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Forging Effective Strategies to Combat Iron Deficiency

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Economic Rationale for Iron Deficiency Control and Prevention

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Reducing iron deficiency and iron deficiency anemia and their health effects sustainably is a global economic priority, and should be so stated at the General Assembly Special Session on Children in September 2001. Iron deficiency limits the human and economic potential of half the developing world, but it is also a challenge that can be addressed cost-effectively through an integrated approach that includes targeted (selective) supplementation, education, food fortification, and plant breeding. Addressing multiple nutrients in all interventions raises benefits and lowers unit costs. This would involve strengthening the links between nutrition surveillance and supplementation, creating regional communications strategies, and launching a global agro-industrial partnership between the public and private sectors to influence food production strategies. The economic costs of iron deficiency are at least 4% of the gross domestic product in South Asia, or \$5 billion per year for that region, but few policymakers are aware of its impact on economic growth through direct and indirect pathways. Cognitive losses to children are the dominant economic sacrifice. Maternal deaths from severe anemia are a tragic and preventable loss, often leading to preschoolers' deaths. A range of effective investments are available that improve intakes and hemoglobin status and contribute to size and stature of the population (direct effects) and to cognitive ability and schooling achievements (indirect effects). Investments in improved iron nutrition enhance productivity, efficiency, and equitable impacts on the poor. Economic growth and poverty reduction can be achieved through iron deficiency reduction. Governments should be reminded, through public policy advocacy, that both the World Summit for Children goal and the International Development Goals for maternal and child mortality reduction and educational achievement depend on iron deficiency reduction. Both governance and human rights concerns are involved.

Poverty reduction is best sustained when the lives of young children are transformed. Iron deficiency reinforces child poverty and reduces capacities to earn and learn, with devastating effects on the long-term likelihood of increasing wages and investments in the 'quality child' of the next generation. Investment in iron-replete children, especially in the early and primary school years, yields long-run benefit streams to individuals, families and economies. Coordinated health and nutrition interventions targeting mothers' and young infants' hemoglobin status protect the young child's biological integrity; reduce mortality, morbidity, and disability; and contribute substantially to cognitive and child development. These investments have a preventive character, because they improve efficient use of the state's resources in public education, public health, and social and child protection, because they reduce illness and school dropout rates. Well-developed children will be more productive, contributing citizens.

The limitations of conventional approaches to eliminating iron deficiency drive the search for a sustainable paradigm. High iron deficiency rates are usually associated with high prevalence

of low birth weight, underweight and stunted preschoolers. Hence, correcting all three problems requires attention by the food industry to providing affordable and higher quality diets to the poor, with the dual goals of enhancing mental acuity of children and long-term effective demand for industrialized products. The public and private sectors must embark on modernization of the food industry in developing countries and reorientation of the international agricultural research complex so that iron-enriched essential foods (beginning with rice) will be affordable and accessible to the poor. It is recommended that this partnership take special care of the needs of poor children in developing areas. The costs of chronic iron under nutrition, availability of cost-effective strategies for sustainably reducing iron deficiency and iron deficiency anemia, and benefits of sustained iron nutrition improvement to individuals, families and nations are reviewed. The roles of multinutrient supplementation, food fortification, plant breeding and biotechnology, both actual and imminent, are described. In summary, a recast Green Revolution directed to dietary quality may be the key to enhancing the learning and earning capacity of young people of the new millennium in developing areas. Links between research and advocacy are suggested. Regional dialogue for consensus building and concerted action at national level is advocated and described for Latin America and Asia.