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# Tuvalu Early Human Capability Index (TuEHCI) Report 2021

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## Executive Summary

Healthy child development is an enabler of human capability allowing children to reach maturity, and participate in economic, social and civic life. Studies show that a child's early life has significant consequences for success, health and wellbeing in their adult years. Both cognitive and non-cognitive skills prior to school entry have been shown to predict literacy and numeracy skills throughout school. Success at school then predicts further educational attainment, higher income, and better health and wellbeing throughout the life course. Lower levels of educational attainment predict unemployment/lower income and greater illness in adulthood and shortened lives. This cascade of negative impacts over the life course places significant economic burden on a country. Consequently, many of the problems arising in early childhood have associated social and financial costs that cumulatively represent a considerable drain on a country's resources. For these reasons it is imperative for a country to understand how well their young children are faring. Only with high quality data on child development across an entire country, can government and donors understand what might be going well or not so well for their children and then truly invest with confidence.

Tuvalu is one of the leading countries in the world when it comes to repeat monitoring of child health, development and early skills. In 2015/2016, for the first time, Tuvalu undertook what was known as the Tuvaluan early Human Capability Index (TuEHCI); a developmental census survey of all children aged from 3 through to 5 years of age across all 9 islands. The results provided the first comprehensive snapshot of how well children were faring in each and every community. Now in 2022, this report provides the results of the second application of the TuEHCI across the country and comparisons to the previous data collected in 2015/2016. The TuEHCI showcases the government's remarkable commitment to measuring early childhood development outcomes – at scale and in a way that is comparable over time. The resulting data are helpful for the government in ways that one-off measurement, or measurement at different times using different tools, cannot achieve.

One of the main findings in 2015/2016 was that a high proportion of children were stunted. Being stunted is more than just being short for one's age. The developmental biology of stunting poses significant impediments to child cognitive and non-cognitive skill formation. Globally, more than 149 million children are stunted. Children who are stunted have impaired brain development, leading to lower cognitive and socioemotional skills. Fortunately, in 2021 we have seen a dramatic reduction in the prevalence of stunting overall, which is a major achievement for the country. However, as the TuEHCI captures how well children are doing in every community, we can see that there are still some communities that could benefit from targeted support to help them reduce the number of children stunted.

Beyond the results for stunting, overall, there have been minor improvements in the different aspects of child development between 2016 and 2021, with the most significant improvement seen for 3-year-old children, reflecting higher rates of enrollment/attendance in preschool. Children scoring better on the TuEHCI tend to be attending preschool and benefit from greater stimulation for their development at home.

As a companion to this report, the TuEHCI data have been geographically mapped so that the results can be shared with the communities to let them know how their children are doing and to start discussions about what could be done better to help support their children. The TuEHCI will be repeated again in 2025, allowing us to measure the impact of early childhood programs, such as the Tuvalu Learning Project (TuLEP) and other initiatives, on child outcomes. In the meantime, the results presented here along with the maps, should provide the government, communities and donors with crucial data to help inform their current and future efforts in Tuvalu.

## Section 1: Introduction and Background

### 1.1 Country Context

Tuvalu is one of the smallest, most remote, and climate- vulnerable countries in the world. The country is comprised of nine small islands with a total land area of only 26 square kilometers spread across half a million square kilometers of the Pacific Ocean. There are approximately 11,000 inhabitants, more than half of whom live on Funafuti.

According to the Human Capital Index which measures the amount of human capital that a child born today can expect to attain by age 18, Tuvalu ranks 83<sup>rd</sup> out of 157 countries. A child born in Tuvalu today will be 55 percent as productive when she grows up as she could be if she had complete education and full health. The current ranking is skewed by national education challenges. While the average years of schooling in Tuvalu is 11.9 years, the number of quality adjusted learning years is 7.4, meaning children are in school but not learning for the equivalent of nearly 4.5 years, pointing to issues of quality of learning (World Bank, 2020).

### 1.2 Why Invest in Early Childhood Development

Strengthening early childhood development (ECD) outcomes is critical to improving the quality of education. Investments in quality early childhood care and education (ECCE) can help build early human capital, setting a strong foundation for subsequent education levels and addressing early disadvantages and inequality.

Global evidence shows that children who attended ECCE demonstrate higher attendance and better achievement in later education (Garcia et al., 2018). Quality early education programs provide stimulating environments, developmentally appropriate activities, and opportunities for social interaction. Such programs have been associated with improved school readiness, language development and cognitive skills. Analysis of data from Multiple Indicator Cluster Surveys (MICs) and Demographic Health Survey (DHS) across 48 countries showed that 44 percent of children who attend ECCE programs were on track in literacy and numeracy skills, compared to only 12 percent of those who did not attend ECCE programs (UNICEF, 2019). Further, these impacts carry into primary and secondary education. Evidence from PISA data finds that after controlling for socioeconomic differences, for a cohort of 15-years-olds in school, those who attended preschool scored a year ahead of their peers (World Bank, 2018). Evidence from Kenya and Tanzania shows that children who attend preschool enroll in primary school late, but once in school they progress faster – between the ages of 13 and 16 years, they have improved attainment and score higher on cognitive tests (Bietenbeck et al., 2017).

Numerous other factors influence the trajectory of early childhood development, encompassing a range of individual, familial and environmental determinants. Interventions that target community involvement in early childhood care are effective in influencing a child's readiness to learn and are often low cost. In Indonesia, community-based playgroups have had sustained impacts on child development, especially for the most disadvantaged children with benefit-cost ratios ranging from 1.3 to 4.3 (World Bank, 2018). Further, enrollment in playgroups followed by kindergarten increased test scores in primary school by 0.42-0.43 standard deviations (Nakajima et al., 2016).

Evidence from Tonga showed that supporting communities to establish playgroups increased literacy and numeracy domains of school readiness by 0.17-0.19 standard deviations among disadvantaged children (Macdonald et al., 2018). In Ghana, community-run playgroups had positive impacts on children's cognition and school readiness, with improvements in pre-numeracy, pre-literacy, fine motor skills, and socio-emotional development (IPA, 2018). A mobile libraries program in Mongolia that improved parents' access to educational resources demonstrated that children enrolled in the program had higher cognitive and non-cognitive skills than those who were not (World Bank, 2018).

### 1.3 ECD Investments and Outcomes Measurement in Tuvalu

The Ministry of Education, Youth and Sports (MEYS), with support from the World Bank, launched the Tuvalu Learning Project (TuLEP) in 2020 to strengthen the quality of education and service delivery in the early years. TuLEP is a five-year project funded by an IDA grant of US\$14 million. Building on global and regional best practices, TuLEP supports training of ECCE teachers on play-based pedagogy, the new ECCE curriculum and child protection and inclusion; implementation of weekly playgroups at preschools; resourcing of ECCE centers with learning materials, age-appropriate readers and playgroup kits; and regular public health official visits to ECCE centers to carry out child development monitoring and community engagement.<sup>1</sup>

The TuLEP also supports the measurement of ECD outcomes and the quality of teaching practices at ECCE centers and playgroups. The Early Human Capability Index (EHCI) was used to provide a holistic population measure of ECD. The tool was originally developed in and for the Pacific region (Brinkman and Thanh Vu, 2017) and has now been used in over 15 countries. While there are several other instruments that can be used to measure ECD outcomes, the EHCI is free-to-use and does not require any extensive training to administer it. The tool includes 70 items across 8 domains and can be completed by caregivers or teachers in less than 10 minutes. The instrument has evidenced reliability and validity (Sincovich et al., 2019 and Sincovich et al., 2020) and has also been shown to be sensitive to quality measures captured by the TEACH ECE lesson observation tool (Brinkman et al., 2022). It is thus well-suited for large-scale implementation in resource-constrained environments while being capable of detecting developmental changes and predicting future outcomes. Other instruments that are used to measure ECD outcomes, including the Multiple Indicator Cluster Surveys Early Child Development Index (MICS-ECDI) and the World Bank's Anchor Items for Measurement of Early Childhood Development (AIM-ECD), both include items from the EHCI.

Tuvalu's commitment to ECCE, including the regular measurement of outcomes, is commendable. The eHCI was first implemented in Tuvalu in 2015 as a census survey covering all children aged 3 to 5 years (Brinkman et al., 2017). The 2021 iteration provides a robust baseline for ECCE interventions implemented under TuLEP. Known as the TuEHCI in Tuvalu, another round of the EHCI will be implemented in 2025 at the end of the project. Measuring ECD outcomes at scale and over time in a comparable way bolsters the government's capacity to identify areas of need and better target policies and programming. The survey will provide rich data to assess the effectiveness of ECD interventions at scale, while providing critical evidence for the region and

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<sup>1</sup> World Bank. 2020. *Project Appraisal Document – Tuvalu Learning Project*. <https://documents1.worldbank.org/curated/en/663351590530904675/pdf/Tuvalu-Learning-Project.pdf>



globally. It will also inform future ECD investments for MEYS and other development partners in Tuvalu.

In addition to the TuLEP, UNICEF provides support to the ECCE sub-sector with interventions such as the ECCE sub-sector review and curriculum implementation planning, development of ECCE quality standards, development of in-service training modules aligned with the Pacific ECCE Teacher Competency Framework and new national curricula, and regional review of inclusive education and child protection policies and programs. Other key partners in Tuvalu include the Australian Department of Foreign Affairs and Trade (DFAT) and the Education Quality and Assessment Program (EQAP).

#### 1.4 Overview of the Tuvalu Early Human Capability Index (TuEHCI) Survey

The TuEHCI survey was administered in 2021 when education systems globally were affected by the COVID-19 pandemic. As a result of strict border closures, Tuvalu recorded its first confirmed case of COVID only in October 2022. As such, the TuEHCI data collection was not affected by the pandemic. The impact of the COVID-19 pandemic is likely to be low as ECCE centers were closed for a short period of time (less than 2 weeks), and the ECCE Unit at MEYS distributed activity sheets and homework to parents to promote home stimulation.

One of the key results from the 2021 TuEHCI survey is the dramatic reduction in stunting prevalence from 36.7 percent in 2015/16 to 11.5 percent in 2021. This progress can be explained by critical policy actions undertaken in light of the TuEHCI 2015 results, which were disseminated to policy makers through a Cabinet Paper in 2016. Key messages were also reiterated through the UNICEF-World Bank-supported Conference of the Child in 2017. The World Bank-supported Development Policy Operation supported an increase in the relative price of sin goods including added-sugar drink products. Increase in average prices between 2017 and 2019 exceeded overall CPI inflation rates over the same period by 2 percent (World Bank 2018). A Cabinet Paper on tax reforms was submitted in October 2017. In 2020, the government introduced an amendment to the Consumption Act to provide exemptions on consumption tax on healthy food and vegetables. It also amended the Customs and Excise Duty to include sin foods in the schedule (Government of Tuvalu, 2021). The government established the National Advisory Committee of Early Childhood Development (NACE) in 2021 to coordinate ECD activities across the education and health sectors. Further, with support from DFAT, vertical gardens were introduced through an agricultural competition in two locations on Funafuti. DFAT also supported nutritionists to encourage breastfeeding practices. The National Advisory Committee on Child's Rights supported the distribution of nutritional sachets through a community awareness program.

Another key achievement is a significant increase in preschool participation from 74 percent in 2015/16 to 83 percent in 2021. In 2016, the ECCE Unit established playgroups in all ECCE centers and distributed resources through playgroup starter packs. This was followed-up by inspection visits and a community awareness program. Enrollment of children aged 0-2 years into playgroups provides an introduction to the formal learning environment and MEYS staff highlighted the importance of this for preschool enrollment. However, support to playgroups stalled after the roll-out of PEARL and in 2021, less than half of the children aged 3 to 5 years attended playgroups.

The MEYS re-introduced intensive support to ECCE centers to implement playgroups under the TuLEP which is likely to improve access to and quality of playgroup sessions.

The report is organized as follows: Section 2 presents an overview of data collection and sample characteristics; Section 3 provides an overview of factors impacting child developmental outcomes; Section 4 presents child developmental outcomes across different domains and by island and village; Section 5 demonstrates how the explanatory factors interact with child developmental outcomes; and Section 6 concludes with a brief discussion on key findings and evidence-driven recommendations.

## Section 2: Data Collection

Data was collected across all communities in Tuvalu between August and October 2021 from caretakers and teachers covering 928 children aged 2 to 5 years. For the purpose of this analysis, children below the age of 3 years have been excluded from the sample so that the results are comparable with the 2015 results. Of the 850 children aged 3 to 5 years expected from birth records shared by the MOHSWGGA, 835 children were reached, representing a 98 percent response rate. The 835 children resided in 22 villages across 9 islands in Tuvalu, namely Funafuti (N=470), Vaitupu (N=80), Niutao (N=78), Nui (N=50), Nanumea (N=47), Nanumaga (N=42), Nukufetau (N=39), Nukulaelae (N=25), and Niulakita (N=4). Information was collected regarding children’s health and development status, parental engagement at home, and playgroup and preschool participation.

As demonstrated in Table 2.1, the share of male children was marginally higher than that of female children. The number of 5-year-old children was a little lower than the number of 3 and 4-year-old children. The share of children reported to have a disability<sup>2</sup> was relatively high at 25 percent. Data on special needs status was missing for 9 percent of the sample. A large majority of the children (around 68 percent) had mothers who had completed secondary education or higher. Data on mother’s education was missing for 12 percent of the respondents. This is a considerable improvement from 2015 when data on mother’s education was missing for 93 percent of the respondents.

Table 2.1: Sample characteristics

Variable		Number	Percent
Gender	Male	459	55%
	Female	376	45%
Age	3 years	312	37%
	4 years	298	36%
	5 years	225	27%
Special Needs Status	Yes	205	25%
	No	552	66%
	Missing	78	9%
Mother's Education	Completed primary school	52	6%
	Some secondary school	121	14%
	Completed secondary school	206	25%
	Any higher/tertiary education	355	43%
	Missing	101	12%

<sup>2</sup> Special needs categorization is adapted from the UNICEF MICS (2021) definition of functional difficulty. Special needs status for children aged 3 to 5 years is defined as having responded “A lot of difficulty” or “Cannot at all” to questions within all the listed domains.

## Section 3: Factors Impacting Child Development

### 3.1 Preschool and Playgroup Participation

Tuvalu has 18 early childhood care and education (ECCE) centers with 10 ECCE centers on Funafuti<sup>3</sup> and one ECCE center on each of the outer islands. All ECCE centers deliver preschool classes and playgroup sessions; however, enrollment is not mandatory in either. Preschool lessons focus on children aged 3 to 5 years, are delivered by trained ECCE teachers, follow the ECCE curriculum, and are uniformly structured across all ECCE centers. Playgroups offer an opportunity to engage children under 5 years as well as their parents and caregivers. In Tuvalu, teacher and community training on playgroups was conducted in December 2021 with support from TuLEP, and as such the TuEHCI data provides a good baseline for playgroup attendance and quality.

Preschool attendance increased significantly from 74 percent in 2015 to 83 percent in 2021 (see Table A1.1). This increase is largely driven by the higher share of 3-year-old children enrolling in preschool (86 percent in 2021 compared by 77 percent in 2015). Preschool attendance rate decreased for 5-year-old children between 2015 and 2021 but this change was not significant. There were no significant gender disparities in preschool attendance observed in 2021 (see Figure 3.1.1). Further, there were no significant disparities in preschool attendance between Funafuti and the outer islands in 2021.

Figure 3.1.1: Preschool Attendance by Gender and Age, 2015 and 2021

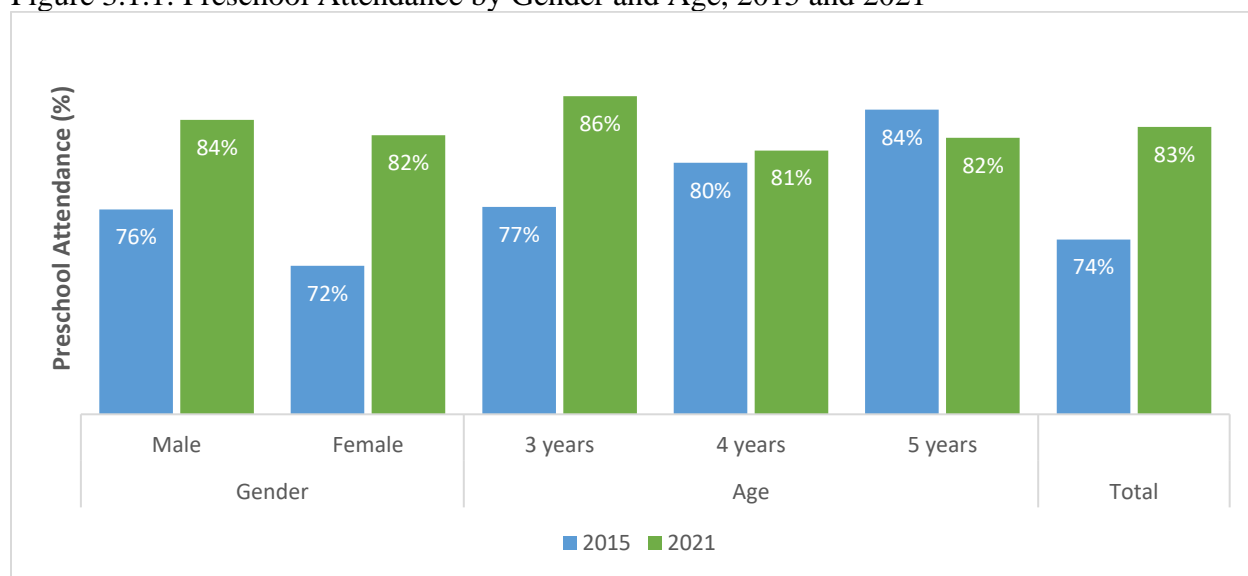
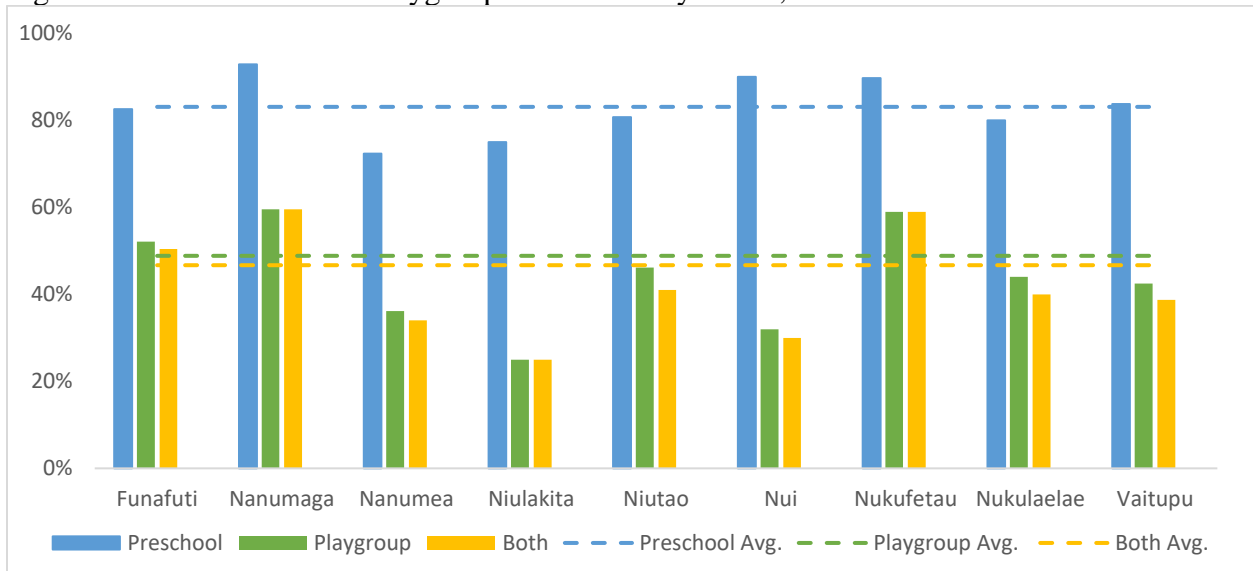


Figure 3.1.2 shows that in 2021, preschool attendance was highest in Nanumanga island (93 percent) and lowest in Nanumea island (72 percent). Less than half of children aged 3 to 5 years were attending playgroups. Of those attending playgroups, 54 percent are boys, and 74 percent are 3 or 4-year-olds. Only 47 percent of the children in the sample attend both preschool and playgroups.

<sup>3</sup> Funafuti preschool was closed for rehabilitation in 2019 and is likely to be reopened in 2023.

Figure 3.1.2: Preschool and Playgroup Attendance by Island, 2021



Among parents or caregivers who enrolled their children in preschool, 66 percent reported that it was because preschool was *good for development/education*. Similarly, 61 percent of parents or caregivers who enrolled their children did so for the same reason. The main reason for non-enrollment in preschool and playgroup was because the *child was not old enough* (15 percent and 17 percent, respectively).

### 3.2 Home Stimulation

Parents or caretakers were asked if they or somebody else in their family over 15 years of age had engaged in a variety of parent-child engagement activities in the last three days. A significant increase was observed in the share of parents engaging across all parent-child activities between 2015 and 2021 (see Table A1.2). Following the UNICEF MICS definition of parental engagement, in 2021, about 74 percent of parents engaged in at least four out of the six home stimulation activities in the three days prior to the survey. This is compared to a figure of 63 percent in 2015. Further, there were no significant disparities in parental engagement across the different activities between Funafuti and the outer islands in 2021.

Figure 3.2.1: Share of Parents/Caregivers Engaging in Home Stimulation Activities, 2015 and 2021

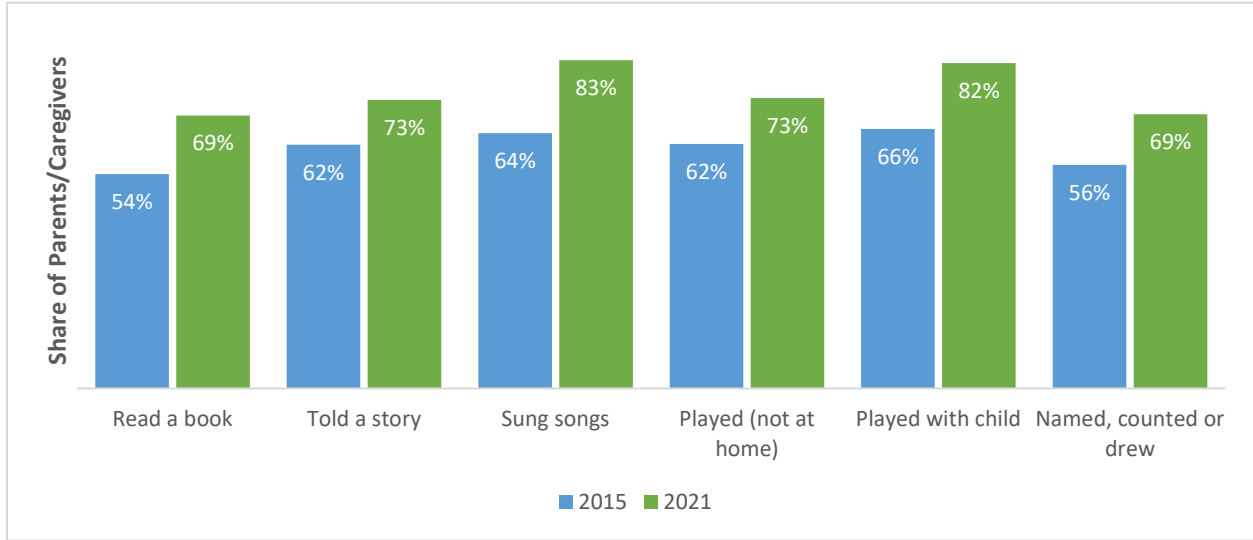
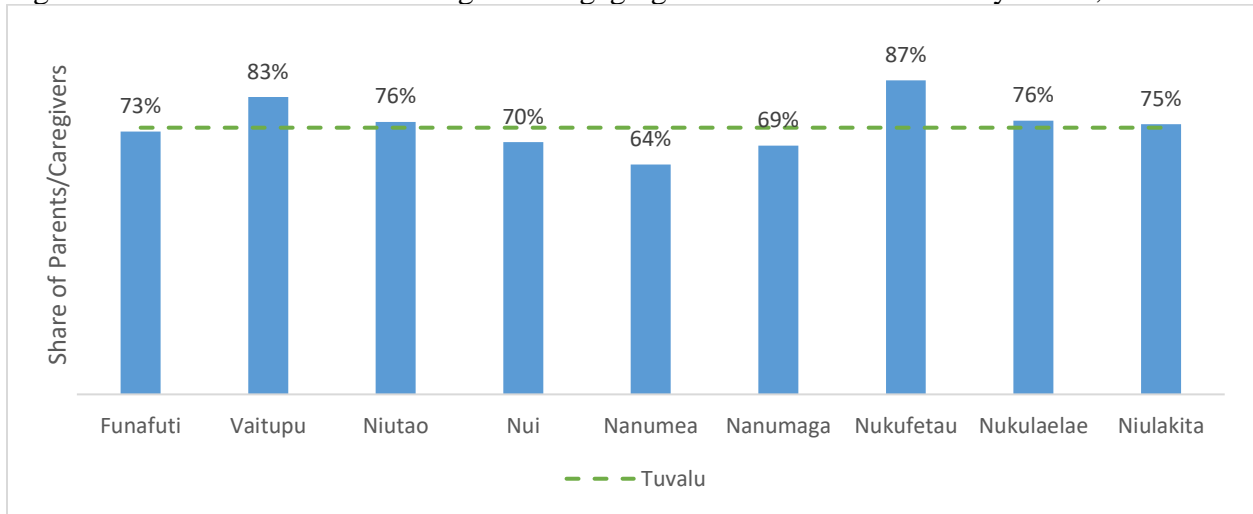


Figure 3.2.2 below shows the share parents or caregivers that engaged with their children in four or more activities in the previous three days by island. This figure was the highest in Nukufetau and Vaitupu and the lowest in Nanumea and Nanumaga.

Figure 3.2.2: Share of Parents/Caregivers Engaging in 4 or More Activities by Island, 2021



### 3.3 Child Health and Nutrition

Children’s height and weight was measured to calculate the presence of undernutrition in the form of stunting, wasting, underweight and overweight prevalence amongst children in Tuvalu. Stunting refers to a child who is too short for their age. It is the failure to grow both physically and cognitively and is the result of chronic or recurrent undernutrition. Stunting is largely irreversible and has long term negative impacts on cognition and physical development, health, and productivity. Wasting refers to a child who is too thin for their height, a reflection of sudden weight

loss usually due to starvation or disease. Untreated, wasting progresses and increases the risk of child mortality significantly. If a child is classified to be underweight, this could imply that they are stunted or wasted, or both (Brinkman et. al 2017). Overweight refers to a child who is too heavy for their height.

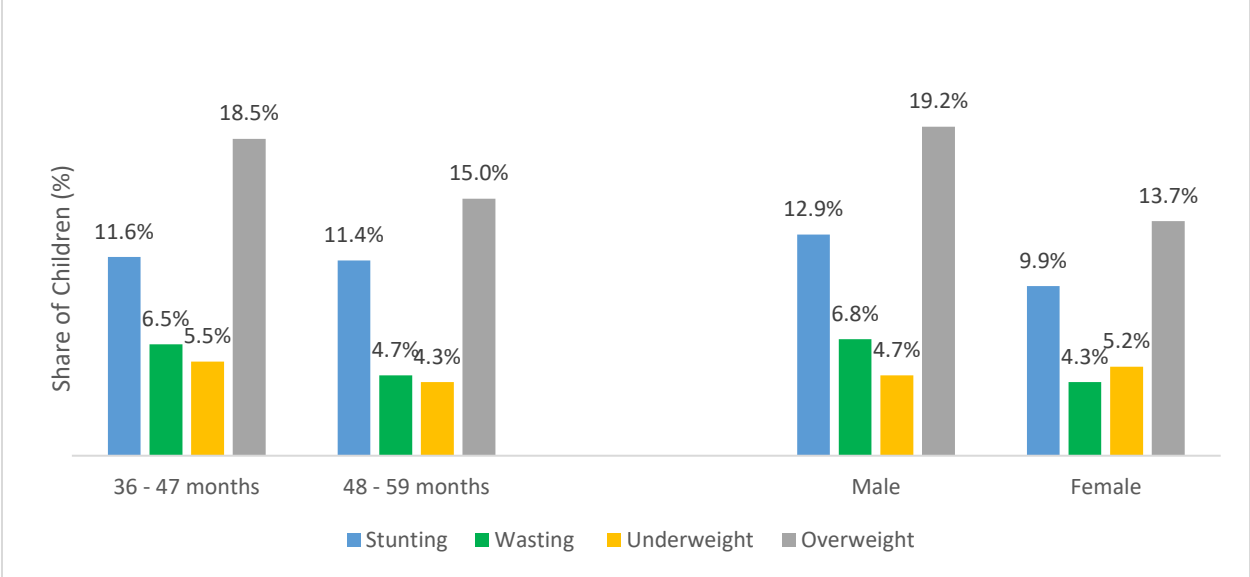
While stunting and wasting are of medium public health significance in Tuvalu, Table 3.3.1 below shows that the prevalence of stunting decreased dramatically from 36.7 percent in 2015 to 11.5 percent in 2021, resulting in the reclassification of public health significance from high to medium. Wasting prevalence increased marginally; however, this increase was not significant. Underweight prevalence fell significantly from 11.6 percent to 4.9 percent between 2015 and 2021 and went from high public health significance in 2015 to medium public health significance in 2021. While overweight prevalence remains high at 16.7 percent in 2021, there has been a significant decrease from 23.6 percent in 2015.

Table 3.3.1: Undernutrition Prevalence and Public Health Significance, 2015 and 2021

Form of undernutrition	Share of Children		WHO classification
	2015	2021	
Stunting	36.7	11.5	10-19 = 'medium' public health significance
Wasting	5.1	5.6	5-9 = 'medium' public health significance
Underweight	11.6	4.9	2.5 - 4.9 = 'low' public health significance
Overweight	23.6	16.7	≥15 = 'very high' public health significance

Figure 3.3.1 below shows that undernutrition prevalence rates are marginally higher for younger children (36 to 47 months) than they are for older children (48 – 59 months). Stunting and overweight prevalences are significantly higher for boys than for girls.

Figure 3.3.1: Undernutrition Prevalence by Age and Gender, 2021

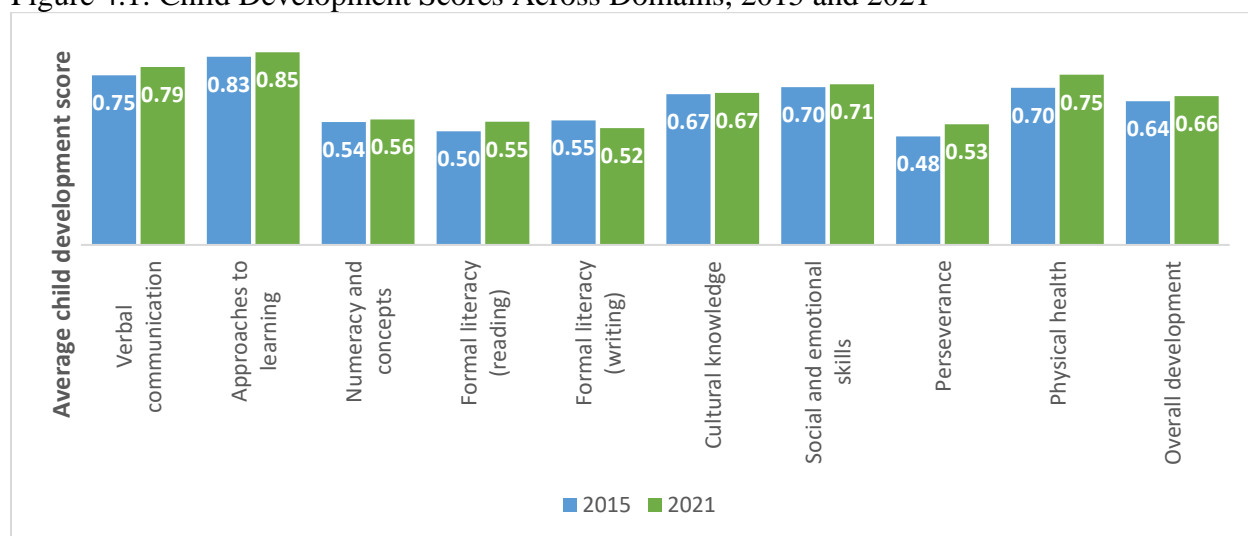


## Section 4: Child Developmental Outcomes

The tool used to measure child development is the Early Human Capability Index (EHCI). The EHCI is a holistic measure developed to capture the key aspects of child development in 3 to 5-year-olds that predict future capability. It provides a score for each child on nine different developmental domains: verbal communication, approaches to learning, numbers and concepts, cultural and spiritual knowledge, formal literacy (reading), formal literacy (writing), social and emotional skills, perseverance, and physical health. Scores for each of the domains range from 0 to 1; 1 being the best score and 0 being the lowest. The data are not weighted or age standardized, as such, older children are expected to have higher scores on each of the domains to reflect more advanced development (Brinkman et. al 2017). The overall development score for each child is determined as a simple average of scores across the nine domains, and similarly overall development scores range from 0 to 1. In Tuvalu, the EHCI was adapted to local context in consultation with local stakeholders<sup>4</sup> in 2015 for the first iteration of the survey. Subsequently, a few additional questions around playgroup attendance and community awareness programs were added in 2021.

Figure 4.1 below represents children’s average scores across the nine domains as well as their average overall development scores. The average overall development score was 0.66, marginally (but not significantly) higher than the 0.64 figure in 2015. In 2021, children scored the highest on approaches to learning, verbal communication and physical health. While the lowest scores were observed across the perseverance and formal literacy (reading and writing) domains, significant improvements were made in perseverance and formal literacy (reading) between 2015 and 2021. Significant increases between 2015 and 2021 were also observed in the verbal communication and physical health domains (see Table A1.3). The average score for formal literacy fell between 2015 and 2021; however, this change was not significant.

Figure 4.1: Child Development Scores Across Domains, 2015 and 2021



<sup>4</sup> Local stakeholders included staff from MEYS and MOHSWGA, preschool teachers and service providers, parents and community leaders, and church members.



Figure 4.2 represents disparities in average overall development scores by gender and age. As in 2015, and consistent with global literature, girls score higher than boys and older children score higher than younger children. In fact, in 2021, girls scored higher than boys across all nine developmental domains. However, the gap between the average overall development score of girls and boys fell between 2015 and 2021 as the average overall development score increased significantly for boys (see Table A1.4). The greatest increase in overall development scores between 2015 and 2021 is among 3-year-old children.

Figure 4.2: Overall Development Scores by Gender and Age, 2015 and 2021

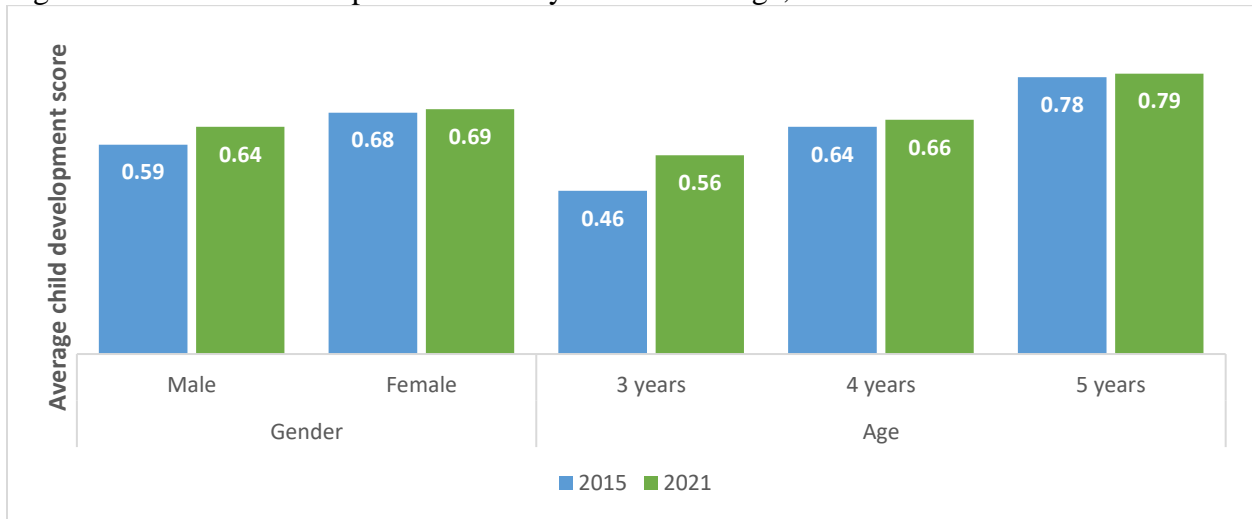


Figure 4.3 shows that there was limited variation in the average overall development score by island in 2021, with the exception of Niutao island (0.77 compared with the average for Tuvalu of 0.66). Niutao and Niulakita islands saw the largest increase in scores between 2015 and 2021. Given that the population size in Niulakita is very small (only four children aged 3-5 years in 2015 and 2021), results for Niulakita should be considered with caution. Average overall development scores fell on Nanumea, Nui and Vaitupu islands between 2015 and 2021; however, these changes were not significant (see Table A1.5).

Figure 4.3: Overall Development Scores by Island, 2015 and 2021

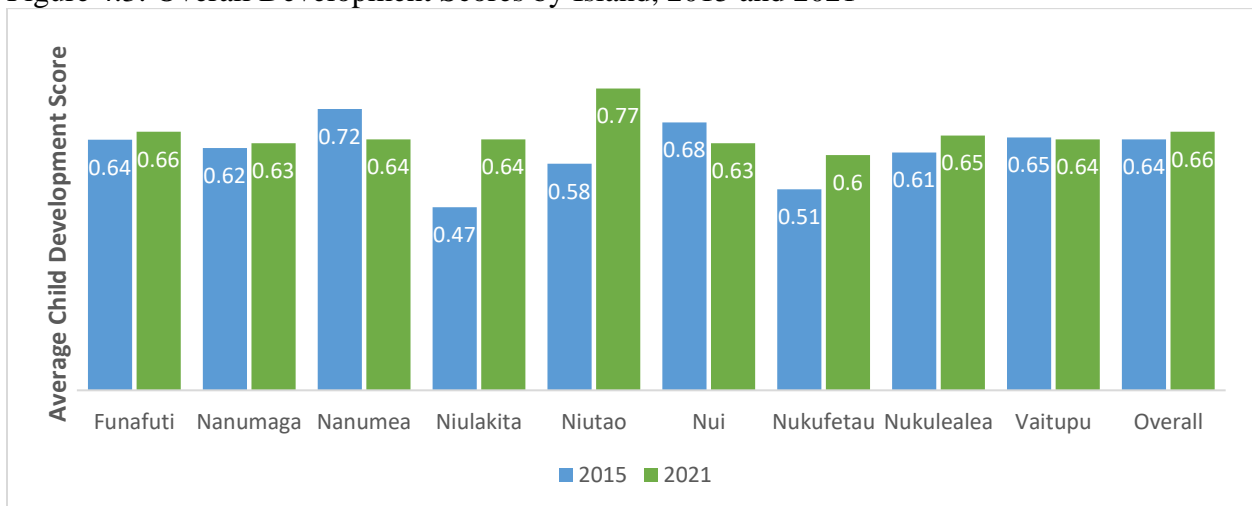
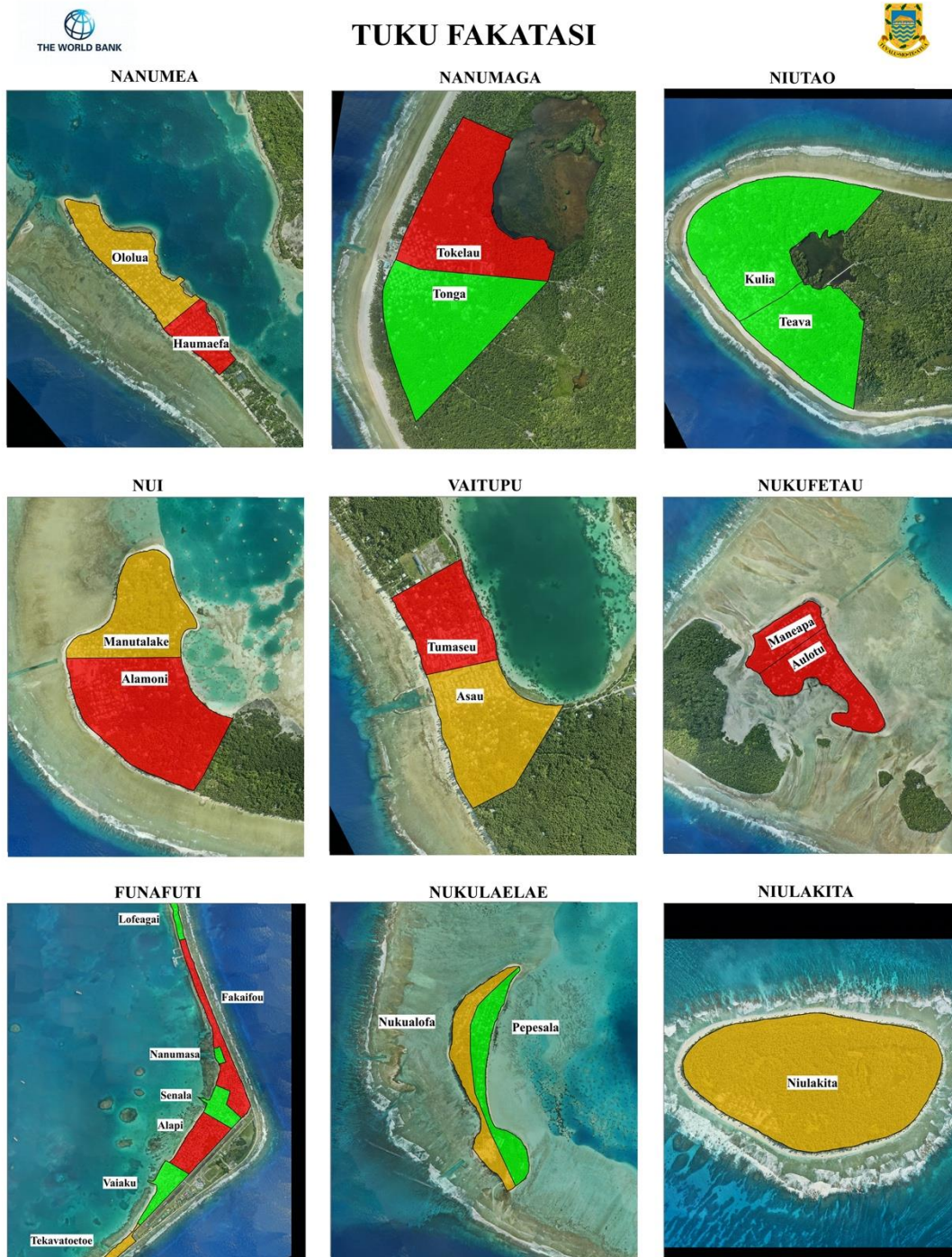


Figure 4.4 below represents average overall development score by village and island. Color-coding is based on comparative scores between villages and islands. The bottom third of villages/islands (average development scores = 0.5 – 0.62) have the poorest development and are colored red; the middle are colored yellow (average development scores = 0.621 – 0.64); and the top third performing villages are colored green (average development scores = 0.641 – 0.79).

Figure 4.4: Overall Development Scores by Island



## Village-level Results

The tables below provide village-level results across the different developmental domains. Categorization into poor, medium and good result is based on comparative scores between villages and islands. The bottom third of villages/islands that have the poorest score on a particular domain are categorized as poor; the middle third as medium; and the top third performing villages as good. Each village name is highlighted (following the map in Figure 3.4) based on its average overall development score. See Annex 2 for village-level scores and Annex 3 for village-level categorization of 2015 TuEHCI data.

Both villages on Niutao island (Kulia and Teava) perform among the top third across all developmental domains. On the other hand, villages on Nukufetau have among the lowest scores. There is considerable variation across developmental domain scores between the different villages on Funafuti, Nanumaga and Vaitupu.

Stunting prevalence is particularly alarming in Alamoni and Manutalake villages on Nui island, as well as in villages on Nanumea, Niulakita and Vaitupu. Stunting prevalence is zero among 3 to 5-year-olds on Nanumaga and Nukulaelae islands.

While formal literacy (reading and writing) scores are fairly low across the board, intensive support can be targeted to poor performing villages including Tokelau in Nanumaga, Aulotu and Maneapa in Nukufetau, and Niulakita.

These tables provide key insights for MEYS and MOHSWGA to provide targeted support to different villages and to inform best practices and knowledge-sharing between local government authorities (or kaupules).

## FUNAFUTI

Alapi		
Poor Result	Medium Result	Good Result
Verbal communication Approaches to learning Cultural knowledge	Physical Numeracy and concepts Formal literacy (reading) Formal literacy (writing) Social and emotional skills Stunting prevalence	Perseverance

Fakaifou		
Poor Result	Medium Result	Good Result
Physical Numeracy and concepts	Verbal communication Approaches to learning Formal literacy (reading) Formal literacy (writing) Cultural knowledge Social and emotional skills Perseverance Stunting prevalence	

Kavatoetoe		
Poor Result	Medium Result	Good Result
Physical Approaches to learning Cultural knowledge	Verbal communication Formal literacy (reading) Formal literacy (writing)	Numeracy and concepts Social and emotional skills Perseverance Stunting prevalence

Nanumasa		
Poor Result	Medium Result	Good Result
Perseverance Numeracy and concepts	Physical Social and emotional skills Approaches to learning Verbal communication Stunting prevalence	Formal literacy (reading) Formal literacy (writing) Cultural knowledge

Lofeagai		
Poor Result	Medium Result	Good Result
Approaches to learning	Formal literacy (writing) Stunting prevalence	Physical Verbal communication Numeracy and concepts Formal literacy (reading) Cultural knowledge Social and emotional skills Perseverance

Senala		
Poor Result	Medium Result	Good Result
	Physical Approaches to learning Cultural knowledge Stunting prevalence	Verbal communication Numeracy and concepts Formal literacy (reading) Formal literacy (writing) Social and emotional skills Perseverance

Vaiaku		
Poor Result	Medium Result	Good Result
Verbal communication Approaches to learning Cultural knowledge	Physical Formal literacy (reading) Social and emotional skills Perseverance	Numeracy and concepts Formal literacy (writing) Stunting prevalence

## NANUMEA, NANUMANGA, NIUTAO, NUI

Haumaefa (Nanumea)		
Poor Result	Medium Result	Good Result
Verbal communication	Approaches to learning	Physical
Formal literacy (writing)	Numeracy and concepts	
Cultural knowledge	Formal literacy (reading)	
Social and emotional skills	Perseverance	
Stunting prevalence		

Lolua (Nanumea)		
Poor Result	Medium Result	Good Result
Verbal communication	Approaches to learning	Physical
Formal literacy (writing)	Numeracy and concepts	Cultural knowledge
Perseverance	Formal literacy (reading)	
Stunting prevalence	Social and emotional skills	

Tokelau (Nanumanga)		
Poor Result	Medium Result	Good Result
Verbal communication	Physical	Stunting prevalence
Numeracy and concepts	Approaches to learning	
Formal literacy (reading)		
Formal literacy (writing)		
Cultural knowledge		
Social and emotional skills		
Perseverance		

Tonga (Nanumanga)		
Poor Result	Medium Result	Good Result
Numeracy and concepts	Social and emotional skills	Physical
	Perseverance	Verbal communication
		Approaches to learning
		Formal literacy (reading)
		Formal literacy (writing)
		Cultural knowledge
		Stunting prevalence

Alamoni (Nui)		
Poor Result	Medium Result	Good Result
Physical	Cultural knowledge	Approaches to learning
Verbal communication	Social and emotional skills	Formal literacy (reading)
Numeracy and concepts		
Formal literacy (writing)		
Perseverance		

Manutalake (Nui)		
Poor Result	Medium Result	Good Result
Verbal communication	Cultural knowledge	Physical
Numeracy and concepts		Approaches to learning
Formal literacy (writing)		Formal literacy (reading)
Perseverance		Social and emotional skills
Stunting prevalence		

**NIUTAO:** Both villages in Niutao (Kulia and Teava) had good results across *ALL* developmental domains



## VAITUPU, NUKUFETAU, NUKULAEAE, NIULAKITA

Asau (Vaitupu)		
Poor Result	Medium Result	Good Result
Formal literacy (reading)	Physical	Numeracy and concepts
Social and emotional skills	Verbal communication	Formal literacy (writing)
Stunting prevalence	Approaches to learning	Cultural knowledge
	Perseverance	

Tumaseu (Vaitupu)		
Poor Result	Medium Result	Good Result
Physical	Verbal communication	Perseverance
Approaches to learning	Formal literacy (writing)	
Numeracy and concepts	Cultural knowledge	
Formal literacy (reading)		
Social and emotional skills		
Stunting prevalence		

Aulota (Nukufetau)		
Poor Result	Medium Result	Good Result
Physical	Numeracy and concepts	Verbal communication
Formal literacy (reading)	Formal literacy (writing)	Approaches to learning
Cultural knowledge	Stunting prevalence	
Social and emotional skills		
Perseverance		

Maneapa (Nukufetau)		
Poor Result	Medium Result	Good Result
Physical	Stunting prevalence	Verbal communication
Formal literacy (reading)		Approaches to learning
Formal literacy (writing)		Numeracy and concepts
Cultural knowledge		Perseverance
Social and emotional skills		

Nukualofa (Nukulaelae)		
Poor Result	Medium Result	Good Result
Approaches to learning	Physical	Stunting prevalence
Social and emotional skills	Verbal communication	
	Numeracy and concepts	
	Formal literacy (reading)	
	Formal literacy (writing)	
	Cultural knowledge	
	Perseverance	

Pepesala (Nukulaelae)		
Poor Result	Medium Result	Good Result
Approaches to learning	Numeracy and concepts	Physical
Formal literacy (reading)	Cultural knowledge	Verbal communication
Perseverance		Formal literacy (writing)
		Social and emotional skills
		Stunting prevalence

Niulakita		
Poor Result	Medium Result	Good Result
Physical	Verbal communication	Approaches to learning
Formal literacy (reading)	Numeracy and concepts	Cultural knowledge
Formal literacy (writing)	Perseverance	Social and emotional skills
Stunting prevalence		

## Section 5: Interaction of Explanatory Factors and Child Developmental Outcomes

### 5.1 Preschool and Playgroup Participation

Figure 5.1.1 below demonstrates that children attending preschool have a higher overall development score than those not attending preschool; however, this difference is not significant. They also score higher across some domains like verbal communication, approaches to learning, reading, and social and emotional skills. However, the difference is only significant for approaches to learning (see Table A1.6). These results should be interpreted with some caution as the sample of children not attending preschool is very small (N=27 or 3 percent of the sample).

Figure 5.1.1: Child Development Scores by Preschool Attendance

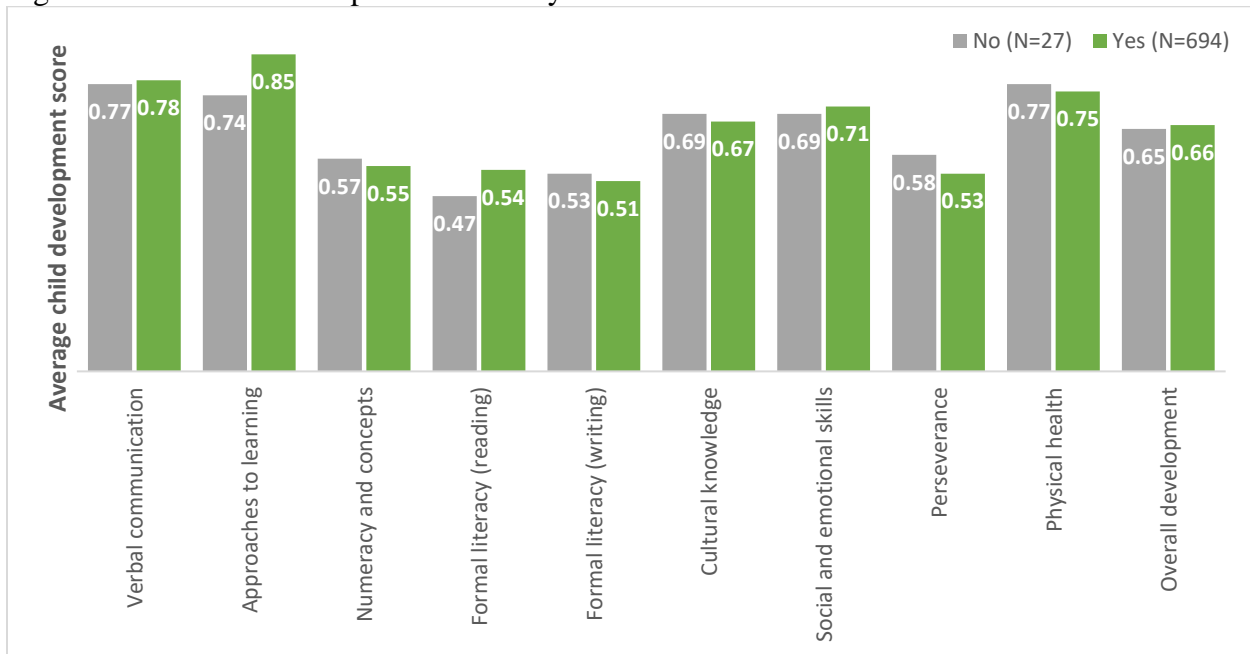
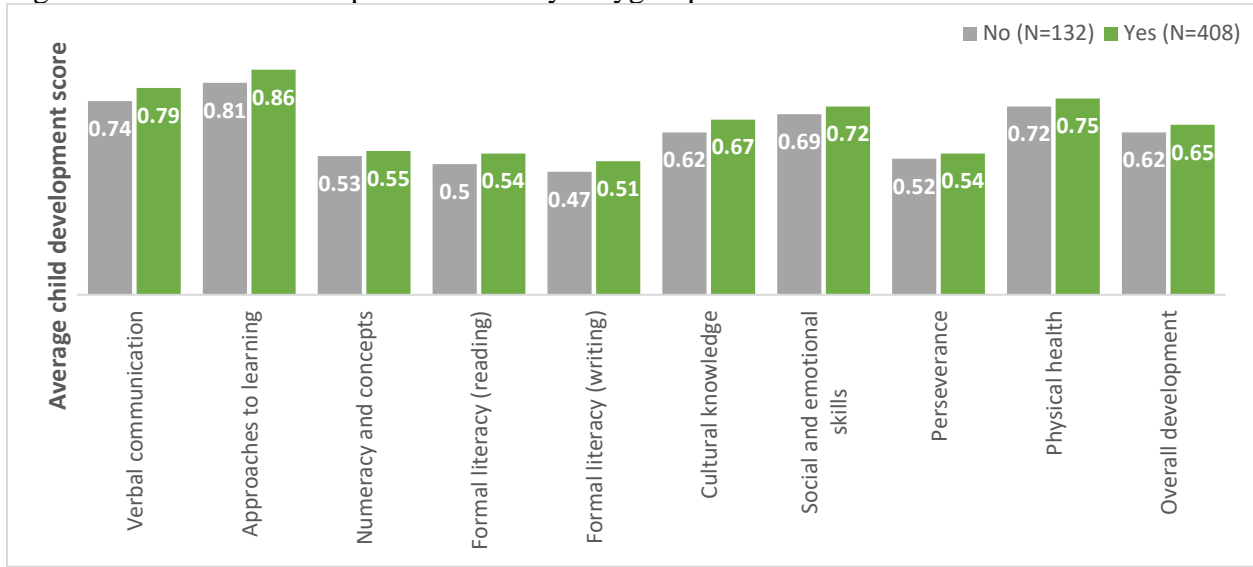


Figure 5.1.2 demonstrates that children attending playgroup sessions have higher overall development scores as well as higher scores across all developmental domains than children not attending playgroup sessions. However, these differences are only significant for the verbal communication and approaches to learning domains (see Table A1.7). Attending both preschool and playgroup is positively, although not significantly, correlated with overall development scores (see Table A1.8).

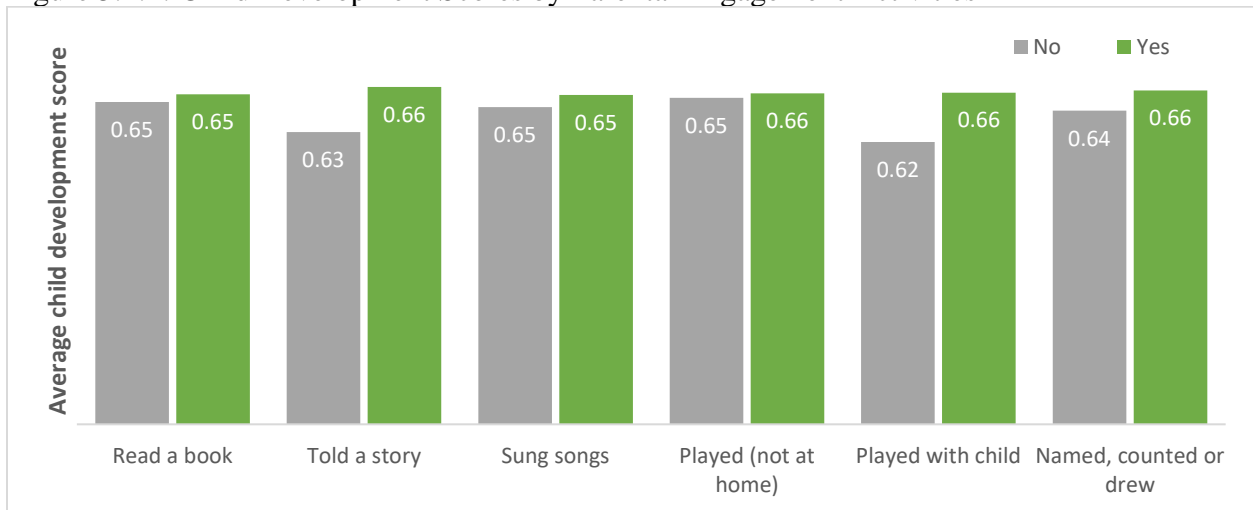
Figure 5.1.2: Child Development Scores by Playgroup Attendance



## 5.2 Home Stimulation

As demonstrated in Figure 5.2.1 below, each of the six parent-child engagement activities had a positive relationship with children’s overall development, although only the correlation between singing songs and overall development was significant. The children of parents who engaged in home stimulation activities with them were developing better than children whose parents did not read to them, tell stories, sing, play, draw and so on. Telling stories and playing had significant positive correlations with the verbal communication domain (see Table A1.9). These results are consistent with those observed in 2015.

Figure 5.2.1: Child Development Scores by Parental Engagement Activities

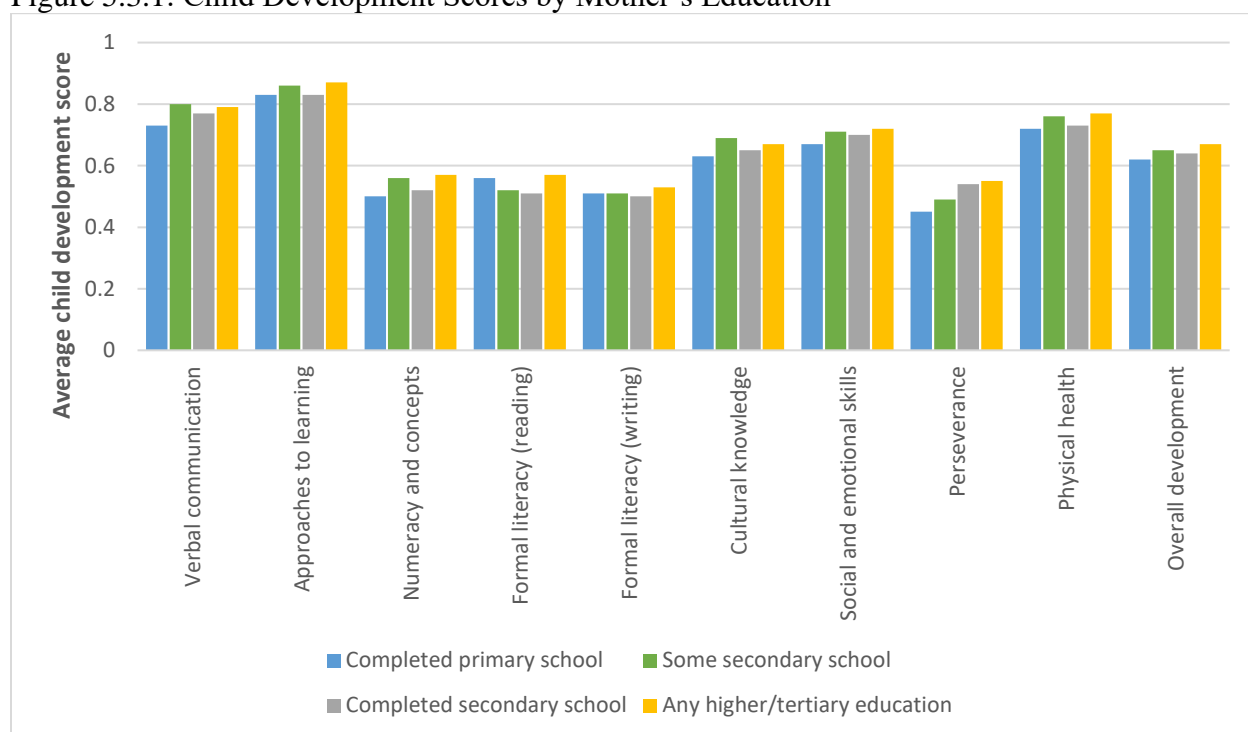




### 5.3 Mother’s Education

In 2015, data on mother’s education was only available for 7 percent of the sample, which did not allow for analysis on variations in child development scores based on mother’s education attainment. While data reporting improved in 2021, with mother’s education being reported for 88 percent of the sample, no significant correlation was observed with overall development scores. A significant positive correlation was observed between mother’s education and the perseverance domain (see Table A1.10). Figure 4.3.1 shows that children whose mothers have some secondary education or higher perform better across all developmental domains than those children whose mothers have primary education or lower, although these differences are only significant for the perseverance domain.

Figure 5.3.1: Child Development Scores by Mother’s Education



### 5.4 Child Health and Nutrition

Table 5.4 shows the pairwise correlations between nutrition status and overall development. As expected, being stunted is negatively correlated with overall development. Overweight prevalence is positively correlated with overall development and all other developmental domains (see Table A1.11). While not a positive nutrition status, being overweight in Tuvalu may act as a proxy for socioeconomic status with wealthier households having better access to food.

**Table 5.4.1: Pairwise Correlation between Nutrition Status and Overall Development Scores, 2021**

Variables	(1)	(2)	(3)	(4)	(5)
(1) Stunting	1.000				
(2) Wasting	0.004	1.000			
(3) Underweight	0.259*	0.492*	1.000		
(4) Overweight	0.055	-0.215*	-0.115*	1.000	
(5) Overall Development	-0.141*	-0.020	-0.023	0.272*	1.000

\* shows significance at the .05 level

## Section 6: Key Findings and Recommendations

This report presents key findings from the second iteration of the EHCI in Tuvalu and demonstrates the importance of periodically monitoring child health, development and early skills to assess the effectiveness of ECD investments and programs, and for data-driven targeting of support to areas lagging in performance.

The average overall development index increased marginally from 0.64 in 2015 to 0.66 in 2021. This marginal increase is likely explained by inadequate investments in the ECCE sub-sector between 2015, when the EHCI was administered under the Pacific Early Age Readiness and Learning (PEARL) program, and 2021 when TuLEP funding became available. Interventions introduced under PEARL were stalled until 2021 due to limited funding, highlighting the importance of government leadership and ownership for the sustainability of donor-financed programs.

The greatest improvement in the average overall development index was seen among children aged 3 years (0.46 in 2015 to 0.56 in 2021; increase significant at the 99 percent confidence level). Niutao island had a significantly higher overall development score at 0.77 compared to the national average and also showed the greatest improvement between 2015 and 2021.

Children scored the highest on approaches to learning, verbal communication and physical health, but the lowest on perseverance and literacy and numeracy. MEYS should implement interventions to strengthen teacher capacity in developing early literacy (reading and writing) and numeracy skills.

Significant progress has been made in reducing stunting prevalence between 2015 and 2021. These results are consistent with data from the 2020 MICS conducted by UNICEF. This is important given that overall development scores are significantly negatively correlated with stunting prevalence. Stunting fell from 36.7 percent in 2015 to 11.5 percent in 2021. Stunting prevalence is zero among 3 to 5-year-olds on Nanumaga and Nukulaelae islands. However, some communities, including those in Nui, Nanumea, Niulakita and Vaitupu, have above-average stunting rates and would benefit from targeted interventions.

Stunting was higher among children aged 3 to 4 years than among children aged 4 to 5 years. This may be as a result of persisting effects of malnutrition among children aged 2 years and under, with 17 percent having mild to severe undernutrition and 46.5 percent classified as obese (World Bank, 2022). Nutrition interventions are required from pregnancy to the early years. The playgroups supported under TuLEP provide a good opportunity for community outreach. The TuEHCI results did not show significant differences in stunting rates between boys and girls.

Preschool enrollment rates increased significantly from 74 percent in 2015 to 83 percent in 2021. This increase is largely driven by the higher share of 3-year-old children enrolling in preschool (86 percent in 2021 compared by 77 percent in 2015). The project also supports the resourcing of ECCE centers with playgroup kits and communication materials. ECCE teachers should encourage

parents to enroll all children aged 5 years and younger in playgroups and regularly monitor attendance.

EHCI results show that the children of parents who engaged in home stimulation activities were developing better than children whose parents did not read to them, tell stories, sing, play, draw and so on. The share of parents reporting that they engaged in parent-child activities increased from 63 percent in 2015 to 74 percent in 2021. While this represents a significant increase, over a quarter of children do not have sufficient opportunities for home stimulation. Under TuLEP, the ECCE Unit is developing activity sheets and baby cards that parents can borrow from ECCE centers to increase home stimulation. Strengthened messaging around the importance of play and child-engagement activities, through playgroups and at home, are critical to child development.

The EHCI provides rich census-level data on ECD outcomes and critical inputs like home stimulation, preschool and playgroup attendance and so on, that drive these results. Disseminating these results to communities and encouraging knowledge sharing between kaupules is important to creating ownership and agency among community leaders and caregivers.

***Strengthening data collection, quality, and analysis.*** Under the TuLEP, MEYS is also collecting data on the quality of teaching practices at ECCE centers using the Tuvalu Quality Early Learning (TuQEL) tool, which is adapted from the World Bank TEACH instrument and the Measuring Early Learning Environments (MELE) tool. Linking EHCI results to TuQEL results will provide insights into pedagogical practices that impact ECD outcomes and inform targeted professional development for ECCE teachers. Further, MEYS intends to administer the EGRA in 2023 and 2025 covering children in grades 1 to 3. These assessments provide an opportunity to collect longitudinal data on children captured through the EHCI sample over the next five years. The EHCI can be further strengthened by adding questions on other household characteristics beyond parental education attainment. Finally, enumerators can be trained to verify that all fields are filled before accepting forms from teachers and caregivers.

Table 6.1: Key Recommendations

Key Actors	Recommendations
Government	<ul style="list-style-type: none"> <li>• Strengthen teacher capacity in developing early literacy (reading and writing) and numeracy skills</li> <li>• Adequately resource ECCE centers with playgroup and preschool kits and age-appropriate reading materials</li> <li>• Encourage knowledge-sharing between different kaupules to identify bottlenecks and best practices</li> <li>• Strengthen engagement with MOHSWGA to ensure that nutrition interventions are implemented from pregnancy to the early years</li> <li>• Provide targeted support to reduce stunting in areas that are lagging behind</li> <li>• Strengthen NACE capacity to coordinate and monitor ECD activities across sectors</li> <li>• Establish sustainable financing mechanisms to mainstream effective donor-funded ECD interventions</li> <li>• Periodically monitor ECD outcomes</li> </ul>
ECCE Centers	<ul style="list-style-type: none"> <li>• Strengthen numeracy and literacy through play</li> <li>• Periodically measure children’s numeracy and literacy skills and provide remedial support where necessary</li> <li>• Provide data-driven targeted support to ECCE teachers to strengthen service delivery across different developmental domains</li> <li>• Conduct regular monitoring of preschool and playgroup attendance</li> <li>• Provide activity sheets and other resources to parents to encourage home stimulation in the early years</li> <li>• Liaise with public health officials and community nurse to increase community awareness and monitoring of early nutrition and developmental milestones</li> </ul>
Communities	<ul style="list-style-type: none"> <li>• Increase enrollment of children in preschool and playgroups</li> <li>• Increase parental participation in playgroups</li> <li>• Increase parental engagement (sing song, tell stories, read, play etc.) with the child</li> <li>• Promote culture of reading and playing with your child at home</li> <li>• Practice early initiation of breastfeeding</li> <li>• Introduce dietary diversity for young children</li> <li>• Reduce consumption of sugary drinks and other unhealthy food products</li> </ul>

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## Annex 1: Results of Hypotheses Testing

**Table A1.1: Preschool Attendance by Gender and Age, 2015 and 2021**

		2015	2021	Diff.	SE
Gender	Male	76%	84%	-0.0719*	0.0300
	Female	72%	82%	-0.105**	0.0326
Age	3 years	77%	86%	-0.0891*	0.0374
	4 years	80%	81%	-0.0104	0.0377
	5 years	84%	82%	0.0234	0.0379
Total		74%	83%	-0.0907***	0.0220

**Table A1.2: Home Stimulation Activities, 2015 and 2021**

	2015	2021	Diff.	SE
Read a book	54.08%	68.86%	-0.148***	0.0262
Told a story	61.52%	72.81%	-0.113***	0.0254
Sung songs	64.43%	82.87%	-0.184***	0.0231
Played (not at home)	61.71%	73.29%	-0.116***	0.0253
Played with child	65.52%	82.16%	-0.166***	0.0232
Named, counted or drew	56.44%	69.22%	-0.128***	0.0261



Table A1.3: Child Development Scores Across Domains, 2015 and 2021

Domain	2015		2021		Diff.	SE
	N	Mean	N	Mean		
Verbal communication	551	0.75	835	0.79	-0.0368**	0.0138
Approaches to learning	550	0.83	835	0.85	-0.0198	0.0135
Numeracy and concepts	550	0.54	833	0.56	-0.0113	0.0174
Formal literacy (reading)	549	0.50	834	0.55	-0.0427*	0.0183
Formal literacy (writing)	550	0.55	835	0.52	0.0341	0.0201
Cultural knowledge	551	0.67	835	0.67	-0.00548	0.0163
Social and emotional skills	551	0.70	834	0.71	-0.0131	0.0131
Perseverance	550	0.48	835	0.53	-0.0536***	0.0161
Physical health	551	0.70	835	0.75	-0.0575***	0.0148
Overall development	551	0.64	835	0.66	-0.0229	0.0120

Table A1.4: Overall Development Score by Gender and Age, 2015 and 2021

		2015	2021	Diff.	SE
Gender	Male	0.59	0.64	-0.0423*	0.0169
	Female	0.68	0.69	-0.0084	0.0165
Age	3 years	0.46	0.56	-0.107***	0.0211
	4 years	0.64	0.66	-0.0274	0.0188
	5 years	0.78	0.79	-0.0017	0.0161

**Table A1.5: Overall Development by Island, 2015 and 2021**

Island	2015	2021	Diff	SE
Funafuti	0.64	0.66	-0.0172	0.0175
Nanumanga	0.62	0.63	-0.0116	0.0545
Nanumea	0.72	0.64	0.0751	0.0447
Niulakita	0.47	0.64	-0.176	0.1652
Niutao	0.58	0.77	-0.189***	0.0453
Nui	0.68	0.63	0.0513	0.0405
Nukufetau	0.51	0.60	-0.088	0.0467
Nukulaelae	0.61	0.65	-0.0444	0.0457
Vaitupu	0.65	0.64	0.00389	0.0382

**Table A1.6: Developmental Scores by Preschool Attendance, 2021**

	No (N=27)	Yes (N=694)	Diff.	SE
Verbal communication	0.77	0.78	-0.0122	0.0502
Approaches to learning	0.74	0.85	-0.113*	0.0476
Numeracy and concepts	0.57	0.55	0.0254	0.0616
Formal literacy (reading)	0.47	0.54	-0.0727	0.0637
Formal literacy (writing)	0.53	0.51	0.0207	0.0716
Cultural knowledge	0.69	0.67	0.0231	0.0594
Social and emotional skills	0.69	0.71	-0.0185	0.0467
Perseverance	0.58	0.53	0.0532	0.0562
Physical health	0.77	0.75	0.02	0.0502
Overall development	0.65	0.66	-0.00821	0.0419

**Table A1.7: Developmental Scores by Playgroup Attendance, 2021**

	No (N=132)	Yes (N=408)	Diff.	SE
Verbal communication	0.74	0.79	-0.0519*	0.0260
Approaches to learning	0.81	0.86	-0.0512*	0.0247
Numeracy and concepts	0.53	0.55	-0.0289	0.0317
Formal literacy (reading)	0.50	0.54	-0.039	0.0324
Formal literacy (writing)	0.47	0.51	-0.0455	0.0359
Cultural knowledge	0.62	0.67	-0.0516	0.0300
Social and emotional skills	0.69	0.72	-0.0294	0.0240
Perseverance	0.52	0.54	-0.0208	0.0291
Physical health	0.72	0.75	-0.0313	0.0253
Overall development	0.62	0.66	-0.0391	0.0212

**Table A1.8: Correlation between Overall Developmental Score and Preschool or Playgroup Participation, 2021**

Variables	(1)	(2)	(3)	(4)
(1) Preschool	1.000			
(2) Playgroup	0.337*	1.000		
(3) Preschool and Playgroup	0.367*	0.914*	1.000	
(4) Overall development	0.007	0.079*	0.066	1.000

\* shows significance at the 0.1 level

**Table A1.9: Correlation between Developmental Scores and Home Stimulation, 2021**

Variables	(1) Read a book	(2) Told a story	(3) Sung songs	(4) Played (not at home)	(5) Played with child	(6) Named, counted or drew
Verbal communication	0.037	0.064*	0.037	-0.023	0.064*	0.029
Approaches to learning	0.036	0.02	0.006	0.03	0.04	0.045
Numeracy and concepts	0.002	0.068*	0.046	0.002	0.025	0.044
Formal literacy (reading)	-0.004	0.005	0.008	0.006	0.015	-0.028
Formal literacy (writing)	-0.006	0.029	0.026	0.02	0.037	0.011
Cultural knowledge	0.013	0.089*	0.003	-0.01	0.042	0.032
Social and emotional skills	0.021	0.049	-0.022	-0.009	0.026	0.015
Perseverance	-0.002	0.04	-0.015	0.027	0.06	0.055
Physical health	-0.008	0.055	-0.035	-0.008	-0.018	0.005
Overall development	0.011	0.062*	0.011	0.006	0.044	0.03

\* shows significance at the 0.1 level

**Table A1.10: Correlation between Developmental Scores and Mother's Education, 2021**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Mothers Education	1.000										
(2) Physical health	0.044	1.000									
(3) Verbal communication	0.039	0.495*	1.000								
(4) Approaches to learning	0.036	0.381*	0.363*	1.000							
(5) Numeracy and concepts	0.048	0.587*	0.588*	0.419*	1.000						
(6) Formal literacy (reading)	0.044	0.495*	0.533*	0.381*	0.702*	1.000					
(7) Formal literacy (writing)	0.025	0.482*	0.523*	0.301*	0.676*	0.711*	1.000				
(8) Cultural knowledge	0.016	0.613*	0.649*	0.479*	0.602*	0.563*	0.528*	1.000			
(9) Social and emotional skills	0.042	0.540*	0.542*	0.481*	0.506*	0.432*	0.433*	0.730*	1.000		
(10) Perseverance	0.108*	0.326*	0.344*	0.231*	0.407*	0.376*	0.353*	0.393*	0.466*	1.000	
(11) Overall development	0.059	0.730*	0.750*	0.584*	0.837*	0.801*	0.781*	0.828*	0.750*	0.581*	1.000

\* shows significance at the 0.01 level

Table A1.11: Correlation between Developmental Outcomes and Nutrition Status, 2021

Variables	Stunting	Wasting	Underweight	Overweight
Physical	-0.063	0.013	0.041	0.194*
Verbal	-0.149*	-0.023	-0.040	0.174*
Approaches	-0.105*	0.024	0.046	0.075*
Numeracy and Concepts	-0.111*	-0.031	-0.034	0.307*
Reading	-0.115*	-0.052	-0.064	0.211*
Writing	-0.109*	-0.116*	-0.084*	0.275*
Cultural and Spiritual	-0.105*	0.053	0.027	0.224*
Social and Emotional	-0.078*	0.016	0.015	0.167*
Perseverance	-0.110*	0.029	-0.020	0.127*

## Annex 2: Developmental Domain Scores by Village

The table below provides village-level results across the different developmental domains. The bottom third of villages/islands that have the poorest score on a particular domain are categorized as poor (highlighted in red); the middle third as medium (highlighted in yellow); and the top third performing villages as good (highlighted in green).

Island	Village	Physical	Verbal comm.	Approaches to learning	Numeracy and concepts	Formal literacy (reading)	Formal literacy (writing)	Cultural knowledge	Social and emotional skills	Perseverance	Overall development	Stunting prevalence	Number of children
Funafuti	Alapi	0.74	0.75	0.83	0.52	0.52	0.50	0.57	0.70	0.57	0.63	4.35	69
Funafuti	Fakaifou	0.70	0.78	0.84	0.50	0.54	0.52	0.66	0.69	0.52	0.64	12.73	111
Funafuti	Nanumasa	0.72	0.79	0.84	0.48	0.59	0.58	0.71	0.72	0.39	0.65	11.11	9
Funafuti	Kavatoetoe	0.68	0.79	0.83	0.59	0.53	0.52	0.61	0.75	0.57	0.65	3.33	60
Funafuti	Lofeagai	0.84	0.83	0.78	0.59	0.57	0.48	0.72	0.74	0.57	0.68	15.66	85
Funafuti	Vaiaku	0.75	0.71	0.81	0.57	0.57	0.58	0.62	0.72	0.56	0.65	3.28	63
Funafuti	Senala	0.76	0.81	0.86	0.61	0.59	0.57	0.68	0.73	0.56	0.69	6.85	73
Nanumaga	Tokelau	0.73	0.75	0.89	0.43	0.50	0.41	0.62	0.57	0.39	0.59	0.00	26
Nanumaga	Tonga	0.86	0.84	0.96	0.46	0.57	0.56	0.78	0.69	0.53	0.70	0.00	16
Nanumea	Lolua	0.82	0.76	0.85	0.53	0.55	0.45	0.68	0.69	0.47	0.64	20.00	31
Nanumea	Haumaefa	0.81	0.72	0.86	0.56	0.52	0.43	0.64	0.66	0.53	0.64	26.67	16
Niulakita	Niulakita	0.69	0.79	1.00	0.55	0.50	0.25	0.69	0.85	0.48	0.64	25.00	4
Niutao	Kulia	0.84	0.87	0.93	0.69	0.66	0.59	0.86	0.80	0.58	0.76	0.00	51
Niutao	Teava	0.89	0.90	0.96	0.77	0.61	0.57	0.90	0.84	0.57	0.78	4.17	27
Nui	Alamoni	0.71	0.70	0.94	0.45	0.63	0.43	0.65	0.70	0.43	0.63	40.74	27
Nui	Manutalake	0.77	0.65	0.90	0.48	0.65	0.44	0.65	0.73	0.47	0.64	17.39	23
Nukufetau	Aulotu	0.60	0.81	0.92	0.52	0.38	0.45	0.63	0.58	0.40	0.59	6.67	15
Nukufetau	Maneapa	0.61	0.85	0.97	0.59	0.33	0.38	0.58	0.61	0.56	0.61	12.50	24
Nukulaelae	Nukualofa	0.76	0.76	0.82	0.53	0.55	0.52	0.66	0.67	0.53	0.65	0.00	17
Nukulaelae	Pepesala	0.84	0.86	0.78	0.55	0.50	0.63	0.66	0.74	0.41	0.66	0.00	8
Vaitupu	Tumaseu	0.69	0.79	0.76	0.47	0.44	0.56	0.65	0.69	0.57	0.62	17.95	40
Vaitupu	Asau	0.77	0.80	0.87	0.57	0.45	0.59	0.68	0.66	0.54	0.66	15.79	40

Annex 3: Village-Level Results (TuEHCI 2015)

## FUNAFUTI

Alapi		
Poor Result	Medium Result	Good Result
Physical Formal literacy (reading)	Verbal communication Numeracy and concepts Formal literacy (writing) Social and emotional skills Perseverance Stunting prevalence	Approaches to learning

Fakaifou		
Poor Result	Medium Result	Good Result
	Approaches to learning Cultural knowledge Stunting prevalence	Physical Verbal communication Numeracy and concepts Formal literacy (reading) Formal literacy (writing) Social and emotional skills Perseverance

Kavatoetoe		
Poor Result	Medium Result	Good Result
Physical Numeracy and concepts Social and emotional skills	Verbal communication Approaches to learning Formal literacy (reading) Formal literacy (writing) Cultural knowledge Perseverance Stunting prevalence	

Lofeagai		
Poor Result	Medium Result	Good Result
Approaches to learning Cultural knowledge Social and emotional skills Perseverance Stunting prevalence	Physical Numeracy and concepts Formal literacy (writing)	Verbal communication Formal literacy (reading)

Senala		
Poor	Medium	Good
Physical Numeracy and concepts Cultural knowledge Perseverance	Verbal communication Formal literacy (reading) Stunting prevalence	Approaches to learning Formal literacy (writing)

Vaiaku		
Poor Result	Medium Result	Good Result
Physical Verbal communication Approaches to learning Formal literacy (reading)	Numeracy and concepts Cultural knowledge Social and emotional skills Stunting prevalence	Formal literacy (writing) Perseverance

Note: Data for Nanumasa village was not collected in 2015.

## NANUMEA, NANUMANGA, NIUTAO, NUI

Haumaefa (Nanumea)		
Poor Result	Medium Result	Good Result
Verbal communication	Approaches to learning Stunting prevalence	Physical Numeracy and concepts Formal literacy (reading) Formal literacy (writing) Cultural knowledge Social and emotional skills Perseverance

Tokelau (Nanumanga)		
Poor Result	Medium Result	Good Result
Physical Approaches to learning Formal literacy (writing) Stunting prevalence	Verbal communication Formal literacy (reading)	Numeracy and concepts Cultural knowledge Social and emotional skills Perseverance

Alamoni (Nui)		
Poor Result	Medium Result	Good Result
Approaches to learning		Physical Verbal communication Numeracy and concepts Formal literacy (reading) Formal literacy (writing) Cultural knowledge Social and emotional skills Perseverance Stunting prevalence

Kulia (Niutao)*		
Poor Result	Medium Result	Good Result
Verbal communication Formal literacy (writing)	Numeracy and concepts Formal literacy (reading) Perseverance	Physical Approaches to learning Cultural knowledge Social and emotional skills

Lolua (Nanumea)		
Poor Result	Medium Result	Good Result
Verbal communication Approaches to learning	Physical Cultural knowledge Stunting prevalence	Numeracy and concepts Formal literacy (reading) Formal literacy (writing) Social and emotional skills Perseverance

Tonga (Nanumanga)		
Poor Result	Medium Result	Good Result
Approaches to learning Formal literacy (writing) Stunting prevalence	Physical Verbal communication	Numeracy and concepts Formal literacy (reading) Cultural knowledge Social and emotional skills Perseverance

Manutalake (Nui)		
Poor Result	Medium Result	Good Result
Numeracy and concepts Social and emotional skills	Approaches to learning Formal literacy (writing) Cultural knowledge Perseverance	Physical Verbal communication Formal literacy (reading) Stunting prevalence

Teava (Niutao)*		
Poor Result	Medium Result	Good Result
Formal literacy (writing)	Numeracy and concepts Perseverance	Physical Verbal communication Approaches to learning Formal literacy (reading) Cultural knowledge Social and emotional skills

\* Note: Data on stunting was not available for Niutao villages in 2015.



## VAITUPU, NUKUFETAU, NUKULAEAE, NIULAKITA

Asau (Vaitupu)			Tumaseu (Vaitupu)		
Poor Result	Medium Result	Good Result	Poor Result	Medium Result	Good Result
Numeracy and concepts Perseverance Stunting prevalence	Physical Verbal communication Approaches to learning Formal literacy (reading) Formal literacy (writing) Cultural knowledge Social and emotional skills		Stunting prevalence	Physical Social and emotional skills Perseverance	Verbal communication Approaches to learning Numeracy and concepts Formal literacy (reading) Formal literacy (writing) Cultural knowledge
Aulota (Nukufetau)			Maneapa (Nukufetau)		
Poor Result	Medium Result	Good Result	Poor Result	Medium Result	Good Result
Physical Verbal communication Formal literacy (reading) Formal literacy (writing) Cultural knowledge Social and emotional skills Perseverance Stunting prevalence	Approaches to learning Numeracy and concepts		Physical Verbal communication Numeracy and concepts Formal literacy (reading) Formal literacy (writing) Cultural knowledge Social and emotional skills Perseverance Stunting prevalence	Approaches to learning	
Nukualofa (Nukulaelae)			Pepesala (Nukulaelae)		
Poor Result	Medium Result	Good Result	Poor Result	Medium Result	Good Result
Social and emotional skills Perseverance	Formal literacy (reading) Formal literacy (writing)	Physical Verbal communication Approaches to learning Numeracy and concepts Cultural knowledge Stunting prevalence	Formal literacy (reading) Formal literacy (writing) Perseverance	Physical Numeracy and concepts Cultural knowledge Social and emotional skills	Verbal communication Approaches to learning Stunting prevalence
Laeva* (Nukulaelae)			Niulakita		
Poor Result	Medium Result	Good Result	Poor Result	Medium Result	Good Result
Numeracy and concepts Formal literacy (reading) Cultural knowledge	Physical Verbal communication Social and emotional skills	Approaches to learning Formal literacy (writing) Perseverance Stunting prevalence	Verbal communication Approaches to learning Numeracy and concepts Formal literacy (reading) Cultural knowledge Social and emotional skills	Formal literacy (writing) Perseverance	Physical Stunting prevalence

\* Note: Data for Laeva village in Nukulaelae was divided between Nukualofa and Pepesala in 2021 and cannot be compared with data from 2015.

