SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Young Children as a Basis for Sustainable Development

Issue Brief

Prepared by the Thematic Group on Early Childhood Development, Education, and Transition to Work

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Children are a common basis for all dimensions of sustainable development. No advances in sustainable development will occur in coming decades without multiple generations contributing to societal improvement. Moreover, beyond sheer survival, children have a right to thrive, develop to their full potential, and live in a sustainable world.[1]

In this statement we present the rationale for putting children at the center of an integrated set of post-2015 Sustainable Development Goals. Many have argued that the challenges presented by sustainable development are integrated. Goals in the areas of poverty reduction, health, education, sustainable agriculture and energy, gender equality and social inclusion, and development within planetary boundaries must be tackled together, not separately. An inter-generational vision of societal development must underlie these goals; without this vision for the next generation, there will be no capacity for nations to actually bring about sustainable development.

Recommendation of the U.N. Sustainable Development Solutions Network for Target and Indicators on Early Childhood Development

Target: All children under the age of 5 reach their developmental potential through access to quality early childhood development programs and policies.

Indicator: Proportion of children receiving at least one year of a quality pre-primary education program.

Indicator: Early Child Development Index, based on existing UNICEF and other measures, encompassing children's development across language/ literacy, numeracy, physical, socio-emotional and cognitive development.

The SDSN also recommends disaggregation by age, distinguishing key indicators related to poverty eradication, water and sanitation, social protection, health and the right to development for the ages under one year (infants), 1-4 years 11 months (pre-school age), 5-14 years (school age), and childbearing age.

[1] Chan, M. (2013). Linking child survival and child development for health, equity and sustainable development. *The Lancet. 381*, 1514-1515.

THE LINK BETWEEN EARLY CHILDHOOD DEVELOPMENT AND SUSTAINABLE DEVELOPMENT

Children's health, learning and behavior during the early years are the foundation not only for later school success and completion, but also their capacity to participate in community, workplace and society. Young children's growth and development, in addition, is profoundly shaped by the opportunities for learning, education, economic resources and interactions provided by adults – whether they encounter these adults in home, care, service or community contexts.

A powerful set of neuroscientific and economic evidence over the last 20 years now shows that early childhood is a critical stage of human development. The foundations of brain architecture and functioning, and subsequent lifelong developmental potential, are laid down in the early years in a process that is exquisitely sensitive to external influence. Early experiences in the home, in other care settings, and in communities interact with genes to shape the developing nature and quality of the brain's architecture. The growth and then environmentally-based pruning of neuronal systems in the first years support a range of early skills, including cognitive (early language, literacy, math), social (empathy, prosocial behaviors), persistence, attention, self-regulation and executive function skills (the voluntary control of attention and behavior).[2] Each of these skills, measured in early childhood, are predictive of school success and completion; higher earnings; active participation in communities and society; and reduced odds of delinquency, crime, and chronic and non-communicable disease.[3]

Later skills – in schooling; in employment; in family life -- build cumulatively upon these early skills. Therefore, as the Nobel-prize-winning economist James Heckman has shown, investment in early learning and development results in greater cost savings than investment later in the life cycle.[4]

THE STATE OF THE WORLD'S YOUNG CHILDREN

Despite the well-established importance of the early years, each year 7 million children worldwide do not survive to their fifth birthday, and over 200 million children who do survive

[2] Learning Metrics Task Force (2013). *Toward universal learning: What every child should learn.* Washington, DC: Brookings Institution; Harvard Center on the Developing Child (2007). *The science of early childhood development: Closing the gap between what we know and what we do.* Cambridge, MA: Author.

[3] Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., ... & Japel, C. (2007). School readiness and later achievement. *Developmental psychology*, *43*, 1428. Blair, C., & Razza, R. P. (2007). Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child development*, *78*, 647-663. Shonkoff, J. P., Boyce, W. T., & McEwen, B. S. (2009). Neuroscience, molecular biology, and the childhood roots of health disparities. *JAMA, 301*, 2252-2259. Caspi, A., Moffitt, T. E., Newman, D. L., & Silva, P. A. (1996). Behavioral observations at age 3 years predict adult psychiatric disorders: Longitudinal evidence from a birth cohort. *Archives of General Psychiatry*, *53*, 1033-1039.

[4] Heckman, J. J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, *312*, 1900-1902. Young, M.E. (forthcoming). *Addressing and Mitigating Vulnerability across the Life Cycle: The Case for Investing in Early Childhood*. United Nations Development Programme, Human Development Report Office, Occasional Papers Series.Harvard Center on the Developing Child (2011). *The foundations of lifelong health are built in early childhood.* Cambridge, MA: Author. Young, M.E. (2002). *From early child development to human development.* Washington, DC: World Bank. Consultative Group on Early Childhood Care and Development (2012). *Placing early childhood on the global agenda.* Toronto: Ryerson University.

do not reach their developmental potential in early childhood, as indexed by risks such as stunting or exposure to absolute poverty.[5] Indeed, a range of powerful risk factors such as maternal undernutrition; lack of recommended breastfeeding; lack of access to clean water and sanitation; lack of stimulation in the home; and lack of learning opportunities in many low- and middle-income countries lead to this loss of human potential.[6] Such experiences can get "under the skin," overwhelming the young body's stress mechanisms and immune functions. These 200 million children thus face high odds of early mortality; school failure; early pregnancy; joblessness; and chronic and costly diseases across the lifespan.[7] This represents an enormous and perhaps the primary challenge to global sustainable development.

THE EVIDENCE ON ESSENTIAL EARLY CHILDHOOD DEVELOPMENT PROGRAMS AND POLICIES

To address the growing challenges of environmental crises, poverty and inequality, and domestic and armed conflict, a transformative approach to early childhood development is required. In low-, middle-, and high-income countries alike, ECD services encompassing proven approaches to health, education, social protection and child protection are some of the most cost-effective interventions for a range of long-term outcomes important to society, including completed schooling, higher lifelong earnings, and reduced crime.[8] These programs begin before birth and include comprehensive family planning, complete birth registration, and a package of proven health services encompassing preventive and curative care.[9] They include nutrition programs that integrate an emphasis on supporting stimulating and responsive parenting, a combination of services with powerful effects on both health and learning.[10] By preprimary age, they include quality learning and education programs, whether

[5] Grantham-McGregor, S., Cheung, Y. B., Cueto, S., Glewwe, P., Richter, L., & Strupp, B. (2007). Developmental potential in the first 5 years for children in developing countries. *The Lancet*, *369*, 60-70; UNICEF (2012). *Levels and trends in child mortality: Report 2012.* New York: Author.

[6] Black, R.E., Victora, C., Walker, S.P., Bhutta, Z.A., Christian, P., DeOnis, M., Ezzati, M., Grantham-McGregor, S., Katz, J., Martorell, R., & Uauy, R., and the Maternal and Child Nutrition Study Group (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet.* Walker, S. P., Wachs, T. D., Grantham-McGregor, S., Black, M. M., Nelson, C. A., Huffman, S. L., ... & Richter, L. (2011). Inequality in early childhood: risk and protective factors for early child development. *The Lancet*, *378*, 1325-1338.Aber, J.L., Lombardi, J., Klaus, S., & Campion, K. (2013). *A new global development goal for the world's youngest children.* Washington, DC: Institute of Medicine / National Academy of Sciences.

[7] Shonkoff, J. P., Richter, L., van der Gaag, J., & Bhutta, Z. A. (2012). An integrated scientific framework for child survival and early childhood development. *Pediatrics*, *129*, e460-e472.; Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L., ... & Wood, D. L. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, *129*, e232-e246.

[8] Duncan, G. J., & Magnuson., K. (2013). Investing in preschool programs. *Journal of Economic Perspectives*, *27*, 109-132; Lawrence Schweinhart et al., Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40 (Ypsilanti: High/Scope Press 2005); Frances Campbell et al. (2002). Early Childhood Education: Young Adult Outcomes from the Abecedarian Project. *Applied Developmental Science, 6*, 42-57. Kagitcibasi, C., Sunar, D., & Bekman, S. (2001). Long-term effects of early intervention: Turkish low-income mothers and children. *Journal of Applied Developmental Psychology*, *22*, 333-361.

[9] Bhutta, Z. A., Chopra, M., Axelson, H., Berman, P., Boerma, T., Bryce, J., ... & Wardlaw, T. (2010). Countdown to 2015 decade report (2000–10): taking stock of maternal, newborn, and child survival. *The Lancet*, *375*(9730), 2032-2044. Campbell, O. M., & Graham, W. J. (2006). Strategies for reducing maternal mortality: getting on with what works. *The Lancet*, *368*, 1284-1299.

[10] Black, M., et al. (2014). *Every child's potential: Integrating nutrition, health and psychosocial interventions to promote early childhood development (special issue). Proceedings of the New York Academy of Sciences.* Yousafzai, A. K., Rasheed, M. A., & Bhutta, Z. A. (2012). Annual Research Review: Improved nutrition–a pathway to resilience. *Journal of Child Psychology and Psychiatry, 54,* 367-377. Black, M. M., & Aboud, F. E. (2011). Responsive feeding is embedded in a theoretical framework of responsive parenting. *The Journal of Nutrition*, *141*, 490-494.

implemented in home-based or center-based settings, with continued attention to health and social and emotional development. These solutions to maximize children's future contributions sustainable development are available and known: we refer the reader to recent reviews of this strong and extensive evaluation science base.[11]

The economic benefits of investing in young children globally are well-established. Quality preprimary education has been shown to produce substantial economic benefits, including higher rates of primary and secondary completion, higher earnings in adulthood, and lower crime.[12] Raising preschool enrollment to 50% in low- and middle-income countries has been estimated to result in benefits of over $33 billion US, with a benefit-cost ratio of between 7.8 and 17.6, depending on the discount rate.[13] A nutrition and parenting stimulation intervention for infants and toddlers resulted in impacts 20 years later in raising IQ; reducing anxiety, depression and violence; and increasing earnings by 50%.[14] Such services contribute substantially to a broader development agenda to fight poverty and inequality.[15] Not acting on these proven solutions -- not integrating them into progress on global targets and indicators -- will thus have substantial costs to societies.

The SDSN Thematic Workgroup on Early Childhood Development, Education and the Transition to Work has put forward a target and indicators that reflect the comprehensive nature of early development across physical, cognitive, language, socio-emotional domains and realize children's rights to their full developing humanity (see sidebar).[16] Governance and

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[11] Engle, P. L., Fernald, L. C., Alderman, H., Behrman, J., O'Gara, C., Yousafzai, A., De Mello, M.C., Hidrobo, M., Ulkuer, N., Ertem, I., Iltus, S. and the Global Child Development Group (2011). Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *The Lancet*, *378*, 1339-1353; Britto, P.R., Engle, P., & Super, C. (Eds.). (2013). *Handbook of global early childhood development research and its impact on policy.* New York: Oxford University Press. Chavan, M., Yoshikawa, H., & Bahadur, C. (2013). *The future of our children: Lifelong, multi-generational learning for sustainable development.* New Delhi, Paris, and New York: U.N. Sustainable Development Solutions Network, Report of Thematic Workgroup on Early Childhood Development, Education and the Transition to Work.

[12] Heckman J.J., Moon, S., Pinto, R., Savelyev, P., & Yavitz A. (2010). The rate of return to the HighScope Perry Preschool Program. *Journal of Public Economics, 94*(1-2), 114-128. Karoly, L. A., Kilburn, M. R., & Cannon, J. S. (2006). *Early childhood interventions: Proven results, future promise*. Santa Monica, CA: Rand Corporation. Yilman H. & Yazihan N. (2010). *Early childhood development: Cost benefit analysis of ECD policies and fiscal space on combating child poverty in Turkey.* UNICEF Annual Report for Turkey. Behrman J.R., Cheng, Y. & Todd P. (2004). Evaluating preschool programs when length of exposure to the program varies: A nonparametric approach. *Review of Economics and Statistics*, 86 (1), 108-132.

[13] Engle, P. L., Fernald, L. C., Alderman, H., Behrman, J., O'Gara, C., Yousafzai, A., De Mello, M.C., Hidrobo, M., Ulkuer, N., Ertem, I., Iltus, S. and the Global Child Development Group (2011). Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *The Lancet*, *378*, 1339-1353.

[14] Gertler, P., Heckman, J., Pinto, R., Zanolini, A., Vermeerch, C., Walker, S., Chang, S.M., & Grantham-McGregor, S. (2013). *Labor market returns to early childhood stimulation: A 20-year follow up to an experimental intervention in Jamaica.* World Bank Policy Research Working Paper no. 6529.

[15] United Nations, High-Level Panel of Eminent Persons on the post-2015 Development Agenda (2013). *A new global partnerships: Eradicate poverty and transform economies through sustainable development.* New York: United Nations. Sustainable Development Solutions Network (2013). *An action agenda for sustainable development: Report for the U.S. Secretary General.* New York and Paris: U.S. Sustainable Development Solutions Network. Samuelsson, I.P., & Kaga, Y. (2008). (Eds.). *The contribution of early childhood education to a sustainable society.* Paris: UNESCO.

[16] U.N. Sustainable Development Solutions Network (2014). Sustainable development goals, targets and indicators. New Delhi, Paris, and New York: Leadership Council, U.N. SDSN. Chavan, M., Yoshikawa, H., & Bahadur, C. (2014). *The future of our children: Lifelong, multi-generational learning for sustainable development.* New Delhi, Paris, and New York: U.N. Sustainable Development Solutions Network. Aber, J.L., Lombardi, J., Klaus, S., & Campion, K. (2013). *A new global development goal for the world's youngest children.* Washington, DC: Institute of Medicine / National Academy of Sciences. Consultative Group on Early Childhood Care and Development (2013). *A transformative solution: Reducing poverty and inequality through a global early childhood development goal.*

implementation approaches to assure that the evidence-based programs to support these outcomes also exist to guide nations to ensure maximum results on their investment in young children.[17]

In addition to these indicators specific to young children, it is critically important that indicators tracking the entire range of sustainable development goals be disaggregated by age (early childhood; primary school age; secondary school age; the transition to adulthood; child-bearing age and beyond). Without this disaggregation, progress towards sustainable development for the most vulnerable cannot be measured. For example, stunting is well-established and difficult to reverse by age 2. Rates of household poverty are the highest for families with young children, and harmful effects of poverty are also largest when experienced in the early years.[18] Without disaggregation by age of poverty indicators, the impact of social protection on the most vulnerable will be unknown. Similarly, efforts to increase gender equality; reduce population burdens on the planet; provide improved water sources and sanitation; and prevent HIV infection all have particularly powerful and long-lasting influences between birth and school entry. Disaggregating indicators by age must therefore distinguish the birth to 2 and 2- to 5-year age periods, in addition to primary- and secondary-school ages.

The large number of the world's children starting life at severe risk and experiencing toxic stress threatens all other goals of sustainable development.[19] The capacity of a nation to build sustainable systems and infrastructure, innovate and invest in technology, and grow while reducing impact on the earth's resources all depend on a workforce with the skills that are foundational to productivity, civic engagement, and innovation. Not pursuing an early childhood development goal, moreover, would not only compromise achievement of all other sustainable development goals, but also violate the right of every child to develop to his or her potential. It is for these reasons that children must be at the very center of the Sustainable Development Goals.

[17] Vargas-Barón, E. (2013). Building and strengthening national systems for early childhood development. In P.R. Britto, P. Engle, & C. Super (Eds.), *Handbook of early childhood development research and its impact on global policy* (pp. 443-466). New York: Oxford University Press; Britto, P.R., Yoshikawa, H., Van Ravens, J., Ponguta, L.A., Oh, S.S., Dimaya, R., & Seder, R.C. (2013). *Understanding the governance of early childhood development and education systems in low-income countries (UNICEF Innocenti Research Centre Working Paper 2013-07).* Florence, Italy: UNICEF Innocenti Research Centre.

[18] Duncan, G. J., Ziol-Guest, K. M., & Kalil, A. (2010). Early-Childhood Poverty and Adult Attainment, Behavior, and Health. *Child development*, *81*, 306-325; Yoshikawa, H., Aber, J. L., & Beardslee, W. R. (2012). The effects of poverty on the mental, emotional, and behavioral health of children and youth: Implications for prevention. *American Psychologist*, *67*, 272-284.

[19] Consultative Group on Early Childhood Care and Development (2012). *Placing early childhood on the global agenda.* Toronto: Ryerson University. UNICEF (2013). *Istanbul declaration on early childhood development.* Istanbul: UNICEF Turkey. Consultative Group on Early Childhood Care and Development (2010). *Four cornerstones to secure a strong foundation for young children.* Toronto: Ryerson University.