program, or the Rashtriya Bal SwasthyaKaryakram; and the Integrated Child Development Services (ICDS) program

¹ This paper is based on the findings of a research project funded by the Azim Premji University. The research team consists of Shreelata Rao Seshadri (Principal Investigator), Nilanjan Bhor and Suraj Parab.
² World Bank. 2015. *The State of Social Safety Nets 2015*. Washington, DC: World Bank.
doi:10.1596/978-1-4648-0543-1. License: Creative Commons Attribution CC BY 3.0 IGO.

addressing the nutritional and developmental needs of children in the age group 0-6 years old – again, the world’s largest program to do so. While such programs do integrate elements beyond their core goal – for example, the SarvaSikshaAbhiyan, while focusing on universalization of primary education, also includes a School Health Checkup program; the ICDS, while being primarily concerned with nutrition, also includes early childhood development – it is clear that this needs to be done much more seriously, and with a greater understanding of the inter-sectoral nature of a child’s needs.

Over the past couple of decades, there has been an increasing realization of the importance of the first 1,000 days of life.³ Programs such as the Reproductive and Child Health program and the Janani Suraksha Yojana, to name just two, were launched with the specific objective of supporting pregnant women and their infants, through ante-natal care, iron supplementation, institutional delivery, exclusive breastfeeding, supplementary nutrition, immunization and the like. These interventions have had their results: both maternal and infant mortality have reduced substantially, as also <5 mortality.^{4, 5}

These are all necessary and laudable interventions, but they do not go far enough. The child does not stop needing support after it crosses 1000 days – there is plenty of evidence to show that children have on-going health and nutritional needs well into adolescence. However, there is limited scholarship into the important area of the health and nutritional status and needs of children of primary school-going age. This paper seeks to explore some of the important questions pertaining to this demographic segment: first, what is the theoretical/ethical basis for exploring the linkage between health, nutrition and education in the context of primary schooling? Second, what is the evidence that links health, nutrition and education, are there any established causal linkages and what pathways do such linkages follow? And third, how can we intervene to synergize these linkages and maximize the impact of existing programs?

³ UNICEF. Improving child nutrition: the achievable imperative for global progress. April 2013.

⁴ Sample Registration Survey Bulletin, Office of the Registrar General of India. Vol 49, 2014.

⁵ Sample Registration System, Office of the Registrar General of India. Maternal and Child Mortality and Total Fertility Rates. July, 2011.

II. Status of Primary School Children: evidence from Karnataka

The First Global Nutrition Report released recently by the International Food Policy and Research Institute (IFPRI)⁶ provides an update on the nation's progress on key nutrition indicators. Using the Government of India's Rapid Survey on Children (2013-14),⁷ the authors estimate that under-five stunting in India has reduced on average from 47.9% in 2005-06 to 38.8% in 2013-14; this nine percentage point reduction translates into almost 14.5 million fewer stunted children. Perhaps the World Health Assembly target of reducing under-five stunting worldwide from 162 million children in 2012 to ~100 million in 2025 is feasible after all.

However, the fourth round of the District Level Household Survey (DLHS 4; 2012-13)⁸ tells a less optimistic story: not even the southern states of India, which typically have a better record with regard to health and nutritional outcomes, have been able to conquer the scourge of malnutrition. Almost a third of children under-five are underweight in Kerala, by far the best performer in this group; and more than 43% in neighboring Tamil Nadu. Severe anemia continues to be rampant among children in Andhra Pradesh and Karnataka at 21% and 14% respectively. The situation is far worse in Maharashtra, with almost 54% of the children underweight and more than 17% severely anemic.

Prevalence of malnutrition among primary school children: The data on nutrition of primary school children reveals a similar picture. Singh (2014) studied primary school children living in the slums of Hyderabad, and found about 30 % of children 6-11 years old were underweight and about 20 % were stunted.⁹ Father's literacy was found to be significantly correlated with the child's malnutrition. Another study in Uttar Pradesh

⁶International Food Policy Research Institute. 2015. Global Nutrition Report 2015: Actions and Accountability to Advance Nutrition and Sustainable Development. Washington, DC.

⁷http://wcd.nic.in/issnip/National_Fact%20sheet_RSOC%20_02-07-2015.pdf.

⁸<https://nrhm-mis.nic.in/SitePages/DLHS-4.aspx>.

⁹Singh SP. Malnutrition among primary school children in Hyderabad, Andhra Pradesh, India. International Journal of Technical Research and Applications e-ISSN: 2320-8163, www.ijtra.com Volume 2, Issue 1 (jan-feb 2014), PP. 36-39.

(Singh et al, 2014) found high levels of malnutrition among boys and girls 5-18 years old at 45 and 37% respectively.¹⁰ About 26% of the boys and 21% of the girls were found to be stunted. The same study found high levels of morbidity among the same cohort of children, in terms of upper respiratory tract infections, repeated episodes of diarrhea and scabies. Srivastava et al (2012) studied children 5-13 years of age in the urban slums of Bareilly and found high levels of both stunting and underweight among children 11-13; and high levels of wasting among children 5-7 years old.¹¹ The impact of malnutrition at this age on cognitive learning is quite severe (Tarleton et al, 2006).¹²

Let us now look at some data from a multi-district study on the nutrition status of primary school children in three districts of Karnataka: *Do we know what they eat, and why? A Study on School-level Dietary Adequacy and Impact of Cultural Beliefs on Dietary Choice in Rural Karnataka, India*. This study was initiated to study *inter alia*: (i) the growth profile of children in Grades 1-5 – in terms of weight and height gain, and prevalence of underweight, stunting and wasting; (ii) adequacy of intake (as compared to Recommended Daily Allowances) of essential micro- and macro-nutrients by these children in different nutritional status categories; (iii) differences in nutritional status between certain social sub-groups (gender, tribal status, mother's educational attainment etc.).

Table 1 presents data on the actual performance of the children included in the study on basic indicators of nutritional adequacy. The study shows that the proportion of children with normal BMI is very similar between the districts, irrespective of their HDI ranking or per capita income. Normal BMI ranges from about 68 to 71% of all

¹⁰Singh JP, Kariwal P, Gupta SB, Singh AK and Imtiaz D. Nutritional status and morbidity among school-going children: A scenario from rural India. *Scholars Journal of Applied Medical Sciences (SJAMS)* ISSN 2320-6691 (Online) Sch. J. App. Med. Sci., 2014; 2(1D):379-383.

¹¹Srivastava A, Mahmood SE, Srivastava PE, Shrotriya VP and Kumar B. Nutritional status of school-age children – a scenario of urban slums in India. *Arch Public Health*. 2012; 70(1): 8.

¹²Tarleton, B., Ward, L. and Howarth, J. (2006)

[Finding the Right Support? A review of issues and positive practice to support parents with learning difficulties and their children](http://www.bristol.ac.uk/wtwpn/resources/right-support.pdf), London: Baring Foundation <http://www.bristol.ac.uk/wtwpn/resources/right-support.pdf>

children sampled in each district. Children below the normal range vary from about 29% in Yadgir to about 31% in the tribal block of HD Kote. Mandya district shows a small proportion (2%) of the children as overweight. Overall, girls tend to be less underweight than boys, at around 25%, 19% and 23% in Mysuru, Yadgir and Mandya respectively, as compared to around 38%, 34% and 35% for boys in the same districts. Older children (8-11 years) are significantly more underweight than younger children (5-7 years) at approximately 36%, 30% and 31% in Mysuru, Yadgir and Mandya respectively as compared to 25%, 26% and 28% for younger children in the same districts.

Table 1: BMI for age and Height for age status by gender, caste and age group

WHO 2007 Growth Reference								
Mysuru (HD Kote)		BMI for age %				Height for age %		
Indicator (N)		Severe Thin	Thin	Over weight	Normal	Severe Stunting	Stunting	Normal
Gender	Male (719)	11.1	27.5	0.6	60.8	4.2	19.9	75.9
	Female (925)	5.1	20.3	0.4	74.2	4.5	21.7	73.7
Caste	ST (730)	9.7	27.4	0.3	62.6	4.1	22.3	73.6
	NST (914)	6.1	20.4	0.7	72.9	4.6	19.8	75.6
Age in Categories	5-7 years (788)	4.7	21.4	0.8	73.1	3.6	19	77.4
	8-11 years (847)	10.5	25.5	0.2	63.8	5	22.9	72.1
Total	Total (1644)	7.7	23.5	0.5	68.3	4.4	20.9	74.7
Yadgir (Shorapur)								
Gender	Male (1075)	9.4	25.4	0.7	64.6	7.8	24.9	67.3
	Female (1083)	3.8	18.5	0.7	77	8.5	26.8	64.7
Caste	ST (414)	8.2	27.5	0.7	63.5	9.2	27.1	63.8
	NST (1736)	6	20.7	0.7	72.6	7.9	25.6	66.5
Age in Categories	5-7 years (878)	6.7	19.6	0.3	73.3	8.4	25.9	65.7
	8-11 years (1265)	6.5	23.7	0.9	68.9	7.7	25.8	66.5
Total	Total (2158)	6.6	21.9	0.7	70.8	8.2	25.9	66
Mandya (North Block)								
Gender	Male (749)	8.5	26.7	1.9	62.9	2.3	12.1	85.6
	Female (789)	5.3	19.3	2.7	72.8	2	15.5	82.5
Caste	NST (1538)	6.9	22.9	2.3	67.9	2.1	13.8	84
Age in Categories	5-7 years (807)	7.4	21.6	2	69	1.6	12.9	85.5
	8-11 years (726)	6.2	24.5	2.6	66.7	2.6	14.9	82.5
Total	Total (1538)	6.9	22.9	2.3	67.9	2.1	13.8	84

Out of 5344 only 5340 students are included in the analysis because either age, weight or height is missing of 4 students

The data shows even greater variance when we consider stunting. About 16% of children are stunted in Mandya district, as compared to almost 34% in Yadgir: more than double. About 8% of the children in Yadgir are severely stunted, as compared to 2% in Mandya. Although Mysuru has the highest HDI ranking among the three districts, it fares worse than Mandya on this indicator; this is probably because the block selected in Mysuru is a tribal block. Within each district, the differences between boys and girls, older and younger children and social groups is less significant than the differences in weight.

III. The linkage between Health, Nutrition and Education: how has it been framed?

First, let us ask ourselves: should there be a linkage between health, nutrition and education? How explicit should this linkage be? For many decades, prior to 1990, development was measured purely in terms of growth of the Gross Domestic Product (GDP), presuming a close correlation between national economic growth and the expansion of individual human choices. In 1990, as a result of growing criticism of the GDP-based development approach, the UNDP proposed the need for an alternative development model which came to be called the Human Development Approach.¹³ There were several reasons for this:

- (i) There was growing evidence that did not support the then prevailing belief in the “trickle down” power of market forces to spread economic benefits and end poverty;
- (ii) The human costs of Structural Adjustment Programmes became more apparent;
- (iii) Social ills (crime, weakening of social fabric, HIV/AIDS, pollution, etc.) were still spreading even in cases of strong and consistent economic growth; and
- (iv) A wave of democratisation in the early 90’s raised hopes for people-centred models.

¹³<http://hdr.undp.org/en/humandev>.

This broader human development approach was defined as the process of enlarging people's choices and enhancing human capabilities and freedoms, enabling them to live a long and healthy life, have access to knowledge and a decent standard of living, and participate in the life of their community and decisions affecting their lives. It was from this approach that the Human Development Index (HDI) emerged as a convenient, single figure, statistical measure of human development.

The philosophy behind the HDI was partially inspired by the work of Amartya Sen, who amongst others, has argued that the index is a somewhat crude measure of human development, but that it was less crude than a simple, single indicator, measure such as the GDP. According to Sen, although the HDI has its flaws, it is concerned with the "basic development idea: namely, advancing the richness of human life, rather than the richness of the economy in which human beings live, which is only a part of the human experience."¹⁴

A recent UNDP report titled 'Equity, Inequality and Human Development in a post-2015 Framework' (Melamed and Samman, 2013) situates human development squarely within Sen's capability approach.¹⁵ This is now widely recognized as the critical theoretical framework about well-being, development and justice. It purports that freedom to achieve well-being is a matter of what people are able to do and to be, and thus the kinds of life they are effectively able to lead. Freedom is key for Sen and concerns the actual capabilities that one is afforded, not just with individual control and choice. On this model freedom includes social and political policies which engender greater or lesser freedoms. To illustrate this Alkire uses Sen's example of 'freedom from malaria': "if, given the choice, we would choose to live in a malaria-free environment, then *ceteris paribus* a public programme to drain malaria ponds does indeed enhance our freedom, even if we were not in fact asked, because in the absence of this public programme we would not have the effective freedom to live in a malaria-free

¹⁴Sen A. <http://asiasociety.org/amartya-sen-more-human-theory-development>.

¹⁵Melamed C and Samman E. Equity, inequality and human development in a post-2015 framework. UNDP, Human Development Report Office; 2013.

environment” (Alkire, 2002, p7).¹⁶ Thus freedom in the capability approach indicates more than simply autonomous, individual choice as championed by the liberal model. Freedom in this approach is conceptualized as positive as well as negative, hence “‘freedom from hunger’ or ‘being free from malaria’ need not be taken to be just rhetoric...there is a very real sense in which the freedom to live the way one would like is enhanced by public policy that transforms epidemiological and social environments” (Nussbaum and Sen, 1993).¹⁷

IV. The linkage between Health, Nutrition and Education: what is the evidence?

How does education impact health and nutrition?

The empirical evidence establishes a strong link between these three sectors. Studies conducted in different parts of the world show that there is a strong and positive linkage between education and health. This association has been established irrespective of life stages (child survival, health among adults and older people), measurement of health and/or education used, diverse methodologies and social settings. A longitudinal study conducted among a cohort of young adults in the US shows that for individuals born between 1914 and 1939, one additional year of education lowers the probability of dying by 3.6 percentage points.¹⁸ This applies to older adults too where the relationship between educational attainment and health, measured as functional ability among older people in the US showed a positive and significant relationship (0.10 level of significance). Another study among the Danish workers shows that the longer the period of education, the better the health conditions measured through self-reported health conditions, Body Mass Index and incidence of

¹⁶Alkire S. Dimensions of human development. World Development, Volume 30, Issue 2, February 2002, pp. 181–205.

¹⁷Nussbaum M and Sen A. The quality of life. Oxford Scholarship Online, ISBN-13: 9780198287971; 1993.

¹⁸Lleras-Muney A. The relationship between education and adult mortality in the US. <http://www.econ.ucla.edu/alleras/research/papers/mortalityrevision2.pdf>; 2004.

smoking.¹⁹In a study on ‘Does schooling improve adult health?’ in 2003 conducted among the white males in different states in the USA, the findings show that there is a positive association between opportunities to attend school (this was measured through unemployment rates in different states assuming that this impacts opportunities for schooling) and health measured through work limiting health conditions and lesser need for personal care.²⁰ Similar kind of evidence on the strong linkages between the impacts of education health is reinforced in several other studies.

How does nutrition impact health?

Similarly, there is a strong link established between education and nutrition. Low weight-for-age has been found to raise the relative risk of dying due to several disease conditions, and a significant proportion of deaths among young children can be attributed to malnutrition.²¹ An article in the Lancet (2003) found this as well;²² and a World Health Organization (WHO) report (2005) found undernutrition to be the underlying cause of 53% of all deaths worldwide of children under 5 years of age.²³ The long-term physiological impacts of childhood malnutrition are well known: they range from changes in the autonomic nervous system to higher risk of hypertension and insulin-resistance in adulthood. There is also evidence that it can adversely impact brain development, cognitive ability and school achievement.²⁴ Time magazine (April 11, 2013) reported that a study in Barbados found that adults who had experienced

¹⁹Fletcher JM, Sindelar JL, Yamaguchi S. Cumulative effects of job characteristics on health. *Health Econ.* 2011 May; 20(5): 553–570.

²⁰Arkes J. Does schooling improve adult health? Rand Corporation, DRU-3051; 2003.

²¹Caulfield LE, de Onis M, Blossner M and Black RE. Malnutrition as an underlying cause of death associated with diarrhea, pneumonia, malaria and measles. *American Journal of Nutrition*; July 2004: Vol 80, No 1 193-198.

²²Black RE, Morris SS and Bryce J. Where and why are 10 million children dying every year? [Volume 361, Issue 9376](#), 28 June 2003, Pages 2226–2234.

²³Bryce J, Boschi-Pinto C, Shibuya K and Black RE. and the WHO Child Health Epidemiology Reference Group. WHO estimates of the causes of death in children. [Volume 365, Issue 9465](#), 26 March–1 April 2005, Pages 1147–1152.

²⁴Martins, VMM, Toledo Francio, TMM, Grillo LP, Franco MC, Martins P, Clemente APG, Santos CDL, Vieira MF and Sawaya AL. Long-lasting effects of undernutrition. *Int J Environ Res Public Health.* 2011 Jun; 8(6): 1817–1846.

childhood hunger tended to be more anxious, less sociable, less interested in new experiences and more hostile than those who were well-nourished throughout childhood.²⁵

How do health and nutrition impact education?

Sridhar (2008) points to short- and long-term pathways by which ill-health can impact cognitive development and school participation.²⁶ There is evidence that in the short-term, poor health can lead to poor participation, irregular attendance and high rates of school dropout. Poor health and nutrition impacts school children in several important ways: first, evidence shows that parasitic infections and repeated bouts of illness are major reasons for school absenteeism. Miguel and Kramer (2004) found that deworming of children in Kenya improved school attendance;²⁷ second, poor nutrition in childhood can have a severe impact on the child's physical growth, leading to stunting, low energy levels and low immunity which leaves children vulnerable to frequent bouts of illness. For example, iodine deficiency can lead to cretinism, and Vit A deficiency contributes to measles morbidity and mortality as well as frequent diarrheal disease and even blindness;²⁸ and finally, poor nutrition in childhood has a severe impact on the ability to learn. Iron deficiency, for example, leads to cognitive impairment.²⁹ In addition, there is an inter-twining of biological and cultural forces: so, for example, participation of girls in education is often affected by the taboos associated with menstruation, it exacerbates iron-deficiency anemia which impacts learning outcomes, and may even signal early marriage which spells the end of schooling for most girls.

²⁵ Szalavitz M. How childhood hunger can change adult personality. TIME Magazine, April 11, 2013.

²⁶ Sridhar D. Linkage between nutrition, ill-health and education. UNESCO; 2009/ED/EFA/MRT/PI/16; 2008.

²⁷ Miguel E and Kramer M. Worms: identifying impacts on education and health in the presence of treatment externalities. *Econometrica*, Vol 72, No 1; 2004.

²⁸ Sommer, A. & West, K. P., Jr. (1996) Vitamin A Deficiency: Health, Survival and Vision. pp. 19–250, Oxford University Press, New York, NY.

²⁹ Grantham-Mcgregor S and Ani C. A review of studies on the effect of iron deficiency on cognitive development of children. *Journal of Nutrition*; February 2001.

In the long-term, promoting good health among children can significantly impact their future welfare. Poor health and nutrition can be the result of poverty and poor socio-economic status: evidence from China, for example, shows how the nutritional environment in the home is associated with household socioeconomic status and which predicts children's school performance. It is a significant mediator of poverty effects on schooling for children in early primary grades. The reverse is also true: Shultz (2002) found that each centimeter gained in height due to improved nutrition for children in Ghana and Brazil lead to a wage differential as adults of 8-10%.³⁰ The impact of repeated bouts of malaria as a child can have an even more dramatic effect: a multi-country study in USA, Mexico, Colombia and Brazil found that the wage differential as adults for children protected from malaria is as high as 50%.³¹ This finding has been confirmed in a study conducted in India as well.³² The impact of childhood anemia on future productivity has been estimated in terms of income foregone by between 2% in Honduras and almost 8% in Bangladesh.³³ Thus there are significant short- and long-term gains of ensuring good health of school-going children: it enhances the chances of their staying in school, it improves their chances of learning and retaining what they have learned, and it improves their life chances through externalities such as increased height.

Is the relationship causal?

Is the relationship between education and health causal? How does education mediate between health and other important socio-economic indicators like occupation, income, livelihoods, gender etc.? Is the association between the two linear? Are the health benefits of education always direct? The existing literature confronts

³⁰ Schultz PT. Wage gains associated with height as a form of health human capital. Yale Economic Growth Center discussion paper No. 841; 2002.

³¹ Bleakley H. Disease and development: evidence from hookworm eradication in the American south. *Q J Econ.* 2007; 122(1): 73–117.

³² Cutler D, Fung W, Kremer M, Singhal M and Vogl T. Early life malaria exposure and adult outcomes: evidence from malaria eradication in India. *American Economic Journal: Applied Economics* 2; 2010.

³³ Horton S and Ross J. The economics of iron deficiency. *Food Policy* (28); 2003.

these questions while examining the mechanisms or pathways between the education-health linkages. While the large body of literature unequivocally echo a positive association between education and health, there is less uniformity on the causal nature of linkage and the pathways of influence. While one set of literature seeks to establish the causal nature of linkages through statistical sophistication, few other studies question the causal nature of the linkage. The latter drawing evidence from studies conducted in Norway and UK argue that more than education, occupation (and income) is a better predictor of mortality risks and vulnerability to ill health. But occupation is itself determined by education!

Empirical studies on an examination of pathways of influence of maternal education on child health offer different sets of evidence. One set of studies conducted in the Indian context (Punjab and Delhi) argue that mothers' education influences better child health through enhancing female autonomy in decision making (in this context education necessarily intersects with other factors including a culture that allows effective decision making power among women as in Sri Lanka or Kerala/Tamil Nadu). One of the studies conducted among two communities from UP and Tamil Nadu living in the same neighborhood shows that the differential child mortality could be explained due to greater autonomy of mothers from Tamil Nadu than UP. Another set of studies show how education translates in better health related knowledge and communication skills that in turn impact child health. The latter is supported by a recent study (2004-2005) that draws on data from 5,287 households in the Human Development Survey data in India. There is an increasing acknowledgement that the impact of education on health may not necessarily be linear and more research is needed to understand how education intersects with other socio-economic factors to impact health. There is an additional acknowledgement that the mechanisms of influence may vary across different cultural contexts.

V. Interventions to enhance Health, Nutrition and Education: Lessons for the future

In order to establish a social safety net for the poor and to protect them against the worst ravages of poverty, in terms of their basic health, nutrition and education needs, the government has implemented several programs.

The first set of programs are those that directly address these basic needs, which include:

The Integrated Child Development Services (ICDS), launched in 1975 with the objective of improving the nutritional and health status of children in the age group of 0-6 years to reduce the incidence of mortality, morbidity and malnutrition and enhance the capability of mother to look after the health and nutritional needs of the children. The program covers about 89.3 million children and pregnant/lactating mothers. Services are provided at designated Anganwadi Centers (AWCs), where an Anganwadi Worker (AWW) and a helper cater to the nutrition and early child development needs of the children enrolled in the center. Apart from ensuring the provision of a hot cooked meal – the responsibility of the helper – the centers also provide nutrition education and supplementation, immunization services and pre-school education. There are currently close to 1.5 million AWCs across the country providing such services.

There is also the Mid-Day Meal Scheme, providing a hot meal to school-going children. Children in government and government-aided primary schools are provided fresh cooked meals on all working days and for at least 200 days in a year. Meals have a stipulated nutritional value, in terms of the number of calories they should provide, the amount of protein, and the specific composition of the meal in terms of rice, dal, vegetables and so on. About 120 million children are covered across the country by this program every year.

Then we have the School Health Program. This program addresses the health needs of school going children and adolescents in the 6-18 year age group in government and government-aided schools. It provides for health screening twice a year and early management of disease and disability. The focus is to address the physical and mental health needs of children, provide micronutrient supplementation and promote physical activities. The program also provides counselling and immunization, weekly iron folic acid supplementation, along with deworming twice a year. More than 70 million students are covered annually by this program.

The second set of programs are those that are sensitive to the needs of school children, but address the issues indirectly, which include:

The Targeted Public Distribution System that promotes food security in poor households, by providing subsidized food grains to the disadvantaged populace. It will also facilitate operationalization of the proposed National Food Security Act which will then provide statutory food security to the vulnerable.

The Total Sanitation Campaign, aimed at reducing open defecation, now well-recognized to contribute to malnutrition; and there are many other programs which indirectly address the well-being of children and impact their nutrition, increase school enrolment (particularly for girls) and raise the age at marriage.

Finally, there are investments in creating an enabling environment, such as:

The National Rural Employment Guarantee Scheme. This program aims at enhancing the livelihood security of people in rural areas by guaranteeing hundred days of wage-employment in a financial year, and to provide poor families with an assured income which would contribute to household food security. The Act guarantees 100 days of wage employment in a financial year to a rural household. The Act covers 615

districts and has provided employment of about 2900 million person days in 2010-11. The Scheme also has the potential of upgrading infrastructure and increasing agricultural productivity thereby altering the geography of poverty, empowering women and preventing distress migration.

Some issues to think about as we go forward

The linkage between health, nutrition and education is most critical for the school-going child – this is something that has been recognized even by the programs that I just mentioned. The ethical imperative of compulsory primary schooling – which ensures that a child spends a bulk of the day in school – is to ensure that the mission of schools is broader than simply teaching academic skills. In 1904, Robert Hunter wrote, “It is utter folly, from the point of view of learning, to have a compulsory school law which compels children, in that weak physical and mental state . . . to sit at their desks, day in and day out for several years, learning little or nothing . . . because hungry stomachs and languid bodies and thin blood are not able to feed the brain”.

The programs that have been implemented so far to address the needs of the school-going child have had an impact; but we still have a long way to go. The issue with all the programs we have currently – whether it is the ICDS or the School Health Program or the MDMS – is that the discussion around them is largely ‘program-centric’. How can we make the program work better? Is the program utilizing resources effectively? Are there leakages in the program? What capacity building is required for functionaries to deliver the program better? What are the logistical arrangements and can they be made more efficient? What is the program’s impact – has it improved key indicators? It’s all about the program.

There needs to be a paradigm shift if we want to change business as usual. We have to move away from ‘program centric’ thinking to ‘beneficiary centric’ thinking.

Who is the beneficiary that we have been talking about? The beneficiary of the linkage between health, nutrition and education is the primary school-going child. The child between the ages of 5 and 14. When we get caught up thinking about program-level improvements, we lose sight of whether or not the program is even reaching the end-beneficiary. We can have the most beautifully designed ICDS program, but if the poorest and most marginalized children, those who need the program the most, are not reaching the Anganwadi Center, then that program is a failure. The same goes for the School Health Program or the MDMS.

Many people have raised a plea to make programs community-centric. The whole discussion on decentralization and the victory of the 73rd Amendment to the Constitution lies in the fact that communities have been given a voice; communities have an opportunity to express their needs; communities have been empowered through their elected representatives to demand goods and services that provide for their basic needs. This is indeed a move in the right direction, and goes a long way towards making services responsive to felt needs.