PATHWAYS OUT OF ADVERSITY EXPLORATORY STUDY

Introduction

Early childhood is one of the most critical periods in determining a person's health and educational outcomes across the life course (Anderson et al., 2003; National Scientific Council on the Developing Child [NSCDC], 2007). Wise investments in children and families are therefore foundational to a healthy, productive, and economically prosperous nation. As children grow up to become tomorrow's adult workers, caregivers, taxpayers, and citizens, the returns will accrue across generations. By the same token, missed opportunities during early childhood have lasting consequences for individuals, as well as the nation (NSCDC, 2007).

More than 200 million children under five years of age in low- and middle-income countries are not developing to their full potential (Grantham-McGregor et al., 2007). The majority of these disadvantaged children live in Southeast Asia. Children who do not develop to their full potential suffer long-term negative health effects, do poorly in school, and are more likely to transfer these detrimental outcomes to the next generation. The resulting loss of human potential corresponds with a more than 20 percent deficit in adult income, profoundly impacting national economic security and public health and impeding progress toward the Sustainable Development Goals (SDGs) (Britto et al., 2016; Grantham-McGregor et al., 2007; Shonkoff, Radner, & Foote, 2016; Walker et al., 2007).

The 2016 Lancet Childhood Development Series attributes this gap in human potential largely to childhood development interventions that fail to apply new scientific knowledge on nurturing care and the biology of adversity and that lack a multisectoral approach extending across critical periods in the early life course (Britto et al., 2016; Shonkoff et al., 2016). The Childhood Development Series identifies nurturing care as consisting of caregiving (health, hygiene, and feeding); stimulation (talking, singing, and playing); responsiveness (early bonding, attachment, trust, and sensitivity); and safety (Britto et al., 2016). While child development is often researched within a broad context, nurturing care, early cognitive development, and the childhood experience of adversity have been largely neglected in research, policy, and programs until recently (NSCDC, 2007; Walker et al., 2007). The new SDGs, which, for the first time, include child development as a target (#4.2), are assisting in the prioritization of these research areas among scientists, donors, and government leaders (Dua et al., 2016).

Without richer data about children's exposure to adversity, and the factors that build children's resilience to adversity in different contexts, governments struggle to design, target, and appropriately resource strategies that safeguard children's healthy development. As governments such as Indonesia commit to prioritizing early childhood development through various initiatives, from building preprimary schools and national child protection systems, to delivering child-focused social assistance programs and improving nutrition, there is an increasingly urgent need to generate learning about what works best for different children over time (Denboba et al., 2015; UNICEF, BAPPENAS, and SMERU, 2010; Walker et al., 2007). This will require governments to invest in more large-scale, multisectoral research programs that investigate early childhood adversity within their country.

The current landscape of Indonesia's plans for education reform

The national education sector plays one of the most crucial roles in child development in Indonesia, paving the way for other national youth development interventions and setting the stage for the future of the country. The education components of the 2015-2019 Medium-Term

Development Plan (RPJMN) prioritize compulsory 12-year education and increased access to, and quality of, early childhood education (Government of Indonesia [GoI], 2015). These goals also advance the long-term objective of achieving basic education for all children ages 7-15 years, as outlined in Law No 20/2003 of the national education system.

The national education strategies in the RPJMN place special emphasis on the following: (1) Children living in poverty, children with disabilities, ethnic minorities, and children living in border areas, remote regions, and conflict zones; and (2) increased parental involvement in children's education, particularly through schools. This latter feature is also included as a midterm goal in Renstra, the Ministry of Education and Culture's (MoEC) strategic plan for integrating the RPJMN framework into ministry-specific outcomes and indicators. Through these focus areas, the Government of Indonesia aims to reduce disparities in school access across income brackets and between urban and rural settings, in addition to increasing access to education for children with special needs.

Disparities in education quality often lead to apprehension among parents and students regarding the continuation of formal education beyond elementary school. The government plans to address this in three ways: (1) enhancing curriculums to emphasize skill and character building, critical thinking, creativity and ultimately, competitiveness within the job market; (2) improving school infrastructure; and (3) building teacher capacity. Social assistance programs, such as *Program Indonesia Pinta* (Smart Indonesia Program or PIP), also aim to reduce disparities in school enrollment and continuation.

In an effort to deliver better quality education, the national government passed Law No 23/2014 on subnational government, dividing the roles for providing services between different levels of subnational government, with the district overseeing basic education (elementary and middle school) and the province overseeing secondary education (high school and vocational school). The general outcome of this decentralization remains unknown due to lack of data. However, some unintended results include further inequities regarding education planning, quality, and delivery of services due to variable levels of human capacity across the subnational level (GoI, 2015). Additionally, despite an increase in funds transfers from national to subnational government since the last RPJMN budget cycle, district implementation of social assistance programs has fallen below expectations.

Another substantial challenge in achieving Indonesia's goals for education reform is a lack of valid and reliable data available within the education sector, which impedes the government's ability to identify vulnerable populations and implement and evaluate policies and programs. Specifically, as outlined in the RPJMN document, one key strategy is involving communities in identifying and mapping children who are outside of the education data management system and who typically live in adverse situations (GoI, 2015). The MoEC is also encouraging national and sub-national directorates to commit to collecting high quality data for planning and implementation purposes.

Results from the latest Program for International Student Assessment (PISA) showed limited progress for academic performance in Indonesia from 2012 to 2015, especially when compared to other countries (Organisation for Economic Co-operation and Development, 2013; Organisation for Economic Co-operation and Development, 2016). Indonesia's mean score for science increased to 403 in 2015 from 382 in 2012, and ranked 64 out of 72 countries, compared

to 64 out of 65 countries in 2012. In math, its score increased to 386 from 375, and ranked 65 out of 72 countries compared to 64 out of 65 in 2012. In reading, its score increased slightly to 397 from 396, and ranked 66 out of 72 countries, compared to 61 out of 65 three years earlier. Indonesia's literacy, math, and science scores evidently remain well below the world average, as well as its regional neighbors, and these scores differ largely by province, further demonstrating the educational inequities that are prevalent across the country. In order to coordinate interventions to close these gaps in school achievement across provinces and improve academic performance and competitiveness within the global arena, the MoEC needs access to high quality evidence examining how adverse childhood exposures impact school participation and learning. Ultimately, these findings will be used to support both the short-term and long-term planning objectives of the National Action Plan on Early Childhood Development, among other national strategies, policies, and programs.

Pathways Out of Adversity

In early 2016, the Indonesian Ministry of Education and Culture and the Center on Child Protection and Wellbeing (PUSKAPA) at Universitas Indonesia, together with partners from Columbia University, Universitas Atma Jaya, and SurveyMETER, launched the Pathways Out of Adversity (Pathways) study, a multi-year research initiative aiming to establish a national evidence base on the effects of early childhood adversity on the wellbeing, resilience, and potential of Indonesia's next generation.

Specifically, the Pathways study will examine the effects of three categories of adversity (exposures) on children's wellbeing from infancy to late adolescence. The three categories of adversity include:

I.   Insufficient access to responsive care and critical resources, such as nutritious and appropriate food;
II.   Insufficient access to quality basic services, such as education, health, and social assistance; and
III. Adverse exposures, including violence and natural disasters

The study will provide insight into how these variables contribute to four categories of wellbeing (outcomes), including:

I.   School participation and learning;
II.   Physical health;
III. Psychosocial wellbeing, cognitive development, and social skills; and
IV.   Economic participation.

The Pathways study will use a longitudinal design to examine how the relationships between these exposures and outcomes change over time. This will involve using different quantitative and qualitative methods to collect data from the same panel of children, their caregivers, and their basic services providers at regular intervals (which have yet to be determined) until 2030. By collecting data repeatedly from the same people as they age, rather than at a single point in time as in studies such as the National Socioeconomic Survey (SUSENAS), this study would be able to achieve more dependable conclusions about how different sources of adversity and their corresponding program and policy responses affect children's growth potential.

There are several powerful technical advantages of collecting data at multiple points in time that cannot be achieved through other means. First, longitudinal studies reduce the risk of reverse causation, which commonly occurs when the direction of a causal relationship is attributed incorrectly. For example, cross-sectional data on cognitive exams and school leaving might be misinterpreted to mean that low exam scores lead to early school leaving, when in fact a longitudinal study could establish the opposite – that early school leaving leads to low exam scores. Second, longitudinal studies reduce the problem of confounding, which arises when two factors are consequences of a common cause, by enabling closer control of these potentially confounding factors. Third, birth cohorts in particular can examine children's developmental paths over time and determine how these paths are affected by a wide range of variables, including parenting, education, health, socioeconomic factors, and community resources. Ultimately, these findings will be used to support both the short-term and long-term planning objectives of the National Action Plan on Early Childhood Development, among other national strategies, policies, and programs.

In order to maximize the utility of this study's findings for policymakers, program planners, researchers, and other stakeholders, and to ensure that the research methods are appropriate to the study populations, the MoEC, PUSKAPA, and their partners will undertake a series of preparatory activities before embarking on the longitudinal study. The first step, which was carried out between June and November 2016, was to conduct an exploratory study which included a review of published and grey literature, national and international consultations, and fieldwork in three districts. The next step, beginning in 2017, will involve further consultations based on the findings of the exploratory study, followed by the development and field-testing of the modules for the first wave of data collection for the longitudinal study, which is scheduled to begin in early 2018.

This working paper details the activities, findings, and implications of the exploratory study. The paper opens with an overview of the exploratory study's objectives and guiding research questions, followed by a brief review of the current state of knowledge about how early childhood adversity affects children's wellbeing and what approaches have been tested to address adversity. The next section details the methods of data collection for the exploratory study. The results section briefly discusses potential implications of the exploratory study for policies and programs and then reports on how the findings may inform development of the longitudinal study's data collection modules and research protocol. Finally, the working paper puts forward a series of recommendations for future steps in the Pathways study design process.

Exploratory Study Research Objectives
The exploratory study aimed to inform high-level planning for the design and execution of the Pathways Out of Adversity longitudinal study. Specifically, it aimed to locate cultural, political, geographic, ethical, and systemic variables that may constrain the methodological options available for the longitudinal study, and to identify important gaps in institutional knowledge and international literature that could be addressed by the longitudinal study.

Research Questions
1. What data gaps related to children's adversity and wellbeing do government officials at various administrative levels identify as constraining their program and policy planning objectives?

2. How do service providers and community leaders at the subnational level define "early childhood adversity," and what individual, household, and community factors do they identify as contributing to children's resilience?
3. What challenges to undertaking national longitudinal studies with children have been identified by government authorities, Indonesian studies and programs, and the international literature, and what strategies might be available in the Indonesian context for addressing these challenges?
4. What characteristics are the most useful for determining the sampling universe for the Pathways longitudinal study, weighing the various policy, program, and scientific needs against the financial, temporal, and human resources available?

What We Know from the Literature
Over the past 26 years, the mortality rate for children under five years has declined by 53 percent globally (Dua et al., 2016). This remarkable achievement has been enabled largely by evidence-based policies and interventions informed by findings from scientific research. However, there is still much work to be done. In low- and middle-income countries, 43 percent of these children remain exposed to multiple adversities, including poverty, malnutrition, unstable or unstimulating home environments, and poor access to health and early childhood education (ECE) resources (Britto et al., 2016; Grantham-McGregor et al., 2007).
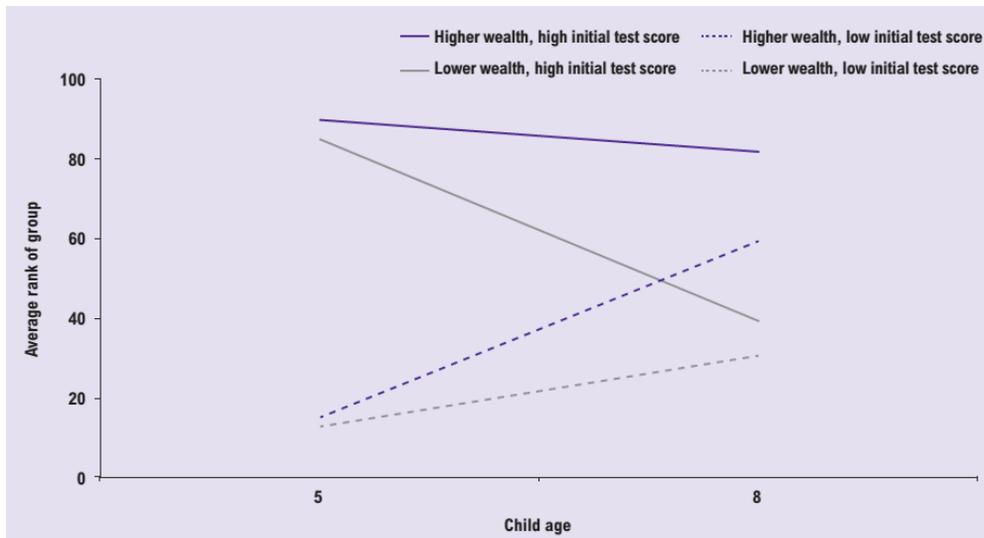
The following section reviews study findings from research on children mostly in lower- and middle income countries spanning the past five decades. The majority of referenced studies are longitudinal in nature and cover 28 countries. While no longitudinal study conducted in Indonesia has ever systematically studied the effects of early childhood adversity on long-term development, the review draws on a number of cross-sectional studies from Indonesia to help contextualize the findings from the global literature. Although there has been a growing body of research on early childhood development and child resilience in lower- and middle-income countries in recent years, which will be helpful to draw on to design the Pathways study, the evidence on the long-term effects of early childhood adversity—and the role of services and other support systems in mitigating those effects—remains insufficient (Dua et al., 2016; Grantham-McGregor et al., 2007; Tanner, Candland, & Odden, 2015).

What effects does exposure to early childhood adversity have on childhood development?

Poverty and Access to Resources
Globally, children from non-poor households, urban children, ethnic majorities, and children born to mothers who completed primary school are less likely to be stunted and more likely to enroll in school, attend school regularly, and stay in school longer than their counterparts whose mothers did not complete primary school. These effects are compounded when children experience more than one of these inequalities (Fink, Matafwali, Moucheraud, & Zuilkowski, 2012; Woodhead, Dornan, Murray, & Helen, 2013). Similar disadvantages were observed with cognitive development tests in the Young Lives (YL) study, where children who scored high in early childhood and came from poor households quickly fell behind children who came from more financially stable households.

Learning Trajectories in Cognitive Tests (YL Ethiopia, Younger Cohort, Ages 5-8, 2009)
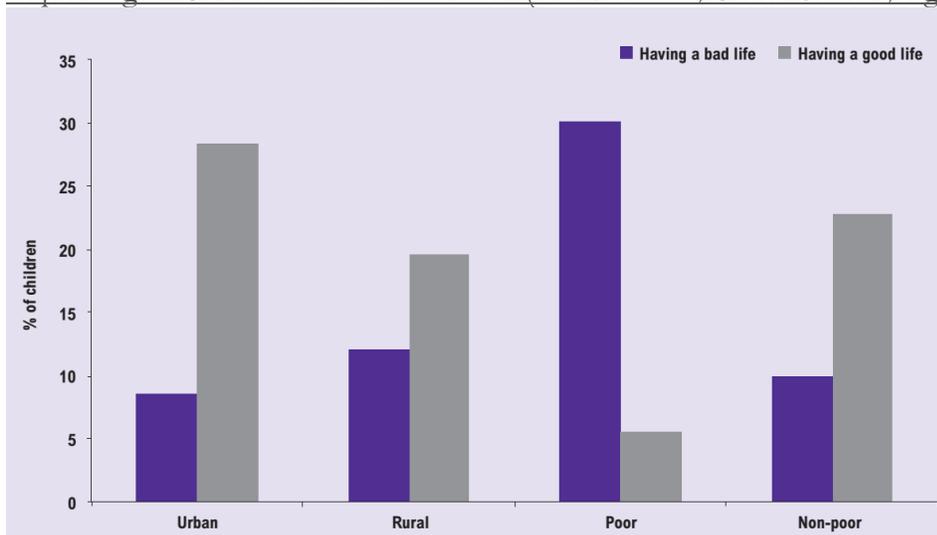
(Woodhead et al., 2013)

YL also found that urban children and children from non-poor households reported better quality of life and more optimism about future prospects than rural children and children from poor households.

Reporting a "Good Life" vs a "Bad Life" (YL Vietnam, Older Cohort, Age 15 in 2009)

(Woodhead et al., 2013)

Shocks

In YL, child and parental morbidity and parental mortality increased poverty at the household level and were all significant reasons for infrequent school attendance, slow progression through school, and school dropout (Woodhead et al., 2013). Environmental shocks disproportionately affected rural, poor, and minority populations while economic shocks were more evenly distributed across all populations, though poorer households were at greater risk overall. When households had to make adjustments responding to these shocks, the most common ones children reported were eating less, eating poorer quality food, and working more

(Dornan, 2010). Ethiopian children from households affected by drought, pests, crop failure, and/or disease were 32.2 percent less likely to complete primary school than children from households that did not experience any of these shocks. Boys from rural households experiencing the loss of livestock were more likely to stay in primary school than boys not exposed to this shock, as the loss of livestock resulted in less herding work, allowing more time for school. However, the same boys were less likely to stay in school long-term than boys not exposed to this shock (Woldehanna & Hagos, 2012).
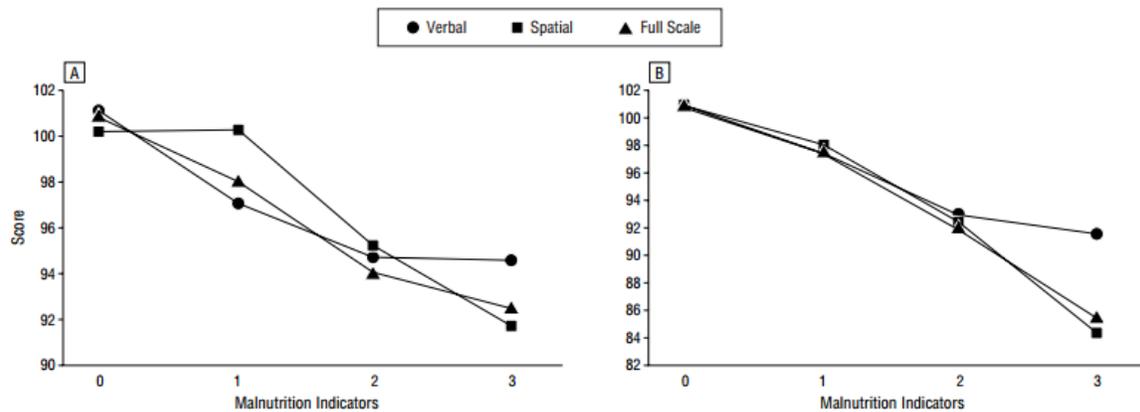
Child Labor

In Indonesia, child labor was found to have a negative impact on the growth of cognitive and numeracy skills, in addition to having a negative association with pulmonary health (measured through lung capacity). Children who worked for wages outside of the home experienced these effects to a greater extent than children who worked in the household or for a family business (Sim, Suryadarma, & Suryahadi, 2012).

Malnutrition

Children are often at risk of malnutrition before they are even born, with the earliest exposure having the potential for negative impacts well through childhood. The leading risk factor for stunting is fetal growth restriction and preterm birth, followed by poor sanitation and diarrhea, though in Southeast Asia, environmental risks including poor sanitation, poor water quality, and use of solid fuels have the second largest impact on stunting after fetal growth restriction and preterm birth (Danaei et al., 2016). Globally, stunting is associated with apathy, lower levels of play, and more insecure attachment in early childhood and inattentiveness, poorer social relationships, and behavioral problems in school age children (Walker et al., 2007). Several studies have also linked early and middle childhood stunting to lower levels of cognitive ability (Adair & Popkin, 2001; Woodhead et al., 2013), poor school performance and increased risk of dropout (Martorell et al., 2009), and IQ deficits ranging from approximately 3-15 points, depending upon the level of malnutrition (Liu, Raine, Venables, Dalais, & Mednick, 2003).

Dose Response Relationship between Severity of Malnutrition and IQ Score in Mauritius Ages 3 (A) and 11 years (B)

(Liu et al., 2003)

Furthermore, children who appear to be receiving adequate food can still suffer the consequences of malnutrition through deficient micronutrient intake. Iron deficiency anemia in infants is associated with lower motor, mental, social, emotional, and neurophysiologic function than non-deficient infants and iodine deficiency is the most common preventable cause of mental retardation worldwide. IQ scores in children with iodine deficiency average 13 points lower than non-deficient children (Walker et al., 2007), and with Indonesia's salt iodization coverage at 58 percent as of 2013, there is still a great deal of progress to be made (RISKEDAS, 2013).
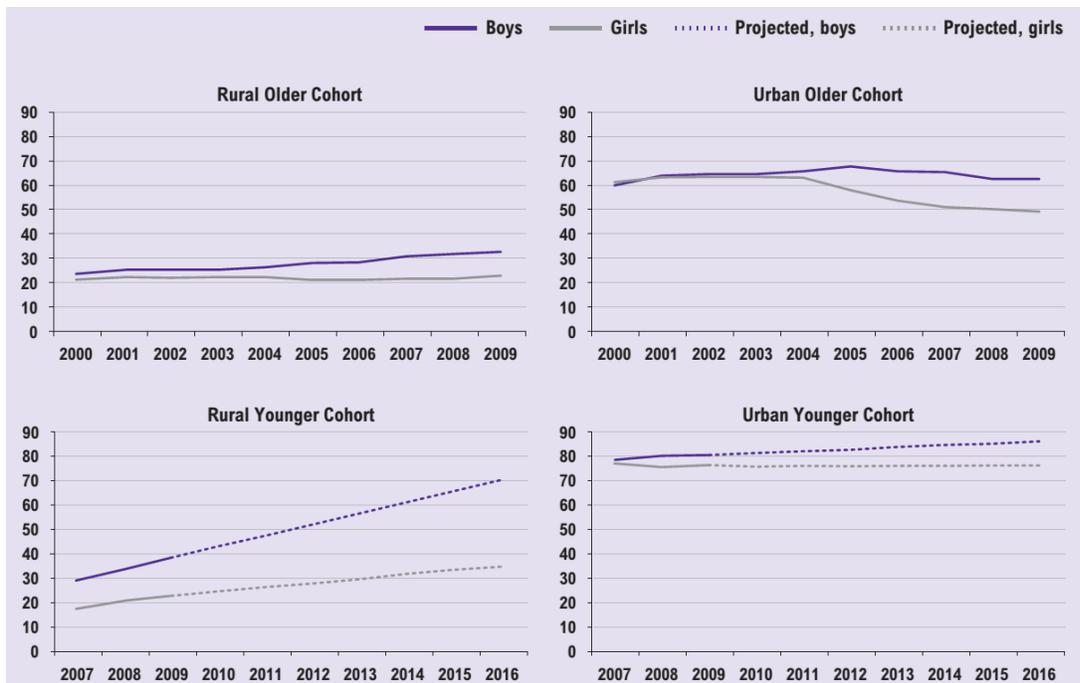
Breastfeeding
Indonesia's adherence to the World Health Organization's recommendation of six months of exclusive breastfeeding is considerably low. As of 2012, the average median duration of breastfeeding was 0.7 months exclusively and 1.8 months predominantly (BPS, BKKBN, MOH, & ICF International, 2013).

When assessing breastfeeding up to the age of 12 months in the United States, associations were found between lower vocabulary test scores and IQ scores for each month not breastfed. Nonexclusive breastfeeding compounded these effects (Belfort et al., 2013). In Brazil, children breastfed for at least nine months were found to be 0.5-0.8 grade levels ahead of their peers who breastfed for less than one month. Shorter duration of breastfeeding was also associated with higher risk of developmental delay (Barros et al., 1997; Victora, Barros, Horta, & Lima, 2005).

Gender Inequality
Gender gaps that disadvantage girls most often appear after 12 years of age. In YL India, the growth of low-cost private schools broadened the educational disadvantage of girls because families generally preferred private schools over public schools and chose to pay for the education of their sons over their daughters. In 2009, a gender gap of nine percent was found by the age of eight years among the poorest rural groups in the study (Woodhead et al., 2013).

Gender Differences in School Enrollment with Projections to 2016
(YL India, Both Cohorts, 2009)

(Woodhead et al., 2013)

However, the influence of gender identity on child development does not always favor males. In YL, boys were more likely to leave school than girls in areas where male children had higher wage-earning potential and girls worked primarily in the home, allowing them to combine their work with school (Woodhead et al., 2013).

Gender Differences in Responsibilities (YL Ethiopia, Older Cohort, Age 12 in 2006)

(Woodhead et al., 2013)

Family Support

Less than 42 percent of parents in developing countries are providing cognitively stimulating materials to their children or involving their children in cognitively stimulating activities (Walker et al., 2007). After adjusting for pre-term delivery and birth spacing, the following factors were found to increase the risk for signs of developmental delay among children aged 12-24 months in Brazil: low socioeconomic status, not having been told stories by parents within two weeks of the cognitive testing, and lack of access to children's books at home (Moura et al., 2010).

Mental Health and Conflict
Several studies have linked exposure to conflict and poor parental mental health to negative cognitive, behavioural, and psychological outcomes in children. Maternal postnatal depression in South Africa was associated with child stunting and behavioral problems at two years of age. Inadequate stimulation in the home, maternal stress, and maternal depression also detrimentally affected child cognitive development in addition to being associated with household poverty (Avan, Richter, Ramchandani, Norris, & Stein, 2010). Similarly, in YL, when asked to rank factors contributing to their happiness and wellbeing, the majority of children prioritized caregiver happiness, family, school, and social inclusion over good food, shelter, and material possessions (Nguyen, 2011; Woodhead et al., 2013).

Poor mental health within families can also intensify the effects of conflict on children. South African children exposed to community violence and Israeli children exposed to missile attacks and displacement from their homes exhibited higher levels of aggression, post-traumatic stress disorder, inattentiveness, and depression than children not exposed to violent conflict. These effects worsened with poor mental health of primary caregivers or disruption of family cohesion (Walker et al., 2007).

What approaches have been proposed to address childhood adversity and contribute to resilience?

Social Assistance
There is evidence that the Family Hope Program (PKH), a conditional cash program delivered by the Indonesian Ministry of Social Affairs, has benefited children's educational and health outcomes. Children ages 0-5 years in beneficiary households were 30 percent more likely to be taken to local health facilities for weighing and 13 percent more likely to receive treatment for diarrhea compared to baseline levels (World Bank Jakarta, 2011). Vaccination coverage for all types also increased among children under 12 months old, reducing gaps between children living in more resource-dense areas and children of more educated mothers compared to their counterparts. Additionally, the incentivized community block grant program, PNPM Generasi, together with PKH, was found to increase child food intake, especially for protein-rich items. PKH reduced wasting by as much as 41 percent and Generasi reduced the prevalence of severely underweight children by as much as 47 percent (Kusuma, 2015). Similar significant findings regarding improved nutrition, increased food security (Porter & Goyal, 2016), and improved childhood growth and motor development (Engle et al., 2007) were found in Ethiopia and Mexico.

Safety net programs were associated with improved nutritional status in children under 2 years in Indonesia (*Pemberian Makanan Tambahan*) (Giles & Satriawan, 2010), increased cognitive
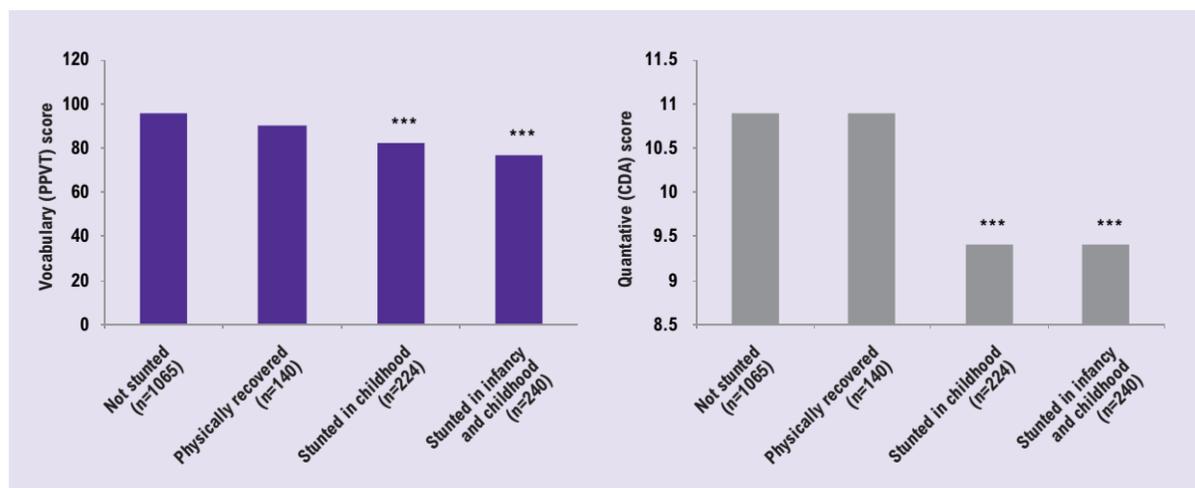
scores in children in Ethiopia (Berhane et al., 2015), and decreased rates of malnutrition in primary school children in India (Singh et al., 2013).

Health and Nutrition

Access to basic vital resources, including nutritious food, potable water, and healthcare, is the foundation for positive cognitive and education outcomes. Better access to healthcare resources in Indonesia and clean water in China were found to be associated with notably better cognitive outcomes and longer school attendance (Tanner et al., 2015). In Indonesia, children born into villages with the Safe Motherhood Program experienced longer school attendance and better cognition and math performance than children born into villages not receiving the Safe Motherhood Program (Tanner et al., 2015).

Several international studies have found that improving the diets of infants and toddlers can prevent stunting, help children recover from stunting, and result in better cognitive development and schooling outcomes (Engle et al., 2007; Woodhead et al., 2013).

Test Scores of Children Stunted at Age 1, but Physically Recovered by Age 5
(Young Lives Peru, Younger Cohort, Age 5, 2010)

***scores for stunted children are significantly different from scores for not stunted children (Woodhead et al., 2013)

Additionally, iron supplementation for anemia prevention in young children has been associated with beneficial effects on motor, social, emotional, and language development worldwide (Engle et al., 2007) and improved school achievement scores in Indonesia (Soemantri, Pollitt, & Kim, 1985).

Early Childhood Education

Access to formal ECE resources has been linked to numerous and enduring developmental advantages for young children. In developed countries, disadvantaged children enrolled in high quality early intervention programs experienced less grade repetition and higher graduation rates in schools, higher employment and earnings, better health outcomes, less welfare dependency, and lower crime rates than nonparticipating peers (Engle et al., 2007).

Positive effects on cognitive development, school retention and performance, self-esteem, and motivation have also been found in a number of developing countries (Engle et al., 2007). In Turkey, daycare combined with the training of mothers in child language development and problem solving skills was associated with higher intelligence, self-esteem, and academic performance, longer school attendance, and reduced aggression (Walker et al., 2007). Preschool attendance was found to be associated with longer school attendance in Uruguay, Cambodia, and Mozambique and better academic performance in Argentina, Chile, and Jamaica (Tanner et al., 2015). ECE program participation in the Philippines was associated with improved short-term nutritional status and improved cognitive, psychosocial, motor, and language development among children under four years of age compared to unenrolled peers (Armecin et al., 2006). These positive effects increased with participation beyond 12 months. The same programs were also found to be associated with the spread of infant feeding and parent education programs, home-based day cares, and significantly higher involvement and training of service providers providing child health and nutrition services.

Family Support
Interventions promoting the strengthening of parent-child bonds and informal early childhood stimulation within households have also been shown to have substantial positive impacts on child development.

A World Bank study with mothers in Indonesia defined good parenting practices as having high levels of warmth and consistency and low levels of hostility toward their children. There was an association between mothers with good parenting practices and children scoring better on the following developmental indicators: physical health, social competence, emotional maturity, language and cognitive development, communication skills, and general knowledge (Tomlinson & Syifa, 2015).

In South Africa, Turkey, Chile, Bangladesh, China, and India, studies indicate that home visit and individual parent counseling interventions supporting mother-child interactions benefit cognitive development in children (Walker et al., 2011). These benefits also extend to children experiencing nutritional and developmental adversities. In Jamaica and China, mothers of stunted, low birth weight, and preterm children under two years were taught educational play techniques and their children were given educational toys. Children in the intervention groups experienced increased mental development scores over children in the control groups (Walker et al., 2007).

The importance of positive family dynamics have been further illustrated in children exposed to conflict. In South Africa, maternal coping and positive family relationships were found to alleviate the adverse effects of political and community violence on six-year-olds (Barbarin, Richter, & de Wet, 2001). Studies in Eritrea and Bosnia found that providing parenting training to mothers of children exposed to war improved cognitive and social-emotional development (Walker et al., 2007).

What are the gaps in the literature?
Developed countries possess extensive evidence regarding the value and scope of early interventions in improving the long-term outcomes of children living in adversity. In developing countries, however, this crucial research is scarce and trying to apply findings from

developed countries could result in inappropriate and ineffective interventions (Tanner et al., 2015).

Indonesia lacks locally relevant research needed to organize responsible and successful early childhood interventions. For its part, the Indonesia Family Life Survey (IFLS), a national longitudinal study spanning over two decades, has provided invaluable information regarding the household and community characteristics, knowledge, attitudes, and health, education, and financial outcomes of Indonesians over time. However, the IFLS was not focused on early child development and did not involve children under the age of seven years. A new Indonesian longitudinal study is necessary, incorporating a birth or early infancy cohort, and a focus on early childhood development, resiliency, and exposure to adversity. Through this study, Indonesia will not only gain valuable evidence needed to improve the outcomes of the nation's children, but will also contribute to closing the research gap regarding the implementation of effective early childhood interventions in developing countries.

For the guidance of future research and in response to existing knowledge gaps, The Lancet has set research priorities for early childhood development (ECD) to 2025. These priorities are part of the World Health Organization's larger initiative for the prioritization of maternal, newborn, child, and adolescent health. Priorities were identified using Child Health and Nutrition Research Initiative methodology for setting priorities in health research investments and scored by a group of experts within the field. Experts stressed the importance of building supportive environments to assist families in providing nurturing care for young children and all top-ranking priorities pertain to the impact of organizing interventions by community health workers or through improved support to caregivers and families. Three of the top ten priorities relate to the integration of services, including incorporating ECD interventions into maternal, newborn, and child health services and integrating health or nutrition services into early childhood education programs.

Additionally, thematic areas and research questions were developed by 74 experts from around the world. Questions were then ranked and organized by thematic area. The table below illustrates the top three research questions for each thematic area, along with the respective ranks.

	Ranking
Improve awareness and promotion	
What are cost-effective ways to promote an understanding of child development at the community level?	25
What is the impact of demand-side strategies designed to reduce access barriers for poor and vulnerable groups on pre-primary enrolment?	27
What is the impact of social mobilisation campaigns on use of positive discipline?	40
Advance identification of risk factors, and better understanding of the burden	
What factors contribute to growth and development recovery following early nutritional deficiencies?	14
What is the strength of association between stunting and cognitive development?	28
What are the most appropriate tools for population-level assessment of development in children <8 years in resource limited settings at scale?	29
Improve impact of interventions	
Can early child development packages focusing on nurturing care and parent support improve child cognitive development in rural low-income settings?	1
What approaches to improve quality of early childhood care and education programmes result in improved developmental outcomes for young children?	2
What is the impact and sustainability of nutritional supplementation to improve the physical and cognitive health of children?	5
Enhance implementation of interventions	
Can community health workers/paraprofessionals be trained to deliver ECD interventions effectively?	3
Can group-based parenting support programmes in the postnatal period increase self-efficacy of new mothers?	8
Are group-based interventions more effective than home visiting to deliver ECD interventions?	10
Expand integration and coordination	
Would the integration of an ECD counselling model within an integrated maternal, newborn, and child health strategy lead to better child development outcomes?	4
Can ECD programmes be taken to scale and maintain the degree of integrity/fidelity necessary to assure effectiveness?	11
Can ECD programmes be integrated with existing routine health care visits?	12
Increase understanding of health economics and social protection strategies	
What are the additive costs of integrating health/nutrition interventions into early childhood education programmes?	6
What is the impact of unconditional cash transfer programmes in pregnancy on child development?	17
What are the most cost-effective parenting interventions to promote ECD?	21
ECD=early child development.	

Table: **Top three priority research questions in each thematic goal**

(Dua et al. 2016)

Exploratory Study Methods

In preparation for the overall Pathways study to fill the research gaps regarding early childhood development in Indonesia, an exploratory study was conducted in October 2016. The study began with a series of consultations with members of the Ministry of Education and Culture, the Ministry of National Development Planning (BAPPENAS), PUSKAPA, Universitas Atma Jaya, SurveyMETER, Columbia University, and others. Consultation meetings were held between June and September 2016 to develop the objectives, research questions, and research protocol for the exploratory study. During these consultations, the research partners decided that the exploratory study should consist of a review of international literature, as well as semi-structured interviews and focus group discussions with key informants at the national level and in three districts within one eastern province.

Site Selection

Jakarta, the nation's capital, was selected in order to include the views of policymakers and experts in education, child protection, health, and longitudinal research design. In addition to the national level data collection, the MoEC selected the province of West Sulawesi based on the following considerations:

- West Sulawesi is an eastern province with some of the country's lowest developmental indicators, including the fewest median years of schooling for males aged 15-54 years (BPS, BKKBN, MOH, & ICF International, 2013) and the highest rates of child marriage under the age of 15 years (Watkins et al., 2016).
- It is a prioritized area within the MoEC's education improvement strategy.
- The province allows for important comparisons between urban and rural settings, educational outcomes, and other development indicators, while also being fairly accessible, politically stable, and culturally diverse.
- The presence of the MoEC, and other government service providers, also differs considerably across the province.

These factors make West Sulawesi an ideal setting to examine differences between national and subnational concepts of childhood adversity and resilience and to determine how gaps in data availability at the subnational level contribute to bottlenecks in reaching program objectives. Its remoteness and diversity also make West Sulawesi a useful setting for exploring how applicable the research techniques and study findings from previous studies on early childhood adversity might be to different parts of Indonesia.

Three of West Sulawesi's six districts were selected through a collaborative consultation between the MoEC and PUSKAPA. The districts were selected purposively using educational achievement indicators provided by the Ministry (MoEC, 2016). Urban density, human development indicators, and accessibility of the districts also factored into the decision. The three districts and their characteristics are as follows:

1.   **Mamuju:** This city is the capital of the district, with a population of 266,000. The concentration of resources and people in this city, together with the strong presence of the Ministry of Education and Culture, the UN, and civil society organizations make Mamuju representative of a best-case scenario for educational outcomes in the province. Yet, while the district has the highest human development indicators in the province, it also has among the highest dropout rates in the province, and has a fairly high percentage of under-qualified educators.

2.   **Mamasa:** This peri-urban and hard-to-reach district of 152,000 people faces the most challenges to its education system in the province. Located in the mountains in the center of the province, far away from the province's three main cities, the district has the lowest educational participation indicators in the province, the highest proportion of under-qualified teachers, and the highest proportion of damaged school facilities. The district represents a worst-case scenario for educational outcomes in the province.

3.   **Central Mamuju:** This remote and rural district of 121,000 people has the lowest population density in the province, and students face considerable obstacles reaching education facilities. The district has among the lowest human development index in the province, the highest elementary dropout rate, and the lowest enrollment rate across school levels. Interestingly, however, it has the lowest middle and high school dropout rates and among the highest proportions of qualified teachers. The district presented potential opportunities to examine pathways of district and community resilience in the face of low national and

provincial presence (MoEC, 2016).

Participant Selection Criteria
Participants were selected purposively according to their professional position and exposure to the most pressing issues facing children in their area. At the national level, all focus group discussions were held with government officials from several ministries. In each district, focus group discussions were stratified into three groups defined by Kemdikbud. These included (1) government stakeholders from multiple sectors that had the power to make budgetary or policy decisions; (2) providers of basic services from the government and civil society; and (3) government or nongovernment professionals giving technical assistance to community members or connecting them to social protection and other services.

Key informant interview participants included leaders at the national, district, and sub-district levels; service providers from the district and sub-district levels; and civil society members from the province, district, and sub-district levels.

Data Collection and Management
PUSKAPA developed the semi-structured interview guides and focus group discussion guides for use at the national and subnational levels with input from all study partners. The study instruments were translated from English into Bahasa Indonesia and approved by the Ethical Review Board at Universitas Atma Jaya.

PUSKAPA led data collection at the national and subnational levels. The team consisted of 12 researchers from PUSKAPA and six researchers from West Sulawesi who were recruited from Yayasan Karampuang, a civil society organization focusing on child protection. Senior researchers at PUSKAPA led a one-day training at the national level for all PUSKAPA staff, followed by a two-day training at the subnational level. These training sessions focused on the research objectives and protocols, best practices for qualitative data collection and data management, ethical considerations, and referrals for any acute needs uncovered during data collection. During the subnational training sessions, the study instruments were also adapted for cultural appropriateness and clarity.

Each data collection session lasted a maximum of 1.5 hours and was conducted in Bahasa Indonesia. All participants provided their informed consent, and most agreed to have the sessions recorded. Each session was led by a principal interviewer and attended by at least one note-taker who kept careful field records that were reviewed and approved by the research leads. Interviews were typically held at the key informant's place of work or at a previously agreed upon location. All focus group discussions were conducted at a standard meeting place. Data collection sessions were not remunerated, but participants of focus group discussions received a meal in addition to compensation for their travel expenses.

The interviews and focus group discussions were followed by debriefing sessions among the participating researchers, after which field notes were finalized and uploaded to PUSKAPA's secure central server, along with the audio recordings of the sessions

Analysis
Drawing on the literature review, the field notes, and preliminary findings from the data collection sessions, PUSKAPA and its research partners developed a detailed data analysis

procedure based on three broad themes corresponding to the research questions. These themes included (1) implications for policies and programming, (2) implications for household survey and survey team, and (3) implications for the longitudinal data collection process.

In order to create a more efficient analysis process, the lead for each of the four field teams (Jakarta, Mamuju, Central Mamuju, and Mamasa) systematically classified each of the interviews and focus group discussions conducted by his or her team in order of priority based on its relevance to the research questions and analysis procedure. Those sessions that were highly prioritized were transcribed by members of the field team in Bahasa Indonesia, after which the transcripts underwent extensive quality control measures by the team leaders. In order to provide an independent review, senior researchers in Jakarta also reviewed the field notes for the sessions that were not highly prioritized by the team leads, and in some cases decided to transcribe them. Field teams also drew on the less prioritized sessions often by revisiting the audio recordings of the sessions or consulting field notes.

After all sessions were transcribed, each field team began analyzing the transcripts through close reading and note taking. Once they had familiarized themselves with the transcripts and started identifying key patterns in responses, each team completed an independent data display with relevant quotations and margin notes according to research theme. Using this data display, each field team then drafted a field report in English based on a template, after which senior researchers synthesized the field reports into this working paper. This paper will be reviewed and approved by all research partners before being finalized.

Results

The four research teams conducted 79 key informant interviews (KIIs) and 14 focus group discussions (FGDs) across all study sites from October 17th to October 28th 2016 (Table 1). These sessions were held with participants from several ministries, agencies, and their corresponding subnational offices, including the offices of education, social affairs, health, population administration, religious affairs, child protection and women's empowerment, development planning, and villages, underdeveloped regions, and transmigration. In most cases, representatives from multiple subdivisions of these participated. Other government participants included representatives from the village offices, school headmasters, teachers from preschools and primary and secondary schools, as well as police officers, community and village health staff, social workers and social welfare officers (TKSK), and the facilitators of various social services. These interviews and FGDs also involved several non-governmental participants, including representatives of civil society organizations (CSOs), community leaders, and heads of boarding schools.

Table 1. Total Key Informant Interviews and Focus Group Discussions Completed by Location		
Location	Key Informant Interviews	Focus Group Discussions
Jakarta	7	2
Mamuju	26	4
Central Mamuju	26	4
Mamasa	20	4

Total	79	14

Altogether, 35 sessions were transcribed (five from Jakarta, 10 from Mamasa, nine from Mamuju, and 11 from Central Mamuju), though field notes and audio records from all 79 KIIs and 14 FGDs informed the analysis.

The following section provides a brief review of the findings from Jakarta and West Sulawesi as they might pertain to policy-makers and program planners focused on safeguarding children's healthy development in West Sulawesi. This section should not be interpreted as a systematic assessment of child-focused policies or programs within the province, as such an assessment is beyond the scope of this project. The second two sections provide an analysis that is relevant to the design and implementation of the Pathways Out of Adversity longitudinal study. These findings should be considered provisional rather than conclusive, as they have yet to benefit from the input of key research partners.

Some initial implications for policy and programming

What is a child?
As is often the case, participants in this study had differing opinions of what constituted "childhood," "adversity," and "resilience." At the national level, participants usually defined children as any individual below 18 years old. At the subnational level, on the other hand, participants did not always distinguish between children and adults based on age, but also according to other behavioral and social markers. Children were often described as having poor judgment and therefore needing guidance, "character-building," and protection from both parents and educators. Younger children in particular were said to need special protection, especially in the first few years, which education and health staff in Mamuju described as a "golden age" for growth and development.

An individual below the age of 18 could be considered an adult, according to village-level participants in Central Mamuju, if they were self-reliant (*hidup mandiri*). Economic success was an important factor in this determination, particularly if the young person was financially independent and headed his own household. When young people completed chores or worked on their parents' farms or in the palm oil plantations, they were usually still considered children. Subnational participants also considered marriage to be an important marker of independence, and therefore adulthood, especially for girls, who regularly earned less than boys for the same work and had lower expectations of achieving financial independence otherwise. That does not mean that early marriage was necessarily considered positive, however, as many informants felt that marriage interfered with children's wellbeing, and especially their education.

What do we mean by "adversity"?
For national-level planning purposes, officials in Jakarta categorized adversity into different subgroups of children in high-risk situations, including children in poverty, children with disabilities, street children, children living in remote areas, children living in slums, and children in emergency contexts. Special education nationally is managed through one directorate that develops and implements programs specific for children in adversity, and their groupings include children with disabilities (physical and cognitive), children in remote areas (including borders between countries), and working children. As would be expected, national

education officials thought that the different forms of early childhood adversity would manifest in students as low-test scores, poor analytical skills, and grade repetition.

At the subnational level, concepts of adversity differed widely according to which sector the research participant represented; but poverty, insufficient access to schools, and malnutrition emerged as common themes. Physical and cognitive disability, severe psychological conditions, such as schizophrenia, and drug use were also frequently mentioned as types of adversity, the latter of which was typically associated with teenagers. Divorce was another commonly mentioned source of adversity. There was no consensus about whether verbal and physical punishment applied by parents or teachers constituted adversity, as many considered this "firmness" to be necessary for instilling discipline. As one informant from the religious affairs office in Central Mamuju explained, "if you do not treat children firmly to change their character, it will be difficult to discipline them." A social worker in Central Mamuju explained that "here, it is not considered violence against children unless it is very severe, if the child becomes disabled or dies. Then, after that, people will say that parents are cruel." Another respondent observed that there was a shared opinion among parents and teachers that *UU Perlindungan Anak* (the Child Protection Act) encourages children to behave badly when they learn that adults can be jailed for corporal punishment.

In Mamasa, which many described as having a "soft culture," the subject of violence against children is taboo. Respondents reported that, under local customs, parents have the discretion about whether to punish their children physically, and that external parties have no right to intervene upon what happens within the household. As one district official explained:

> *In Mamasa, there actually is violence against children, it's just that [the community members] consider it trivial. Also because of cultural factors and because of* adat *laws, it is considered taboo. For example if we hit a child ourselves, people from the outside cannot interfere and when they do interfere, they are interfering with* adat *law, they are in conflict with* adat *law. That is the culture here.*

On the other hand, many study participants acknowledged that corporal punishment was prohibited by the Child Protection Act, and some did consider physical and verbal punishment abusive. One social worker in Central Mamuju, for example, explained that, beyond negative physical consequences, this abuse and the normalization of violence more generally, could also harm children's self-esteem and contribute to the child developing aggressive behavior in the future.

Participants also had mixed opinions about whether manual labor for young children constituted a form of adversity. Many considered this work both necessary as a source of household income and as a type of preparation for children's future. As one respondent from Mamuju explained, "Basically, parents say 'you want to go to school or you do not, that's your choice, as long as you are able to work and make money.'" Others considered child labor a negative because it interfered with children's schooling while also exposing children to physical hazards. In Central Mamuju, an emergency responder described regularly caring for children harmed in the palm oil plantations. In Mamasa an informant from the Population and Family Planning Agency (BKKB) reported that elementary-school-aged children often work after school doing paid labor, including breaking stones to be used for construction. The informant reported that, in at least one case, a child had died from the work.

What do we mean by "resilience"?
Resilience was an unfamiliar concept to many respondents, and a difficult concept to convey in Bahasa Indonesia. Questions about resilience were often phrased as a variation of "how do children and their families deal with the issues you've mentioned?" and "how do they overcome these issues?" Service providers had the most to say about questions related to resilience. Usually, service providers said that child resilience depended on parenting, and that parents' education and appreciation of schooling were all important factors in supporting vulnerable children. This cohered with the perspective of national officials, who thought that parenting styles and parental involvement in education were important factors determining children's ability to overcome adversity. Participants reported that access to the school and health systems were vital to children's resilience, and many considered school continuation and achievement important signs of resilience.

Schools were often described as contributing to children's resilience by building children's "character." This concept, which was widely cited nationally and sub-nationally, reportedly originates from the teachings of Ki Hajar Dewantara, and consists of four core elements, including spiritual and emotional development (*olah hati*), athletic development (*olah raga*), intellectual development (*olah pikir*), and creative development (*olah rasa/karsa*). As one national education official explained, "We have to back to Ki Hajar Dewantara's education principles. I am sure if children can have these four values, god willing, children will have resilience, both for their wellbeing and their education."

Expectations of resilience were sometimes informed by gendered, ethnic, or religious stereotypes. For example, one official from Central Mamuju explained that Javanese children, and their families, were harder working than their Bugis and Mandar counterparts and had a greater appreciation of education. On the other hand, teachers in Central Mamuju—a new district largely populated by the government transmigration program dating back to the 1980s—noted that living among people with various ethnicities and religions has helped children to build their tolerance for difference and their communication skills.

Officials in Mamuju seemed to agree about the value of diversity. As one religious affair official explained:

> *For example, in one village community, they still do not have diversity, meaning that they do not feel the need to compete. That's it, right? They do not have a strong motivation to push their children towards higher achievements. But in a more pluralistic village, [parents] see people that have already achieved a lot—successful people—and so they are more motivated to be like them.*

Many informants reported that when parents were unable to care for their children, extended families or neighbors almost always took in the children, even if they did not have adequate resources to care for them properly. As a result, very few children in West Sulawesi were sent to boarding schools or other types of institutional care. On the other hand, parents in Mamasa that were seeking additional household income often sent their teenagers to work in big cities, such as Makassar, Pinrang, and Polewali Mandar. This additional revenue contributed to household resilience, though it also meant students had to discontinue their education. In

Central Mamuju, by contrast, many parents reportedly sent their children to stay with relatives or in boarding houses in Makassar so that they could have access to higher quality schools.

Challenges to delivering services for young children
Service providers and district officials from the education, health, social services, and population administration sectors across sites agreed that the most critical challenges to delivering services were under-resourced facilities, poor road access for large segments of the population, and human resources constraints. One official in Mamasa claimed that as much as 40% of the district's population could not be reached by vehicle. The district capitals of Central Mamuju and Mamasa, with low population densities, obstructive geographies, and a lack of transportation infrastructure are similar to many districts across Indonesia, struggling to identify and respond to the needs of populations in their outlying areas.

The case of preschool expansion provides a useful example for understanding the interlinked challenges to improving basic services delivery in these types of remote areas. The education office in each of these districts has prioritized the expansion of early childhood education (PAUD), and in turn many community members reportedly want to send their children to preschool. While budgets have historically been a limiting factor in building enough schools to make them equitably accessible, there is some evidence that this might be changing. In Central Mamuju, there is reportedly a district budget that supports PAUD school construction, and one district education official claimed that, "there is now one PAUD for one village." Meanwhile, in Mamasa, some villages have started drawing on the village fund to build schools, and this is likely to become a more common approach as the village law is fully implemented.

Although respondents found these new sources of funding for PAUD encouraging, some wondered if there would be enough money to construct and outfit the amount of schools needed, let al.one staff them with full-time teachers. Part-time teachers often have to take second jobs, and do not have the social status of a civil servant, and together these factors reportedly affect teacher motivation. As one village-level participant in Central Mamuju explained, "most of the teachers here are part-time, not full civil servants [PNS]. We can understand that as part-time officers maybe the seriousness of their work ethic is different and less optimal than that of PNS."

Aside from funding, many qualified teachers also do not want to be placed in remote areas, as there is enough demand for them in places that offer a higher quality of life. When schools invest in capacity building, this makes their teachers more attractive to other schools in less remote districts, and teachers are more prone to either quit or request a transfer as a result. In Mamasa, some schools had to close because they reportedly could not provide a consistent schedule of classes, owing to a lack of human resources. These problems are not limited to PAUD, but also apply to primary and secondary schools, as well as health centers and civil registration offices.

Officials in each district also faced challenges delivering services based on local beliefs and cultural practices. Disabilities, mental disorders, and violence against children were all described as taboo subjects in Mamasa, making it difficult for district officials to monitor and respond to these special needs. In Mamasa, one school for special needs was even left empty because parents did not want their children to be treated differently than the

other children. Respondents also reported that children with suspected severe psychiatric disorders were often housed in different quarters than their families, usually in a type of barn that functions as a cage (*kandang*). In Central Mamuju, by contrast, participants reported that peoples with disabilities or mental disorders were not stigmatized or discriminated against.

Service providers also found it difficult to broach the topic of abusive disciplinary practices against children because, according to local customs, this is traditionally the exclusive dominion of parents, rather than one in which community or government leaders are involved. In the event of a severe case of violence or abuse, local police officers (*Babinkamtibmas*) reportedly work with village officials to determine whether the case should be considered criminal and therefore referred to the district police (*Polres*).

As a relatively new district, Central Mamuju faces several unique challenges. Although Central Mamuju formally partitioned from Mamuju in 2012, the district has yet to appoint a number of posts and still depends on the district of Mamuju for many of its functions. Most core district office staff interviewed for this study had only been in place for less than a year. Some were not familiar with their duties or even the range of issues for which their offices were responsible. For example, an informant from the Institute for Family Welfare Consulting (*Lembaga Konsultasi Kesejahteraan Keluarga*), a Ministry of Social Affairs program that provides counseling for family conflict, was not aware of the Integrated Service Center for Women and Children (P2TP2A)—a key referral point for domestic violence cases.

Despite this transitional period, many informants from the village and subdistrict levels in Central Mamuju reported that it was altogether beneficial to no longer have to travel five hours to reach the former district capital in Mamuju. While the new district capital cannot yet provide all of the same functions as the old, it has already made key services more accessible to the local population. For instance, the district transmigration office has built the district's first hospital. The new district also allows government officials to pay more relative attention to each subdistrict. Whereas Mamuju oversaw 16 subdistricts before the 2012 partition, Central Mamuju now oversees just five subdistricts. As a social welfare officer said, this decentralization "automatically makes it easier to communicate [with officials], easier than when we were still part of the old district."

However, it is unclear when the district can be expected to reach a full state of readiness. Mamasa, which was founded as an independent district in 2002, reportedly still lacks a number of key district facilities or services. For instance, one participant explained that the district police station still lacked separate holding cells for juveniles, meaning that minors were held in the same facilities as adults. Meanwhile, although the education, health, social services, and police offices have historically worked closely on child protection and wellbeing issues, the district is still in the process of establishing its P2TP2A office. At the time of data collection, Mamasa had a P2TP2A officer appointed to the BKKB (Population and Family Planning Agency).

Novel approaches to overcoming these challenges
Local governments in West Sulawesi have taken several measures to address adversity faced by young children and their families. Mamuju, for instance, has introduced a program called *Stimulasi Intervensi Optimalisasi Layanan Anak* (Enhancement of Child Service Interventions, or SIOLA) to integrate early childhood services, including Posyandu and

PAUD, as well as parental support programs. Through SIOLA, the Mamuju government hopes to reduce cases of malnutrition while increasing preschool participation and improving the capacity of parents to support child development. Since 2012, the Mamuju government has established 50 different SIOLA posts around the district. Although officials spoke about the program's positive influence, we are unaware of any mechanism in place to evaluate SIOLA's effectiveness.

In Mamuju, the education office is also working with the police station on an experimental program for school-aged youth called *Gerakan Kembali Bersekolah* (Movement Back to School). When officers identify children that are out of school, they notify the children's caregivers and try to assess and resolve the causes of dropout. Meanwhile, the province education office is contributing to efforts to improve children's health. This *Penjaringan* (casting a wide net) initiative makes it mandatory for all children entering a new school (elementary, middle, and high schools) to receive a general health screening. Health officials from PUSKESMAS reportedly travel to each school to help new students complete their forms each year. Mamasa has also rolled out a program called *Pos Pembinaan Terpadu* (Integrated Development Post, or *Posbindu*), in which health workers collaborate with communities to support early detection of, and response to, health problems at the village level.

Data required for policy and program planning
Across study sites, there were large knowledge divides between the frontline staff who collected data from community members, the district officials that received and transferred data to higher offices, and the national officials that requested and made use of the data. At the national level, several participants expressed a wish to have more complete and valid population data on issues such as child violence, children out of school, parenting competence, and caregiving styles. In some cases, these officials reported not receiving the minimum amount of data from subnational officers, and others, they said that they needed population data from other national ministries that they could not access readily.

Among the most common reasons for wanting better data at the national level was to improve program planning and targeting. Officials explained that the lack of detailed data on children's protection needs led them to develop blunt initiatives that treated all types of adversity in the same ways, rather than being able to tailor services appropriately. Others, such as officials from the social affairs ministry, said that insufficient population data resulted in exclusion errors, meaning that large proportions of children did not receive social services that they should have qualified for. As one informant from the social affairs ministry explained:

> *The problem is that we thought the program was operating at maximum capacity. But actually there were still children who needed assistance that are not recorded at the ward [kelurahan] level, such as children out of school and malnourished children.*

Other reasons given at the national level for wanting more detailed data including enhancing program monitoring and evaluation and informing new policies. As one the MoEC official elaborated:

> *Actually we need research results too, in order to build the foundation for us to develop regulations. A study like the longitudinal study you are working on is very necessary because,*

when we decide on the type of assessment system we want to use—whether teachers need training and what kind of training—we need empirical data. To this day, we have still been developing [our initiatives] based on theory, based on feedback [from colleagues and supervisors], and then we just implement them.

National officials also sometimes noted wanting more in-depth analysis than their offices could feasibly conduct. They wanted to understand, for instance, the effects of adversity on interactions between parents and children. Education officials mentioned that the Policy Research Center (*Pusat Penelitian Kebijakan*) was responsible for conducting this type of research, but commented that the center rarely shared research findings or recommendations with the line directorates. Officials said that they drew on analyses published by international partners, such as the World Bank, to inform their policy and programming initiatives.

Subnational informants for the most part had poor data literacy and little working understanding of how data were analyzed or used to inform policies and planning. Instead, they often considered data collection and reporting to be procedural requirements. Frontline staff found data collection both challenging and stressful. When community members shared personal information with enumerators, they reportedly expected services or benefits in return and applied pressure on the data collection staff when none was forthcoming. These frontline service providers felt a need to be more accountable to their beneficiaries, and sometimes expressed frustration with higher levels of government that required such detailed data without providing adequate support to respond to the needs identified in the data. In the view of one service provider from Central Mamuju:

> *What is clear is that, to this day, the data that we collected from the field, which we sent to the district, has only been used for us to receive our fees [insentif]. As for service provision, in all honesty, after almost three years, Central Mamuju has yet to implement any clear social welfare services.*

These interviews also emphasized the need for government officials to better communicate to frontline staff why new data collection efforts are necessary and how they intend to put survey results to use.

When asked what types of data would be useful that they did not have, most district officials either could not respond or talked about data fields that were usually left blank in their routine reporting. For example, education officials said that they would like to have more information on their students' parents, such as their professions. They had no immediate use for this information, but wanted it because the education management information system (DAPODIK) prompted them for it. Officials' inability to utilize evidence to inform their work reflects a long-standing division of labor between central planning authorities and local implementing bodies, but with the decentralization of budgeting authority, and an increasing prioritization of social accountability mechanisms, such as *Musrenbangdes*, that aim to improve bottom-up planning, the need for improved data literacy, and competence, at the subnational levels is more urgent than ever.

Some participants nonetheless provided meaningful insights into subnational data needs. In Mamuju, education officials explained that schools are often involved in resolving individual and family issues that affect children's education, but that these issues are never documented or communicated to higher officials. As a result, the education system as a whole has no understanding of the types of needs and challenges students in the district are facing. Multiple education officials across sites wanted detailed data related to children with special needs in order to inform their programming, and P2TP2A officials in Mamasa wanted to know the prevalence of "child victims" in their district. Health officials in Mamasa also described the challenge of collecting data on children with mental disorders, as they had no staff trained to make psychiatric diagnoses.

A few officials suggested research questions of their own. One official in Central Mamuju wanted to know what factors led children to use drugs, while another wondered what contributed to parents' decisions to place their children in Madrasahs instead of secular schools. An education official in Mamasa wondered what factors contribute to children's motivation to do well in school despite facing adversity.

While some officials saw the value in the Pathways Out of Adversity longitudinal study, even if the findings would not be immediately useful to them, several were wary of exposing their constituents to more data collection efforts that imposed on their time and privacy without providing any direct benefits. Officials and community groups reported that their populations were over-researched because of the uncoordinated and often overlapping data collection efforts led by various government bodies. Different sections within the district health, education, social affairs, and statistics offices have their own routine surveys in addition to those conducted by village officials, and many of these have overlapping questions. Community members usually do not have a strong understanding of how these surveys differ from one another, or how participating in them might affect their lives.

Taken together, these findings suggest that it will be difficult to convey the importance of the Pathways study to participating communities and district officials. Careful and ongoing communication of the Pathways study's objectives and ultimate uses will be critical for the survey's success, and reciprocity may be an important component of participant retention (these concerns are discussed at greater length below). **These findings also indicate a greater need for, and interest in, government-led research initiatives, such as Pathways, among national directorate officials charged with leading more effective programs and policies.**

Implications for household survey and survey team
These findings provide several insights that will be useful for structuring study instruments for the Pathways longitudinal study. Given the complex and sensitive nature of the Pathways research questions, the size and variability of Indonesia, and differing needs and capacities of child research participants, the longitudinal study would likely benefit from a mixture of research methods, including a structured household interview, a range of qualitative activities, and perhaps a structured institutional assessment for the education system in the select sites.

This section focuses on insights for the household survey, which will form the core of the longitudinal study. The section is organized by themes corresponding to the type of variable being investigated.

Household variables

Accessibility
Indonesia's diverse landscape and large number of remote areas create a great deal of variation in accessibility. Remote areas often contain neighborhoods that are difficult to access by motor vehicles under normal conditions and become virtually inaccessible during the rainy season, during which floods and mudslides make travel highly precarious. Some urban and peri-urban areas contain wards (*kelurahan*) that are as inaccessible as many of the country's rural areas and some sub-districts are located on separate islands. Information gained from the exploratory study demonstrates how road accessibility and quality influence use of services, household poverty, and very likely, poverty at the community level. Relative isolation may also contribute to differences in cultural beliefs, coping mechanisms, and other population characteristics that may be important to capture for any survey to be truly representative.

These challenging conditions make it difficult for household members in remote areas to reach schools and clinics. Remote populations often lack the means or self-efficacy to travel to service facilities far away, and as a result, either do not seek basic services, seek them irregularly, or develop service alternatives, such as community-funded PAUD schools or home-schooling. Geocoding the household-level interviews should allow for an objective assessment of household distances from key facilities, such as schools. These findings, however, also suggest that, in order to assess households' access to service-providers effectively, the study instruments should not only take into account the distance to different facilities, but also the types of facilities or providers that are considered accessible by household members, the time needed to reach different these destinations, the modes, costs, and reliability of transport, the challenges faced during the commute, and how accessibility changes at different times of the year.

Young Lives researchers recommend conducting a mapping activity in each community shortly before the main study begins (Crivello & Wilson, 2016). Ideally, this mapping activity would involve community leaders and prominent community members and would illustrate major roads, water sources, the way the land is used, infrastructural features, important public buildings (including schools, government structures, health facilities, religious structures), main sources of employment, and places of leisure.

In addition to highlighting what is not available within communities, it will be important to ask how these gaps are being filled (e.g. the immunization outreach services) or if communities are in the process of working to fill them. For example, the education sector's *SD Kecil* (Small Elementary School) program aims to help address the access issue for elementary-school-aged children by extending classes to villages in extremely remote areas.

Potentially hazardous environmental exposures
National environmental disasters such as tropical storms, earthquakes, droughts, and massive pollution events are often studied as types of adversity, but this study found that low-intensity environmental hazards may also have important consequences for child development. Flooding, for instance, was cited as the leading cause of crop failure in one of the field sites. This crop failure then reportedly caused families to eat less and lower-quality food in response to the loss of crop yield and revenue. Flooding also led to diarrhea from contaminated water and scabies as

well as mudslides and therefore further access trouble, all of which adversely affected children's wellbeing.

These types of low-intensity exposures may be more difficult to monitor throughout the course of the longitudinal study than higher intensity events, but they represent an important and much more common source of adversity. Using geocodes to create interoperability between the longitudinal dataset and external databases related to weather and climate may be an effective technique to analyze the effects of negative low-intensity environmental exposure on development outcomes.

Household wealth and assets
Research participants sometimes described community members as being too embarrassed to talk about their household consumption, suggesting that extra care should be taken when discussing this topic. One respondent even described being admonished for "asking too many questions about household consumption."

Participants expressed concern over many parents lacking time and energy to care for their children due to their demanding livelihoods as farmers. The amount of free time available not only for children, but also for their parents are likely contributing factors to resilience and positive family dynamics.

Some common coping mechanisms mentioned for household financial shocks included borrowing money, increased work, reduced spending, postponement of purchasing school materials (books, uniforms, shoes), and child labor.

Perception of neighborhood safety and support
Participants across sites often mentioned substance use, and glue huffing in particular, as an increasing source of adversity for youth. Substance use was reportedly more common in areas closer to towns and city centers. The type and severity of substance use differs across Indonesia, but this is an important potential source of adversity that should be documented carefully. Because of its illicit nature, substance use is likely to be underreported and respondents in the longitudinal study should be reassured that nobody in their household will be reported to the police for discussing substance use during data collection.

Community members in Central Mamuju's most secluded, rural areas reported feeling isolated and unsafe as a result. Lack of public outdoor lighting exacerbated this feeling, with one villager expressing concern over children, particularly girls, walking alone in the dark.

Villagers in Central Mamuju, which is home to an extensive migrant population, expressed pride in the diversity of their communities. "The village is my family," said one participant. "The many kinds of people, Balinese, Toraja, Bugis, Javanese, are like different flavors that make our kinship stronger." Social workers and social service heads in Central Mamuju also noted that migrant families in the same area brought positive influences into communities, including alternative child rearing practices. This diversity extended to legal matters, decision-making, and social issues (e.g. premarital pregnancy or pregnancy outside of marriage) and the importance of resolution according to the diverse cultural and religious beliefs of the people involved. Further exploration into the perceived effects of diversity on children's development, character formation, and resilience is warranted.

Individual variables

Physical health and use of services
Despite being relatively common in West Sulawesi, child malnutrition was described as an embarrassing topic of conversation for many parents. Parents reportedly thought that service providers or data collectors would judge them for not being able to take proper care of their children. One health official from Mamuju, for example, said,
"So health providers have a difficult time because, especially for us Sulawesi people, we tend to judge others, like 'Oh, you don't have enough food or are malnourished,' then next month, they won't show up [to Posyandu]. Although we actually mean well, trying to find the right diagnosis, parents see [our questions] as humiliating, and don't show up anymore."

This suggests that special care should be taken to secure a private location and make parents feel comfortable when taking anthropometric data. In these areas, as with much of the country, Posyandu and PUSKESMAS staff are the most common officials tasked with recording nutritional information, and are an important source of local information on common problems and solutions for these types of measures.

Variables specific to maternal health and early pregnancy
The stigma behind having a malnourished child, and the intimidation many people feel at health facilities, could impact how women report their activities and nutritional habits during pregnancy. This could also impact how they report the details of the births of their children, as many expectant mothers (especially in more traditional areas) are still giving birth without a birth attendant.

Respondents described a perceived causal pathway by which early pregnancy commonly leads children to marry early, which in turn causes children—and especially girls—to drop out of school, or to be pressured out by authority figures. Given the sensitive nature of questions about sex and family planning, especially among children, this topic will need to be explored with great care, but the findings indicate that any study of the relationship between types of adversity and educational and health outcomes would not be complete without a thorough investigation of the causes and consequences of early pregnancy. To the extent possible, it would be valuable to try and better understand the attitudes of youth about these questions, in addition to asking about their knowledge and behaviors.

Mental health and access to services
There were no mental health specialists available in any of the three research sites. In Mamasa, informants at the district health office said that this human-resources constraint made it difficult to detect, collect data about, and respond to mental health disorders. Mental health disorders are also reportedly considered taboo in West Sulawesi, and this might influence whether households choose to participate in the study.

Disabilities and access to specialized services
Education and health officials repeatedly noted the need for better data on populations with special needs. As is common throughout the country, officials reported that data on disabilities are challenging to collect because of the stigma associated with disability and because of a lack of awareness about the different types of disability and the needs associated with them. The

headmaster of a school for children with special needs in Mamasa, for example, explained that when she first arrived at the school, parents of children with disabilities in the surrounding communities were reluctant to talk about their children, and that she had spent a considerable amount of time building rapport with them before they shared anything. Even after all those efforts, however, many parents still refused to send their children to her school, because they did not want them to be treated differently. This suggests that the heads of households that have a member with special needs should be approached with attendant care to make it clear that they are not being singled out and that their information will be kept strictly confidential. It is possible, in some areas, that parents may omit information related to special needs, or intentionally try to obscure such information, and it will be important to discuss strategies for addressing this possibility in each enumeration area.

Educational attainment
This study joined IFLS (Sim et al., 2012) and Young Lives (Woodhead et al., 2013) in finding that, while there is often just one proximate cause of school dropout, various underlying adversities typically play a contributing role. This indicates that, in addition to choosing one main reason for dropout or possible dropout during the longitudinal study, respondents should also be invited to discuss their experiences and provide multiple factors that they feel contributed to their dropping out—or their children's dropping out—as well as the factors that contributed to their not returning to school.

Child labor
Respondents reported a wide range of economic and domestic activities for children. Many of these activities were not consistently identified as "work" or "labor" and were not remunerated monetarily. By implication, in addition to asking standard questions about compensated labor, the longitudinal survey may benefit policymakers by asking parents and children specific questions about the types of work that children are expected to do for their families, how these expectations are mediated by the child's educational participation or performance (including vocational schools), as well as by other individual characteristics, such as the child's gender, age, marital status, and "character." It may also be valuable to explore attitudes about how children's work can contribute to household resilience, and how the concept of a household's wellbeing is weighed against that of a child's wellbeing.

Caregiving styles and capacities
Several factors related to caregiving emerged during the course of this study as being influential on child wellbeing, achievement, and resilience. Parental education, gender, income, religion, cultural background, and traditional beliefs each reportedly affected parenting styles and the resulting relationships between caregivers and children. Respondents spoke a great deal about the role of extended families and neighbors in the lives of children as well, particularly of children born to young parents or children with separated parents. The presence and nature of the relationships regarding extended family members in addition to the experience of having young and/or separated parents could have a substantial impact on resilience and exposure to adversity.

Service providers and officials reported that the subject of domestic violence was extremely challenging to study in the district because of local customs. Asking questions related to this traditionally private household matter, especially as someone from outside the community, is

likely to be seen as offensive and may cause tensions with the community. Respondents also noted that household members that discuss violence or abuse with outsiders risk reprisal.

In addition to exploring violence against children, it will also be important to understand how children's exposure to violence between adults in the household affect their development and wellbeing. Further deliberation and consultations will be needed to determine how to explore the subjects of violence, punishment, and parenting styles. Because of the socially constructed nature of these factors, and the sensitivity of the subject of parenting, qualitative methods, such as key informant interviews and focus group discussions, will be especially important for investigating these factors in greater depth during the longitudinal study.

Implications for longitudinal data collection process
In addition to informing which questions should be asked and how, these findings are also useful for making decisions about how the longitudinal study should be designed and executed. This section will review the ways in which the exploratory study findings might inform critical considerations for study design.

Situational analysis and adaptation
In a country as large and variegated as Indonesia, many populations are unaccustomed to outsiders, let al.one researchers wanting to ask questions about issues that are considered private or sensitive. Some communities are suspicious of government, while others are afraid of people from specific ethnic groups or religions, or people who address them in certain languages or dialects. Other areas, such as Mamuju, which have a strong presence of government and development actors, face the opposite challenge of being overly researched. Many are tired of participating in research without recompense, while others are adept at answering surveys in a way that they think will benefit them or their family.

Research teams would do well to take a careful assessment of these situational factors for each enumeration area during the longitudinal survey. While the survey must be standardized in order to allow for cross-site comparisons, these findings suggest that the arrangements for gaining access to communities and of managing long-term involvement of research participants should be tailored to the demands and preferences of each enumeration area. This includes the means of signalling reciprocity to research participants. It may be most acceptable in some areas, for example, to provide compensation for participants' time through small gifts, such as school supplies, as PUSKAPA has regularly done in the past, while in others, it might better to provide a service to the community, as has been done during other longitudinal studies in developing countries (Morrow, 2009). One possibility, for instance, would be to host information sessions for the community on social services that do not directly concern the research project, such as how to register a new marriage. This latter approach could be preferable for places in which providing gifts to participating households is seen as favoritism by non-participating community members.

Involvement of local actors in data collection efforts
Most respondents felt that it was necessary to involve local leaders and service providers in data collection. At minimum, this means receiving approval from district and village officials ahead of data collection, which is already part of PUSKAPA's standard operating procedure, and which was among the first steps taken during the fieldwork for this exploratory study. Respondents also suggested that it could be helpful to work with community leaders in order to

receive buy-in from households to participate in the study, especially considering the long-term nature of the Pathways project. Others thought that approaching households together with community leaders or service providers could help researchers build trust with community members, navigate sensitive topics, and manage parental involvement in activities with children. Working closely with service providers could also help ensure that respondents are referred to the appropriate services when the study exposes acute needs.

Respondents largely agreed that village government and community health staff should be the primary points of contact should researchers encounter emergency cases or delicate matters during data collection, and that if community members were referred to services outside of the village, researchers should notify village leaders.

Working too closely with local leaders and providers, however, can also present a number of risks. As discussed above, government employees represent potential benefits, and thus associating them too closely with the research may raise expectations for services or other types of assistance. The presence of local authorities during interviews, or even the perception that the research is connected with government, can increase the power divide between researchers and participants, and potentially bias respondent answers, especially when asking about access to services or taboo subjects. Finally, channelling all reports of potentially criminal cases through the village head assumes that the village office has no interest suppressing the report of criminal activity, which may not always be the case.

The degree of involvement of local actors will likely vary according to research site, but some degree of involvement is likely to be necessary across the board.

Informed consent and caregiver involvement
Despite the proliferation of government-led surveys throughout West Sulawesi, there did not seem to be a standardized practice of communicating the purposes and future uses of the data collection to survey participants. As a result, those responsible for conducting many of these surveys reported that they had trouble managing expectations from participants. At the same time, it is unclear whether simply explaining that participating in the research will have no direct benefit to community members will be enough to allay expectations, especially as research has historically been so closely associated with the government service providers typically conducting the surveys.

There was no clear indication about how parents should be involved in data collection with children. Respondents reported that it was critical to inform parents and caregivers about the types of questions being asked of children and to request parental consent, though not many talked about the importance of requesting child assent or consent thereafter. Children may not be accustomed to having the option to decline participation if they feel uncomfortable, which should be taken into consideration while preparing informed consent scripts for children and while training local enumerators for the longitudinal study. In Mamasa, adults also explained that they found the word *perjanjian* (agreement) confusing. This word, which is usually used in the context of research to signal consent, reminded respondents of contractual agreements. They found the gravity of this association intimidating, as if they would be held accountable for anything they said during the interview (despite the fact that the researchers explained to them that everything they said would be kept strictly confidential).

Some respondents thought that after receiving parental consent it was not necessary for parents to be present for child research activities, while others disagreed and insisted that parents need to supervise data collection to ensure that no inappropriate questions are being asked. The degree of parental involvement in child research activities will likely need to vary by region, ethnic group, and household, as well as the child's age and evolving capacities.

Alignment with other relevant surveys/data collection
Respondents identified a number of existing government surveys and management information systems that could be drawn upon to complement the Pathways longitudinal study. The Ministry of Health's national Stimulation, Detection, Early Intervention of Child Growth, and Development (SDIDTK) database, for example, tracks physical growth, cognitive development, and mental health for children aged 3-72 months with the intention of informing local child wellbeing programs. This information is input routinely by community health staff in facilities and preschool teachers.

Meanwhile, the MoEC's DAPODIK and the Ministry of Religious Affairs' education management information system for madrassas house data that are updated annually on every student's height, weight, and disability status, as well as the distance of the student's home from school. These systems also provide data on the state of the schools in which children are enrolled. The Community-Based Education Information System (SIPBM) is another management information system that may be useful to the Pathways study. This system warehouses household survey data on school-aged children who are outside of school and various individual and household factors that may be associated with their being out of school. This includes distance from facilities, as well as socioeconomic, health, population administration, and disability variables. In Mamuju, the survey was led by BAPPEDA and conducted with household heads in various sub-districts between 2013 and 2015 with the help of local leaders, including village officials, neighborhood heads, youth organizations (*karang taruna*), and the Family Empowerment Movement (PKK) cadres. Finally, social workers have databases for all children in orphanages (*panti*) under the district social affairs office, and the district religious affairs office has a database for children in Islamic boarding schools (*pesantren*) as well.

It may be possible, with parental consent and permissions from the appropriate authorities, to link these datasets to the Pathways surveys through children's unique identifying numbers (NIK) or student number (NISN). This would allow for a more robust analysis of the individual, family, and systemic factors that affect children's wellbeing without having to expend much added effort on data collection. Linking datasets in this way could also facilitate participant retention, as research managers could use tools like DAPODIK to monitor whether children have moved out of the district.

Mobile participants
These findings suggest that it is especially important to develop mechanisms that are adaptive to mobile participants, as migration would otherwise likely be a considerable source of participant attrition for the longitudinal study. Aside from the fact that many children in rural areas migrate to cities, either alone or with parents, in search of work, participants also noted a number of other reasons that research participants could be absent from home for long periods. In Mamuju and Mamasa, for instance, fisherman and plantation workers can reportedly not return home for weeks at a time. Children from Mamasa, furthermore, occasionally move in

with extended family members to be closer to schools, and therefore may have different domiciles during different seasons. These findings indicate that it may be important to correspond with study participants or contacts related to these participants ahead of each study wave to receive updated information on where they can be interviewed.

Summary of Findings

This section summarizes the key findings from the field research as they relate to each of the four research questions.

Concept of "early childhood adversity" and factors contributing to children's resilience as understood by service providers and community leaders at the subnational level:

- Definitions of adversity differed according to the sector and speciality of the respondent being interviewed, but several types of adversity were mentioned across sectors and locations. These included: poverty, inaccessibility of basic services, malnutrition, and disability. Severe psychological disorders and substance use were also mentioned often.
- There was considerable disagreement about the role of physical and verbal punishment in children's development. Many felt that adults had the right to use physical force with children in order to build their "character," while others thought that this constituted abuse and could harm children's self-esteem and temperment.
- Participants also had mixed opinions about whether child labor was a type of adversity, with many believing that it was a child's duty to contribute to the household economy. Others believed that work could negatively impact children, particularly when it was physically hazardous or when it took away from children's schooling.
- Resilience was an unfamiliar concept to most informants and difficult to discuss in detail. Schools and health facilities were widely seen as critical components of a child's ability to withstand or recover from adversity. National and subnational officials agreed that parental competence and child-rearing styles had a large effect on children's wellbeing and ability to cope with hardship. Extended families and neighbors were also often reported as an important source of support, especially when parents were unable or unwilling to care for their children.
- Ethnic and religious diversity was also listed by some respondents as contributing to resilience by exposing children to new ideas and by motivating them to compete with other groups.

Data gaps related to children's adversity and wellbeing identified by government officials at various administrative levels as constraining their program and policy planning objectives:

- This study found striking disconnects between frontline staff who were often responsible for collecting primary data, district officials who were charged with receiving and transferring data, and the national staff who used data for their planning needs.
- Frontline staff and district officials usually had low data literacy, often did not understand how data would be translated into action, and felt that their constituents were largely overresearched. Frontline staff often reported struggling with communicating the purposes of new data collection efforts to research participants in a

manner that secured their participation without raising expectations for services or other benefits.

- Some subnational informants identified valuable data gaps, including prevalence data on people with disabilities. One informant suggested that better efforts to document the ways in which teachers and school administrators resolve non-academic student issues, such as cases of violence, could improve national understandings of the challenges faced by students and educators alike.
- National officials wanted more complete and valid population data on issues such as child violence, children out of school, parenting competence, and caregiving styles. In some cases, they reported not receiving the minimum amount of data from subnational officers. Many also reported that they needed data from other ministries that they could not access readily. National education officials also noted wanting to improve internal capacities to produce complex analyses with their data.

Challenges to undertaking national longitudinal studies with children:

- Respondents identified a number of potentially sensitive or offensive topics that should be approached with care, including malnutrition, household consumption, parental divorce, sexual activity, and violence—both against children and within the household more generally.
- The fact that many communities have participated in several surveys without receiving direct benefits may make them reluctant to participate any further, especially if there is a corresponding commitment to participating over multiple years.
- Remote households may require significant monetary and time investments for enumerators to reach effectively.
- High rates of migration, and jobs that require long periods away from home, can contribute to high attrition in certain areas.

Characteristics most useful for determining the sampling universe for the Pathways longitudinal study:

- These findings suggest that individuals from remote areas and individuals that migrate, work seasonally, or spend long periods away from home may represent important subpopulations with different experiences of adversity and different modes of resilience. While including a representative proportion of these groups in the study would increase costs, excluding them, or allowing them to attrit disproportionately, would likely bias the study results.
- Respondents largely felt that access to basic services, and education especially, was critical to children's resilience and character formation, yet there is a significant gap in the literature on developing countries related to the long-term effects of different interventions on youth achievement in the face of adversity. This suggests that there may be great value in tracking children's development through adolescence.
- The literature indicates that there is much to be gained from recruiting pregnant mothers into a longitudinal study such as Pathways, as prenatal and neonatal exposure to adversities can have unique consequences for development. However, given the relative infrequency of pregnancy and imperfect pregnancy monitoring, recruiting and maintaining a sample of pre-term mothers may not be cost-effective, especially in remote areas.

These findings provide unique insights for the next steps in designing the Pathways Out of Adversity longitudinal study, but there are a number of issues that the field research could not address. For example, owing to the study location, it was impossible to explore the relationship between political violence and child development, as would be relevant to many situations across Indonesia. These findings also depend entirely on the input of officials, service providers, community leaders, and civil society, and therefore exclude valuable aspects of the experiences children and their caregivers have with adversity.

Recommendations

This section presents recommendations related to the broader approach for the Pathways study, followed by technical recommendations for instrument development and testing.

Pathways Study Approach

- **Employ a mixed methods approach.** To meet all the objectives of the initiative, the longitudinal study should employ a mixture of research methods, including a structured (but child-friendly) interview for children and adults in selected households, a structured institutional assessment for schools in the select sites (including faculty and student performance), and a range of qualitative methods adapted to different ages and contexts.

- **Safeguard and advance the highest research ethics.** Due to the sensitivity of the Pathways study's subject matter, the relative vulnerability of children to harm from participating in research, and the likelihood that many of the communities sampled into the Pathways study will feel "over-researched," developing careful, culturally-appropriate ethics and safety guidelines and protocols should be a critical next step in the study design. These tools should be updated before and after each research activity, should be widely available to all research partners and research staff in the relevant language, and should be a core component of researchers' training. A vital component of these ethics and safety tools will include informed consent and assent for participants of all ages. Informed consent is an ongoing process rather than a one-off event, and consent will be requested of participants ahead of each wave of data collection and will consist of several parts, including the consent to participate at the moment, consent to be contacted for future participation, consent to be contacted through relatives and friends in the event of migration, consent to link their survey data to other government databases, and consent to map and photograph the participating household. It may also be necessary to ask for consent to be involved in unanticipated analysis in the future.

- **Assess and address risk.** In each selected site, research teams should work with local leaders, service providers, relevant civil society organizations, and researchers to receive local buy-in for the study, to map out safe research spaces and referral networks in the event that data collection exposes acute needs, to assess the likelihood that certain methods, questions, or words might cause harm or offense (especially related to sensitive topics, such as violence, mental health, and disability), and to develop

strategies for safeguarding meaningful participation in research for all selected respondents.

- **Communicate effectively.** A comprehensive communications strategy and protocol should be developed between MoEC, the study partners, and the participating study communities. This is important to enable smooth horizontal coordination at the national level throughout rounds of study planning, execution, analysis, and publication. Such a strategy will also help the MoEC to demonstrate the use of such a study for other sectors and thereby to establish support for the study among other line ministries. This strategy will also ensure better vertical coordination within the MoEC, so that information relevant to the study's implementation, and use of the study results, can be communicated effectively to subnational leaders and frontline staff. Finally, this will help ensure that participating communities understand the study's findings and the way those findings are being put to use, and that they are able to provide feedback on the study.

Instrument Development and Testing

- **Use qualitative methods to identify relationships between variables.**
  Key informant interview and focus group discussion feedback from the scoping study illustrate how many variables (such as access to roads, family income, and access to healthcare and education) are often interconnected, perpetuating the cycle of poverty within households and communities. Young Lives extensively employs the use of qualitative data collection with children, delving into how such variables impact their lives and providing the insight needed to identify the existence of these connections and possible windows for intervention. Based on the success of the Young Lives study, it is recommended that similar qualitative tools be utilized in Pathways to allow for exploration of how exposures to different types of adversity are related.

- **Reduce respondent burden.** The study instruments should be designed as efficiently as possible to facilitate effective participant and enumerator engagement and to minimize the negative impact of participation. One strategy for reducing the size of the survey is to limit most time-invariant items (e.g. date of birth, parental education, etc.) to the baseline survey so as to create shorter surveys for subsequent waves. Some time-invariant questions, however, may still need to be asked again in following rounds in order to provide information on recall quality. Another strategy would involve using a rotating panel design where instead of interviewing the same group of children in each survey wave, the panel would alternate. For example, the sample could be divided into three groups (A, B, and C) and all three would be interviewed for baseline. Then, in the first follow-up, only groups A and B would be interviewed. In the second follow-up, B and C would be interviewed, followed by A and C in the third follow-up.

- **Take special measures to streamline follow-up and reduce attrition.** Each household should be asked to provide contact information for relatives or friends who will be able to provide information should the respondent migrate or be otherwise unreachable during a subsequent round of data collection. Households should be

geocoded and mapped, and pictures of the households should be collected to enable enumerators to re-identify households in subsequent waves.

- **Include objective measures of health.** To the extent possible, the survey should include objective measures of health (e.g. anthropometrics) to complement self-report measures. These objective measures may include individual as well as household-level items. For instance, IFLS tested household salt for iodine content (RAND Corporation & SurveyMeter, 2014). Depending on the complexity of objective measures taken and the capacity of field researchers, it may be possible to work with local health professionals to collect certain indicators.

- **Map community assets.** All facilities providing local basic services, including education, health, civil registration, courts, police stations, etc. should be mapped with local leaders and geocoded in order to determine their distance from selected households.

- **Link with external datasets.** Every effort should be made to identify existing databases that could inform and become interoperable with the longitudinal database. Data identifiers used by these various databases should be linked to the longitudinal survey as much as possible, including unique individual identifiers such as the Ministry of Home Affairs' NIK and MoEC's NISN, and the administrative location codes used by BPS and the Ministry of Home Affairs. These and geospatial information systems codes can be used to connect the longitudinal database with other external data, such as BPS surveys, weather data, earthquake and flood risks data, and air quality data.

- **Panel composition.** It will be important to determine which age group or groups to recruit for the study's baseline. The first and most scientifically ideal option is to recruit pregnant mothers so as to track potentially negative exposures prenatally, but this would require considerable resources to identify and reach participants and would require oversampling in order to compensate for miscarriage, stillbirth, and neonatal mortality. Another option is to recruit neonates, but this would still require considerable effort for identification. Also, in order to be most informative, the prenatal and neonatal options require high-frequency data collection in the early months in accordance with the speed of development during that period. Few longitudinal studies in developing countries we reviewed attempted these options. Young Lives, citing resource challenges, recruited children at 6 months, while IFLS recruited children of seven years and above.

Another drawback of recruiting very young participants is that, within the current timeframe of the study (endline in 2030), it would not be possible to test the effects of early adversity in late adulthood. One option for addressing this constraint is to recruit a dual cohort. For example, in 2018, one cohort can consist of 6-month-olds at baseline and the other of 7-year-olds. By 2030, the first cohort would be aged 11 and the second would be aged 18. This would require a larger sample size, and data related to early

adversity for the older group would have to be collected retrospectively, but this would allow for a better understanding of how the effects of early childhood adversity, and resilience pathways, change over time.

Annex 1. Abbreviations and Acronyms		
Abbreviations/Acronyms	**Bahasa Indonesia**	**English**
Babinkamtibmas	Bintara pembinaan dan keamanan ketertiban masyarakat	Local Police Officers
Bappeda	Badan Perencana Pembangunan Daerah	Regional Agency for Development Planning
BAPPENAS	Badan Perencana Pembangunan Nasional/Kementerian Perencanaan Pembangunan Nasional	National Development Planning Agency/Ministry of National Development Planning
BKKB	Badan Koordinasi Keluarga Berencana	Population and Family Planning Agency
CSO	Organisasi Masyarakat Sipil	Civil Society Organization
DAPODIK	Data Pokok Pendidikan	Education management information system
ECD	Pertumbuhan Anak Usia Dini	Early Childhood Development
ECE	Pendidikan Anak Usia Dini	Early Childhood Education
FGD	Diskusi Kelompok Terarah	Focus Group Discussions
Gerakan Kembali Bersekolah	-	Movement Back to School
GoI	Pemerintah Indonesia	Government of Indonesia
IFLS	Survei Kehidupan Keluarga Indonesia	The Indonesia Family Life Survey
Kandang	-	Cage
Karang Taruna	-	Youth Organization
KII	Wawancara Informan Kunci	Key Informant Interviews
KIP	Kartu Indonesia Pintar	Smart Indonesia Card
Lembaga Konsultasi Kesejahteraan Keluarga	-	Institute for Family Welfare Consulting
MoEC	Kementerian Pendidikan dan Kebudayaan	Ministry of Education and Culture
Musrenbangdes	Musyawarah Perencanaan dan Pembangunan Desa	Village Community Discussion for Development and Planning
NIK	Nomor Induk Kependudukan	Unique identifying number
NISN	Nomor Induk Siswa Nasional	Unique student number
P2TP2A	Pusat Pelayanan Terpadu Pemberdayaan Perempuan dan Anak	Integrated Service Center for Women and Children
Panti	-	Orphanage
PAUD	Pendidikan Anak Usia Dini	Early Childhood Education Program
Pathways	-	Pathways Out of Adversity study

PBI-JKN	Penerima Bantuan Iuran – Jaminan Kesehatan Nasional	Nationally-subsidized health insurance
Penjaringan	-	Networking Program
Pesantren	-	Islamic Boarding Schools
PIP	Program Indonesia Pintar	Smart Indonesia Program
PISA		Program for International Student Assessment
PKH	Program Keluarga Harapan	Family Hope Program
PKK	Pembinaan Kesejahteraan Keluarga	Family Empowerment Movement
PNS	Pegawai Negeri Sipil	Civil Servants
PNPM Generasi	Program Nasional Pemberdayaan Masyarakat Generasi	National Program for Community Empowerment Generation
Polres	Polisi Resor	District Police
Posbindu	Pos Pembinaan Terpadu	Integrated Development post
Posyandu	Pos Pelayanan Terpadu	Integrated Health Service Post
Pusat Penelitian Kebijakan	-	Policy Research Center
PUSKAPA	Pusat Kajian Perlindungan Anak	Center on Child Protection and Wellbeing
Puskesmas	Pusat Kesehatan Masyarakat	Community Health Center
Renstra	Rencana Strategis	Strategic Plan
RPJMN	Rencana Pembangunan Jangka Menengah Nasional	National Medium -Term Development Plan
SD	Sekolah Dasar	Primary School
SDGs	Tujuan Pembangunan Berkelanjutan	Sustainable Development Goals
SDIDTK	Simulasi, Deteksi, dan Intervensi Dini Tumbuh Kembang Anak	Stimulation, Detection, Early Intervention of Child Growth, and Development
SIOLA	Stimulasi Intervensi Optimalisasi Layanan Anak	Enhancement of Child Service Interventions
SIPBM	Sistem Informasi Pendidikan Berbasis Masyarakat	The Community-Based Education Information System
SUSENAS	Survei Sosial Ekonomi Nasional	National Socioeconomic Survey
TKSK	Tenaga Kesejahteraan Sosial Kecamatan	Sub-District Social Welfare Officer
UU Perlindungan Anak	-	Child Protection Act
YL		Young Lives

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