



Proposal for the development of a multi-purpose kindergarten and evacuation centre at Dreketi Settlement, Ra Province, Viti Levu, Fiji.

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Executive Summary

The following proposal is for the development of a community kindergarten and evacuation centre within Dreketi Settlement in the Ra province of Fiji's main island – Viti Levu. The proposal was developed by Laidlaw Scholars in partnership with villagers living at Dreketi settlement, who have already begun efforts to see the project to fruition.

The development of a kindergarten and evacuation centre is timely and needed – both in the face of accelerated climate change and to ensure the provision of high quality educational services to children of a community which is currently facing barriers in accessing education for a multitude of reasons including, but not limited to, weather, geographic proximity, financial constraints and health and safety concerns.

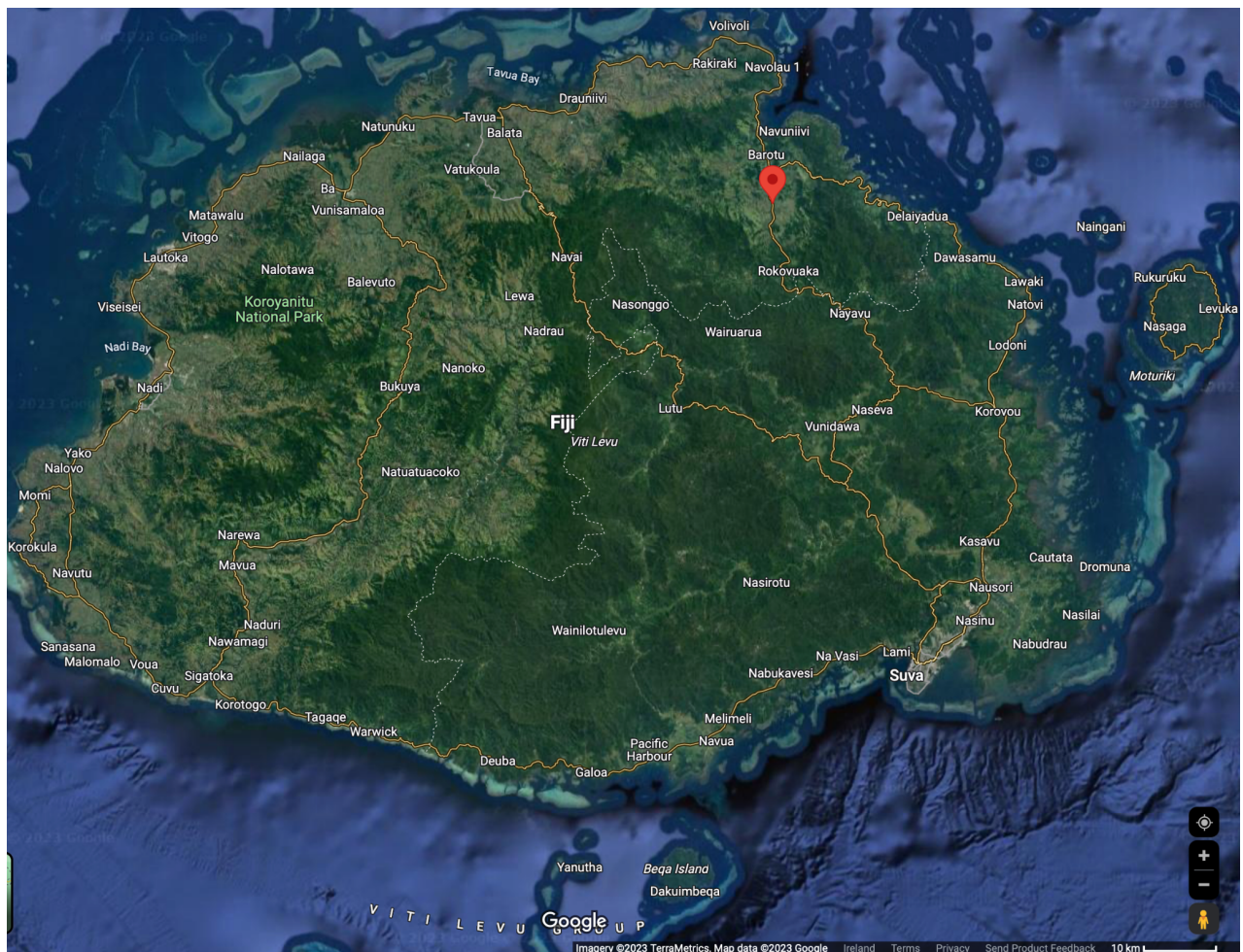
This proposal outlines the current situation within Dreketi, providing a useful analysis of population demographics, climate and ecology and the provision of education in the context of existing national development policy. A proposal is outlined for the building of a multi-purpose evacuation centre and kindergarten, with consideration given to the financial costs and funding models for the project, the structural design and safety standards of the building and the ethical considerations. A projected timeline to completion is also offered.

The Laidlaw Foundation have been identified as ideal potential project partners in the development of the build, with the authors hoping to foster a mutually beneficial partnership between the foundation and the people of Dreketi settlement, in order to see the project to completion and to work in line with the Laidlaw foundation's mission statement in transforming lives through the provision of educational services.

Introduction

Dreketi Settlement (herein “Dreketi”), is a settlement located on Viti Levu island, the largest island in Fiji. Dreketi is located in the Nalawa Tikina (District) of the northern province of Ra, and is accessible along the King’s Road, the primary road along the island’s east coast.

Dreketi comprises the settlements of Vunimaqo and Waisava, and takes its name from the road upon which both settlements are located – Dreketi Road.



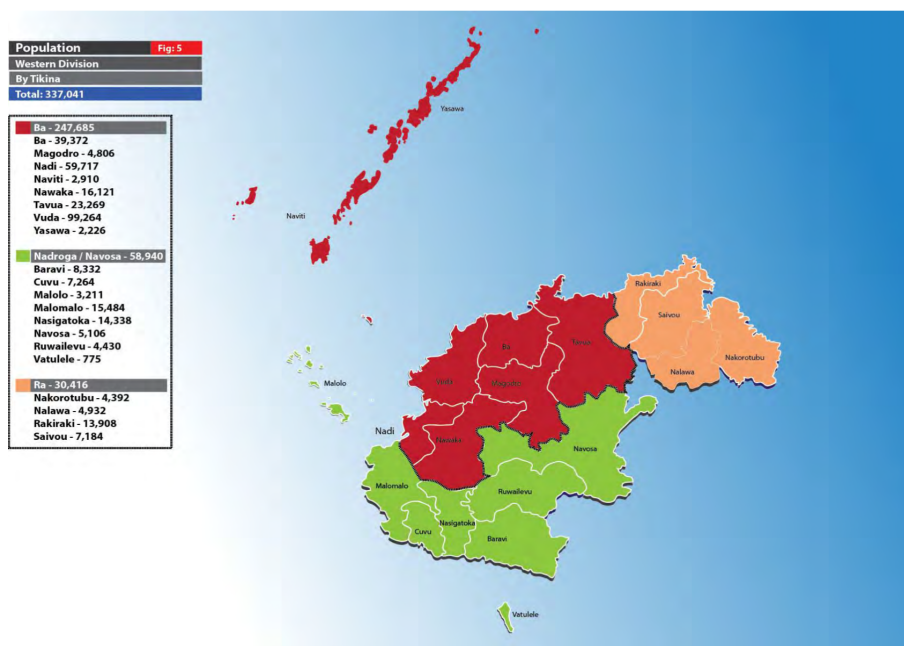
Map of Viti Levu

Viti Levu is the largest island in the Republic of Fiji. Dreketi Settlement, in the northern province of Ra, is highlighted by the red pin.

Image: Google Maps.

Population and Demography

2017



The last Fiji National Census took place in 2017, a year after Hurricane Winston. Here the population of Dreketi Settlement was 76, with 28 residents in Vunimaqo and 48 residents in Waisava.

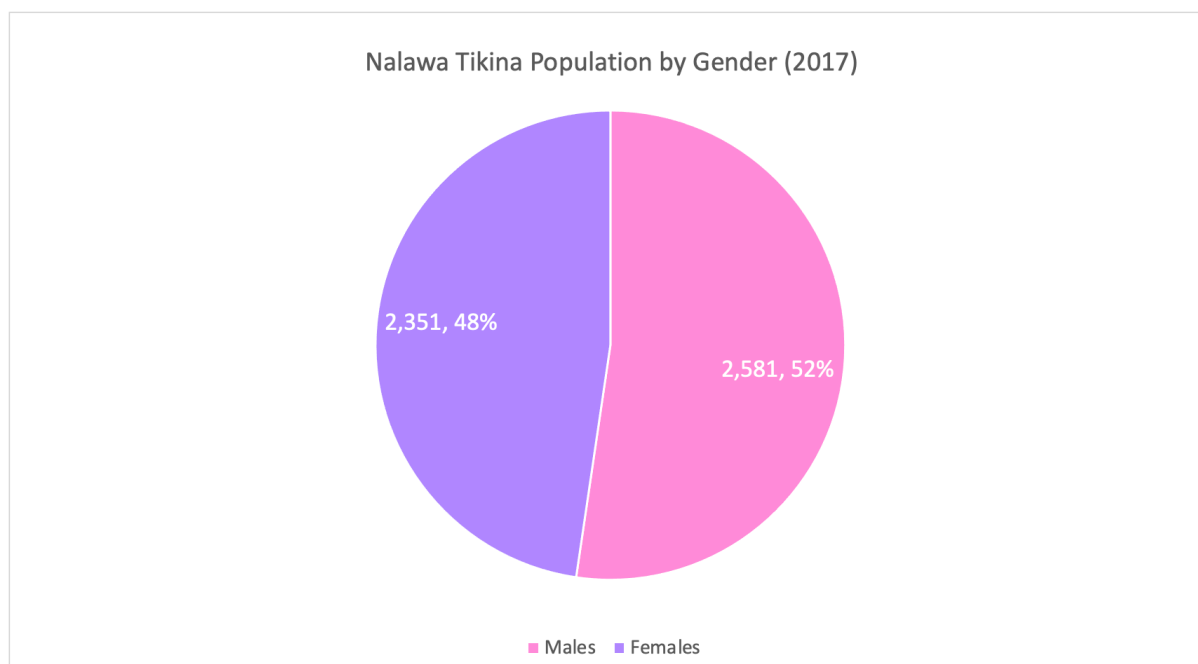
This population in **2017** was broken down as follows:

Localities	Total			0-14			15-24			25-64			65+		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female

Dreketi Vunimaqo Settlement	28	17	11	11	7	4	3	2	1	14	8	6	0	0	0
Dreketi Waisava Settlement	48	21	27	24	9	15	5	2	3	18	9	9	1	1	0

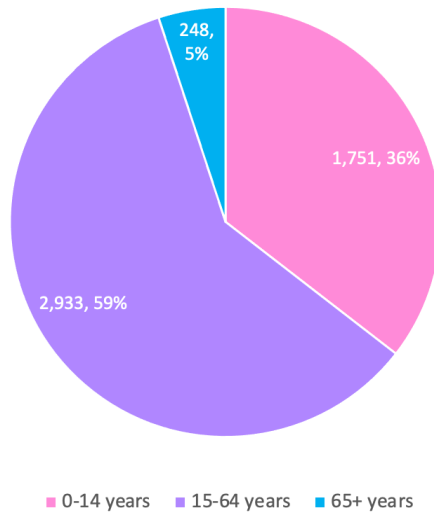
As seen in the table above, there is a very young population in this settlement, with 35 (46%) under the age of 14 and 43 (57%) under the age of 24. By linear interpolation, the **median age** can be considered to be approximately **17.6** years.

The broader Nalawa Tikina had a population of 4932 in 2017, across an area of 241.4 km², giving a population density of 20.43/km².



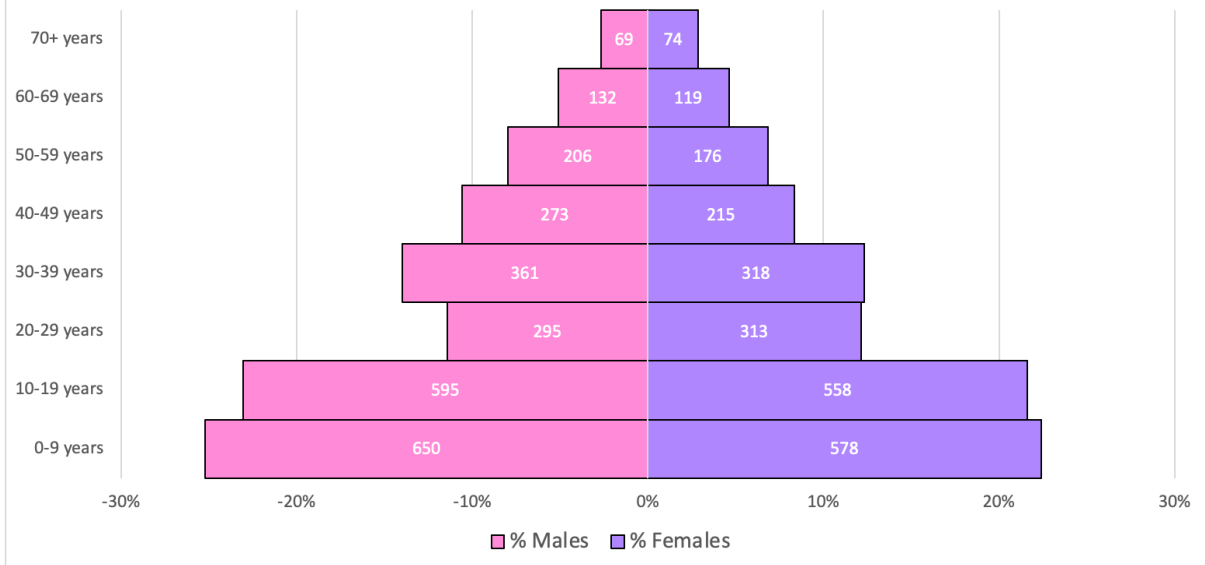
Source: Fiji Islands Bureau of Statistics

Nalawa Tikina Population by Age (2017)



Source: Fiji Islands Bureau of Statistics

Nalawa Tikina Population Pyramid



Source: Fiji Islands Bureau of Statistics

2023

The population of Dreketi Settlement in **2023** can be estimated to be around **110**.¹ It is a growing population, and home to many young families as overspill from neighbouring villages in the Nalawa Tikina (District), such as Navitilevu.

Further along Dreketi Road there are two additional settlements, one being named Waibasaga. For the purpose of clarity, these two settlements are not part of 'Dreketi Settlement', and henceforth a distinction between the Dreketi Settlement and Dreketi Road will be drawn. Factoring in these two settlements would mean that approximately 100 families (c. **450** people) call Dreketi Road their home. These settlements are also separated from the King's Road by bridges which become cut-off during extreme weather. In our original proposal, the 8m x 9.9m building would be expected to have capacity for the Kindergarten-aged children from these settlements, but the evacuation centre would be aimed at accommodating the people of Waisava and Vunimaqo.

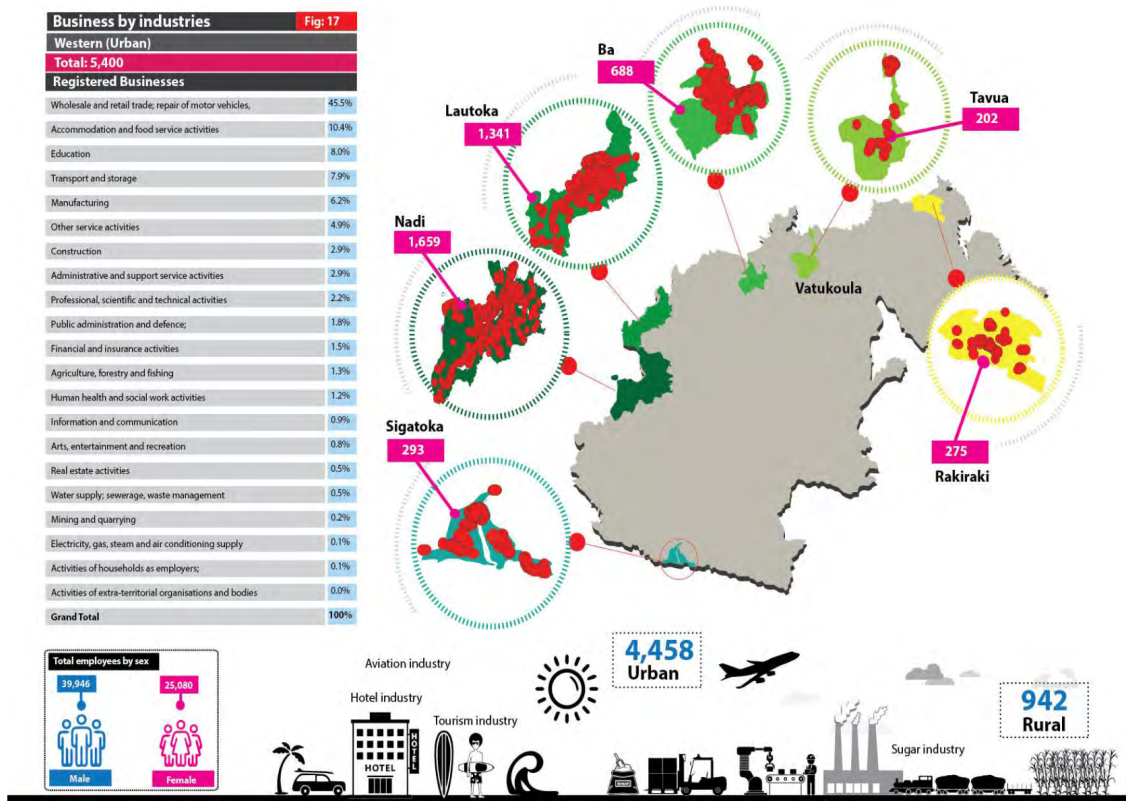
Ages range from newborn babies to adults in their eighties, however there is a particularly large youth population. Roughly **60** children living on Dreketi Road are of kindergarten-attending age (<5 years).

The youth population in Dreketi Settlement and across the wider Dreketi Road is a microcosm of trends in Fiji as a whole; Fiji is currently in Stage 3 of the Demographic Transition Model. Fiji is continuing to experience population growth, but it is moderate and slowing. Fiji's birth rates have continually dropped since 1995 - the current birth rate is 21 people per 1000 people, which falls into the stage 3 category. In addition, Fiji has a death rate of 8 people per 1000 people, which also falls into the stage 3 category. Therefore, as the birth rate is higher than the death rate, Fiji still experiences moderate population growth. Furthermore, a stage 3 country typically has a natural increase rate of 1% to 3%, and Fiji's natural increase rate lies within this range at 1.4%

¹ We have asked Na Asenaca, the community health worker and Gabi and Bev's Na, to supply the official current population breakdown that she used at the health screening day.

Livelihoods

People in Dreketi are generally farming for subsistence, with any surpluses traded on the King's Road or in RakiRaki (Raki²) Town market on a Saturday. Common vegetables grown include cassava, taro, aubergine, pumpkin, watermelon, ochra, cabbage, and many more. Some handicrafts produced by the women may also be traded. There are about five private vehicles ('pick-ups') in Dreketi, some of which are used for private taxi services. There is also a primary school teacher in the village, and two further members of the community are qualified to teach up to Year 6 (primary school age).

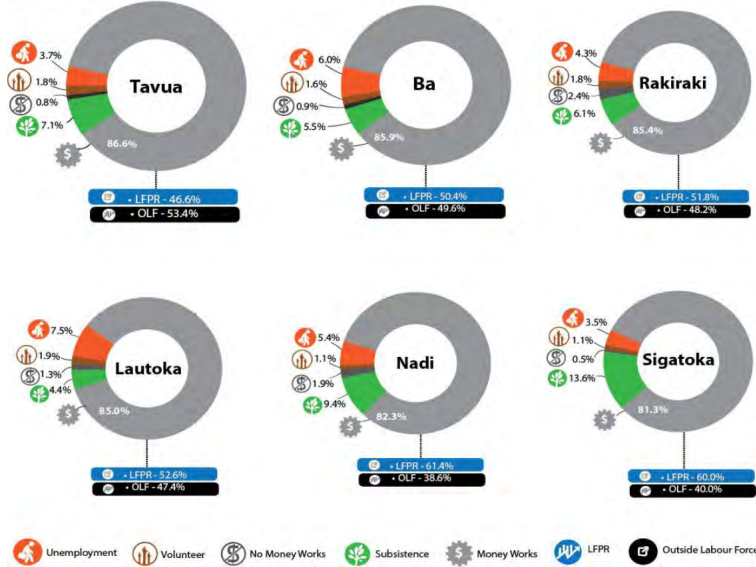


Economic Activity Fig: 20
Western (Urban)

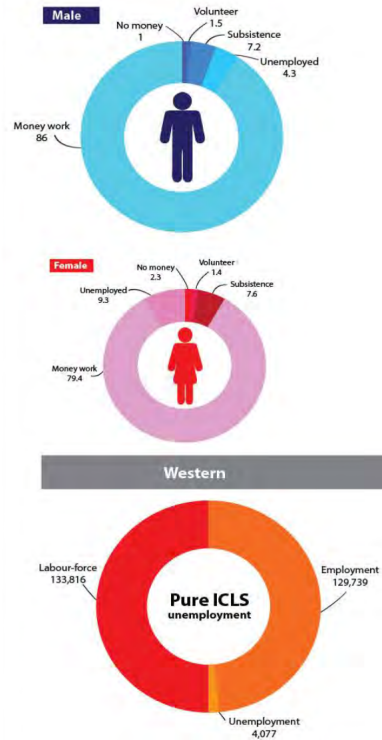
Description

- The labour force is made up of those engaged in Paid or Unpaid work or are Unemployed. The Unemployed are those who are available or looking for work.
- Urban dwellers engaged in money work activities accounted for 83.8% of the labour force with Tavua at 86.6% followed by Ba at 85.9%.
- The highest unemployment rate was recorded Lautoka at 7.5% followed by Ba at 6.0%
- Participation for subsistence was the highest for Sigatoka at 13.6% while Lautoka recorded the lowest at 4.4%
- Those outside the Labour Force (OLF) are made up of students, retirees, full-time home workers and those not looking for work.

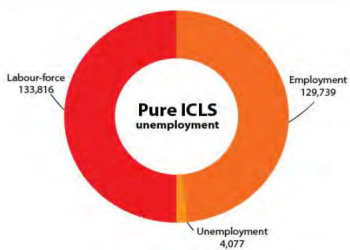
Economic activity



By Gender



Western



Education in Fiji

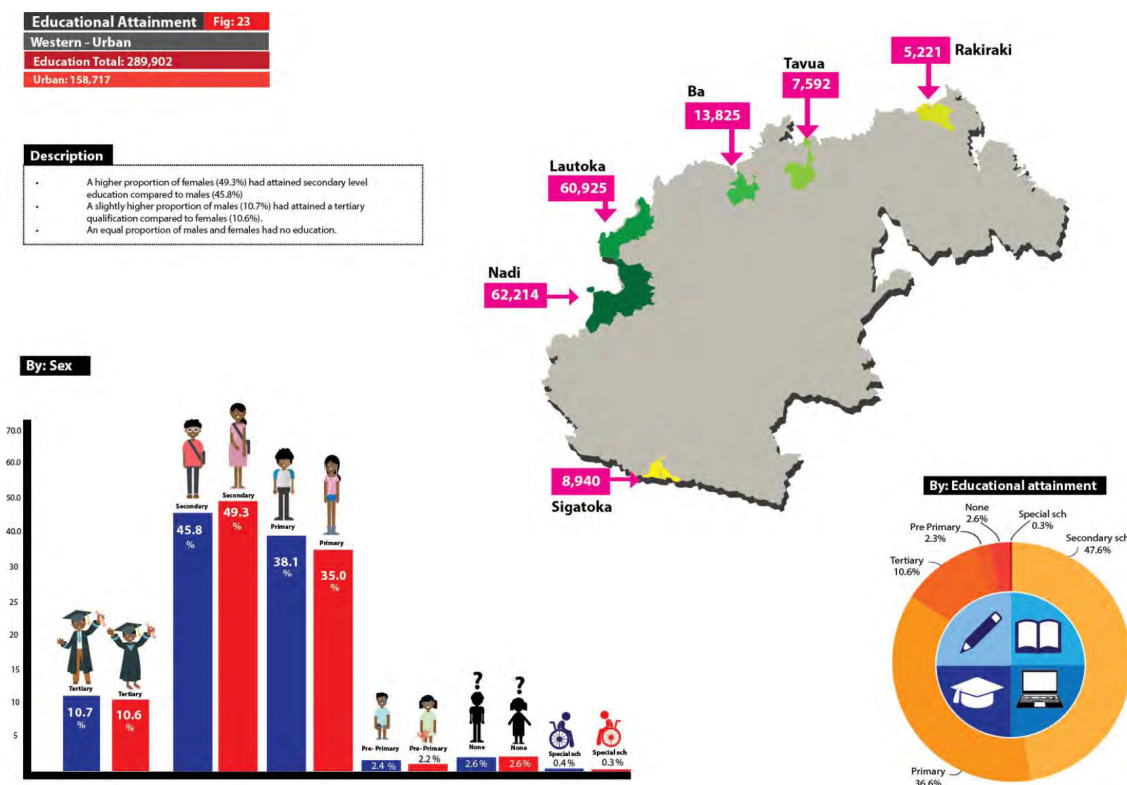
Current Situation - Attendance of Kindergartens

There is a strong need for the kindergarten, as was supported by survey findings (see attached in the Appendix). This survey included questions on the need for the Kindergarten, as well as what facilities it should include and activities that could occur there in the afternoons and evenings as a community hub. This is explained further in the ‘Kindergarten Structure’ section.

Many children of the settlement have little access to Early Childhood Education. Very few expensive carriers (costing c.FJD \$7 a week per child) are available to take children to the nearest kindergarten, and those that do attend must be left unsupervised for up to 4 hours as they wait for the return carrier, since the Kindergarten closes at 11.30AM, yet the carrier collects the children at 4PM alongside the students at Ra High School. In the afternoon the very young children are told to just sleep on the floor. All these barriers to education leave many children without access to education.

Regional Picture

Across the Western division, only 56.5% of adult males and 59.9% of adult females have education beyond primary school level. 2.6% of Fijians have received no education at all, including pre-primary or Kindergarten level.



Across Ra, in 2017, there were 830 children of Pre-School age, as shown in Table 5.1 below.

Table 5.1 Total Population by Province of Enumeration by Educational Attainment

Education Level	Total	Provinces														
		Ba	Bua	Cakaudrove	Kadavu	Lau	Lomaiviti	Macuata	Nadroga/Navosa	Naitasiri	Namosi	Ra	Rewa	Serua	Tallevu	Rotuma
Total	237,192	61,073	4,490	14,319	2,992	2,789	5,156	17,673	13,995	47,443	2,604	8,698	30,840	5,497	19,159	464
Special School	1,037	335	2	39	3	4	29	67	67	228	1	34	155	12	60	1
Pre-School	15,685	3,936	344	944	324	310	393	1,075	978	2,806	217	830	1,828	405	1,268	27
Year 1	18,896	4,845	391	1,345	312	274	420	1,357	1,183	3,682	202	728	2,153	474	1,504	26
Year 2	18,541	4,762	419	1,273	303	273	453	1,333	1,282	3,527	184	758	2,044	432	1,467	31
Year 3	16,626	4,366	379	1,142	250	241	402	1,188	1,080	3,072	173	684	1,899	395	1,325	30
Year 4	16,326	4,110	372	1,180	255	244	367	1,193	1,117	3,098	172	668	1,832	420	1,254	44
Year 5	16,031	4,211	387	1,096	249	223	370	1,241	1,119	2,883	189	632	1,766	399	1,232	34
Year 6	16,176	4,122	366	1,165	266	237	370	1,245	1,084	3,058	171	673	1,727	386	1,257	49
Year 7	15,399	4,042	377	1,055	224	226	371	1,172	1,032	2,764	182	624	1,694	386	1,222	28
Year 8	15,740	4,086	367	1,086	243	250	366	1,189	1,004	3,024	182	614	1,690	372	1,229	38
Year 9	14,307	3,732	247	852	130	108	308	1,149	868	2,861	178	477	1,672	338	1,352	35
Year 10	14,087	3,580	243	822	134	85	386	1,158	806	2,765	177	464	1,744	313	1,369	41
Year 11	13,003	3,403	191	743	126	114	352	1,056	690	2,593	167	495	1,524	294	1,228	27
Year 12	11,767	2,882	175	682	86	73	283	979	691	2,418	166	413	1,426	244	1,221	28
Year 13	9,050	2,356	149	619	71	68	221	733	461	1,735	136	322	1,083	149	924	23
Foundation	2,047	458	4	59	3	12	20	143	32	621	27	15	553	17	83	-
Certificate	5,392	1,784	49	89	2	23	27	450	217	1,339	14	131	755	207	304	1
Diploma	5,435	1,625	18	53	4	10	7	355	130	1,664	23	52	1,099	82	313	-
Degree	10,786	2,313	10	66	7	8	11	567	140	3,065	34	72	3,822	164	506	1
Post Graduate Certificate	210	34	-	3	-	1	-	8	2	74	-	3	69	2	14	-
Post Graduate Diploma	285	33	-	3	-	4	-	11	7	66	1	6	135	1	18	-
Masters	334	52	-	2	-	1	-	4	5	94	8	2	153	5	8	-
Doctorate	32	6	-	1	-	-	-	-	-	6	-	1	17	-	1	-

According to Table 5.3, of these 830 Pre-School aged children in Ra province, 715 (86%) were from rural areas, *id est*, outside of RakiRaki town. It is harder for these children to access kindergartens, such as the one adjacent to Ra High School on the King's Road, and they have to be transported by carrier which is not the safest mode of travel for unaccompanied 2-3 year olds. A subset of this figure will be the children who would attend the proposed Dreketi Kindergarten, highlighting the significant demand.

Education Level	Total	Province														
		Ba	Bua	Cakaudrove	Kadavu	Lau	Lomaiviti	Macuata	Nadroga / Navosa	Naitasiri	Namosi	Ra	Rewa	Serua	Talavu	Rotuma
Total	104,562	19,516	4,299	10,845	2,992	2,789	3,404	10,226	11,625	7,636	2,604	7,137	3,441	3,550	14,034	464
Special School	322	97	2	28	3	4	15	30	46	10	1	23	14	7	41	1
Pre-School	8,145	1,365	320	797	324	310	321	712	878	616	217	715	288	261	994	27
Year 1	9,016	1,593	374	1,078	312	274	326	825	975	604	202	637	327	321	1,142	26
Year 2	8,911	1,531	405	1,034	303	273	341	820	1,078	634	184	621	269	302	1,085	31
Year 3	8,047	1,504	367	872	250	241	308	734	882	587	173	588	283	248	980	30
Year 4	7,903	1,369	356	939	255	244	280	740	940	578	172	545	246	289	906	44
Year 5	7,782	1,440	374	856	249	223	281	757	946	541	189	520	239	258	875	34
Year 6	7,949	1,412	352	931	266	237	290	794	921	570	171	570	229	247	910	49
Year 7	7,622	1,456	361	820	224	226	292	708	867	540	182	507	254	255	902	28
Year 8	7,652	1,395	347	869	243	250	275	724	843	602	182	505	246	236	897	38
Year 9	6,298	1,185	233	578	130	108	152	657	720	496	178	386	187	218	1,035	35
Year 10	6,132	1,093	239	576	134	85	162	629	662	481	177	356	207	203	1,087	41
Year 11	5,538	1,047	181	486	126	114	142	573	543	410	167	413	180	183	946	27
Year 12	4,892	850	167	441	86	73	113	551	546	345	166	329	145	140	912	28
Year 13	3,760	711	142	366	71	68	70	391	356	298	136	225	97	96	710	23
Foundation	362	108	4	28	3	12	5	50	26	36	27	12	6	6	39	-
Certificate	1,699	502	48	60	2	23	22	202	189	119	14	102	55	168	192	1
Diploma	1,035	345	17	31	4	10	6	144	97	57	23	37	52	48	164	-
Degree	1,401	490	10	51	7	8	3	180	102	103	34	42	113	60	197	1
Post Graduate Certificate	25	5	-	2	-	1	-	1	2	4	-	2	-	1	7	-
Post Graduate Diploma	39	7	-	1	-	4	-	3	5	3	1	1	4	-	10	-
Masters	30	9	-	1	-	1	-	1	1	2	8	1	-	3	3	-

Education in the Context of the Fiji National Development Plan and UN SDGs

Goal 3.1.5 of the FNP focuses on Quality Education and Advocacy. By establishing a kindergarten in Dreketi, the community will be granted the first step in a long educational journey. Pages 35-39 of the FNDP state that quality education for all is essential to create a more skilled and adaptable workforce.² Investing in youth is ultimately investing in the future of Fiji's sustainable development. A positive kindergarten experience follows on into primary school. Children who are able to access and regularly attend good quality schools will be empowered to achieve whatever they wish.

The OECD has also produced an abundance of literature on early childhood education, including the importance of leadership to ensure the quality of early childhood education.³

Similar Projects

In Nadi, a South Korean-funded project has been highly successful. The former Nadi College has become the site for a series of international schools: the Ezra Lincoln Group of Schools.

²<https://www.fiji.gov.fj/getattachment/15b0ba03-825e-47f7-bf69-094ad33004dd/5-Year-20-Year-NATIO-NAL-DEVELOPMENT-PLAN.aspx>

³ Douglass, A. (2019), "Leadership for quality early childhood education and care", *OECD Education Working Papers*, No. 211, OECD Publishing, Paris, <https://doi.org/10.1787/6e563bae-en>

Ezra Kindergarten opened in September 2022, operating on a September-August academic calendar (as opposed to the standard January to December in Fiji).⁴

English language schools are also on the rise in Fiji.⁵

Building Standard in Fiji

As shown in the census, the most common building material for roofs in Ra is metal (aluminium sheets), because they are cheap. The most common wall types are cement and aluminium. The homes in Dreketi all have aluminium walls because they are cheaper and all the houses had to be rebuilt after Hurricane Winston, with \$7000 aid from the government per household.

Housing Structures	Total	Province										
		Ba	Bua	Cakaudrove	Lomaiviti	Macuata	Nadroga /Navosa	Naitasiri	Ra	Rewa	Serua	Tailevu
Occupy iTaukei land with informal (vakavanua) arrangement	6,284	1,329	2	92	59	132	11	3,162	12	1,448	10	27
Occupy Itaukei Land with formal tenancy agreement	1,474	516	-	10	34	66	-	677	-	139	12	20
Occupy through traditional village tenure (within village boundary)	3,885	1,873	37	300	198	101	460	213	111	386	-	206
Traditional ownership (Mataqali Tokatoka Yavusa)	3,993	1,735	41	209	122	137	207	653	89	511	-	289
Housing Authority Lease	5,928	559	-	74	-	147	-	2,285	-	2,662	-	201
Other (specify)	17,874	6,408	1	123	34	350	14	8,940	12	1,863	90	39
Floor Type												
Total	108,715	37,575	132	2,419	790	6,265	2,452	31,509	1,396	19,894	1,800	4,483
Wood	36,418	4,808	93	1,413	312	3,706	277	13,595	103	8,538	861	2,712
Metal/iron/aluminium	974	357	-	13	-	28	17	268	18	195	18	60
Concrete/cement/bricks	70,332	32,023	32	961	447	2,515	2,133	17,385	1,246	11,025	907	1,658
Traditional materials	379	184	-	9	13	-	21	95	12	35	-	10
Other (specify)	612	203	7	23	18	16	4	166	17	101	14	43
Roof Type												
Total	108,715	37,575	132	2,419	790	6,265	2,452	31,509	1,396	19,894	1,800	4,483
Wood	1,722	338	2	27	36	40	6	662	14	368	53	176
Metal/iron/aluminium	103,191	36,029	129	2,359	732	6,152	2,393	29,501	1,341	18,681	1,699	4,175
Concrete/cement/bricks	3,577	1,140	1	24	15	71	49	1,257	40	813	45	122
Traditional materials	65	27	-	-	-	-	3	22	-	13	-	-
Other (specify below)	160	41	-	9	7	2	1	67	1	19	3	10
Material of Walls												
Total	108,715	37,575	132	2,419	790	6,265	2,452	31,509	1,396	19,894	1,800	4,483
Wood	22,130	4,704	35	1,393	300	3,423	304	6,346	121	3,527	473	1,504
Masonite	1,398	346	4	18	1	173	14	588	2	169	13	70
Metal/iron/aluminium	32,181	11,891	73	615	206	1,355	566	9,825	514	4,883	576	1,677
Concrete/cement/bricks	52,428	20,338	20	376	275	1,292	1,557	14,638	754	11,242	734	1,202

Cyclone Winston (2016)

In 2016, Cyclone Winston, a category 5 cyclone obliterated the South Pacific, causing immense damage and claiming the lives of 44 people. Unfortunately, one of those 44 people

⁴ <https://www.fijitimes.com/new-kindergarten-opens/>

⁵ <https://www.fijitimes.com/english-language-school-records-increased-revenue/>

lived in Dreketi, and was a 26 year old mother to two young children, one 2 years old and one 3 months old. The houses and buildings of Dreketi were obliterated and many were left injured. Of this incident, many of the residents of Dreketi echoed the sentiment that they were left with nothing but the clothes on their back.

Cyclone Winston was the most intense tropical cyclone in the Southern hemisphere on record until it was eclipsed by Cyclone Gabrielle in February 2023. It was also the costliest, costing the equivalent of 10% of Fiji's GDP.⁶ Cyclone Gabrielle did not affect Fiji, just Vanuatu and parts of Australia and New Zealand. Nonetheless, it demonstrates the desperate need for the evacuation centre as extreme weather events are becoming both more intense and more frequent with climate change.⁷

Fiji is particularly vulnerable to the effects of global climate change, as rising sea levels, increased flooding and regular storm surges pose serious risk to the structure of the village and the lives of its people. Despite rebuilding efforts, many residents still have no access to evacuation centres or buildings that can serve as a place of refuge at times of disaster.

There are eighty-eight buildings which act as evacuation centres in Ra.⁸ However, the Dreketi Settlement is cut off from these during periods of extreme weather as the Dreketi Road is separated from the main King's Road by multiple bridges on either side.

⁶<https://www.wunderground.com/blog/JeffMasters/winstons-damage-highest-in-south-pacific-history-extreme-february-wa.html>

⁷ <https://www.bbc.com/news/world-asia-64940342>

⁸ https://www.fijivillage.com/documents/Evacuation_Centres_List.pdf

Ecology and Climate in Fiji

Located in the South Pacific, Fiji is an archipelago of more than 300 islands, of which just over 100 are inhabited. Fiji has a tropical marine climate, which is influenced greatly by oceanic activity and is characterised by having only two seasons – the dry season and the wet season. These tropical marine climates are common in island and coastal areas located 10° to 20° north of the equator. Annual rainfall in tropical marine climates ranges from 1000 to 1500 mm. There is little variation in temperature between the two seasons, with it being warm all year round in Fiji – temperatures in the cooler, dry season (May to October) average 22°C. Rainfall, however, is variable, with November to April experiencing heavier rainfall⁹. Regions with tropical marine climates are influenced by anticyclones and tropical waves across their wet and dry seasons¹⁰. Island nations like Fiji are particularly vulnerable to the effects of climate change, including rising sea levels, coastal erosion and extreme weather events.

This trend toward weather extremes poses a significant threat to the lives of the people who live in Fiji, and threatens terrestrial, freshwater and marine ecosystems. Coastal areas, such as the northmost province of Ra, are most affected by these natural disasters.

⁹ "Our Country". *fiji.gov*. Government of the Republic of the Fiji Islands. November 2009

¹⁰ London, Norrel A.; Senior, Michael W. (1991). *Principles of Geography for CXC* (second ed.). London: Longman.

Fiji is party to multiple intergovernmental treaties on climate change mitigation – including the Kyoto Protocol and the Paris Climate Agreement, with an aim to achieve net-zero carbon emissions by 2050. Fiji’s demonstrated commitment to promoting long-term climate-resilient development is evidenced by the nation’s National Climate Change Policy (2018-2030)¹¹ and the recently adopted National Climate Finance Strategy, aimed at protecting communities from escalating climate impacts¹².

Regional diplomacy across the Pacific Islands must be considered as the Pacific Islands face some of the most direct effects of climate change, exemplified by the threat of Tuvalu being underwater by 2100.¹³ It is important that Pacific Islanders’ needs are listened to and addressed, and where possible, that they have a say.¹⁴

Of course, it is not possible to legislate ecological problems overnight and that the impact of climate change on pacific islands hinges greatly on the actions taken by high-emitting countries; but current climate impacts leave Fiji vulnerable, and without choice in its decision to adapt to climate degradation. However, internally the nation lacks the requisite technical expertise, resources and financial capacity to tackle the effects of climate change on the island without the help of international aid¹⁵.

¹¹ National Climate Change Policy (2018-2030)

https://climate-laws.org/document/national-climate-change-policy-2018-2030_4019

¹² Fiji National Climate Finance Strategy

<https://fijiclimatchangeportal.gov.fj/ppss/fiji-national-climate-finance-strategy/>

¹³<https://www.theguardian.com/world/2023/jun/27/tuvalu-climate-crisis-rising-sea-levels-pacific-island-nation-country-digital-clone>

¹⁴ Hau’ofa, Epeli. “Our Sea of Islands.” *The Contemporary Pacific*, vol. 6, no. 1, 1994, pp. 148–61. JSTOR, <http://www.jstor.org/stable/23701593> Accessed 7 Sept. 2023.

¹⁵ <https://unfccc.int/sites/default/files/resource/fjinc1.pdf>

Kindergarten and Evacuation Centre Structure and Design

Structural Design with the Fijian Community

As the architecture student in the group, Isha drew some floor plans and isometric 3D drawings of the multipurpose kindergarten and evacuation centre building, designed with her Fijian Dad (Ta Solo). Solo is a member of the Think Tank group and the plot owner of the kindergarten site.

The building would be 9.9m by 8m and have a capacity for c.100 people. Think Pacific's cyclone-proof homes report was referred to for the structural design, alongside the Fiji shelter handbook and community survey findings. After analysing the breakdown of material costs, structural durability and resistance from NGOs such as Think Pacific, Habitat for Humanity and Red Cross the attached model was proposed for the structure. The kindergarten should use concrete footing, masonry blocks, 12 feet 8m by 8m direct posts and timber frames to provide durability against the category 4 and 5 winds. The masonry blocks will also provide a place of shelter in case the roof flies off. Other construction strategies should be implemented, such as the tie-down from the bottom up and using plates and posts for stronger support.

Based on the community survey findings, the kindergarten must have a washroom, bathroom, breastfeeding room, sick bay, medical supplies, shelter kit, non-perishable food, storage space, kitchen, ramp, porch, art supplies, blackboard, chairs, tables and a fenced playground with swings, a slide and a seesaw. Solo and Isha tried to combine some of the functions and create a multipurpose floor plan that can serve both institutional and recreational purposes. In case of an evacuation emergency, the furniture can be moved to a corner. The floor plan also has a lot of open space to accommodate a variety of after-school



[https://www.researchgate.net/figure/The-basic-principles-of-preschool-institutions-design-t
he-example-of-kindergarten-Kids_fig4_335067580](https://www.researchgate.net/figure/The-basic-principles-of-preschool-institutions-design-t
he-example-of-kindergarten-Kids_fig4_335067580)

4. Safety

Safety is of utmost priority and safety equipment such as first-aid kits, fire extinguishers, foam mats, soft edges table, and door finger protection should be installed.

5. Go-green

Green buildings have a positive impact on the environment and allow children to interact with nature.

6. Visual Horizons of children

Keeping a child's viewpoint in mind can help design the correct circulation flow and allow children to conveniently access all furniture.

7. Private space

It is important to have a dedicated quiet space for children to engage in quiet activities and have downtime for themselves.

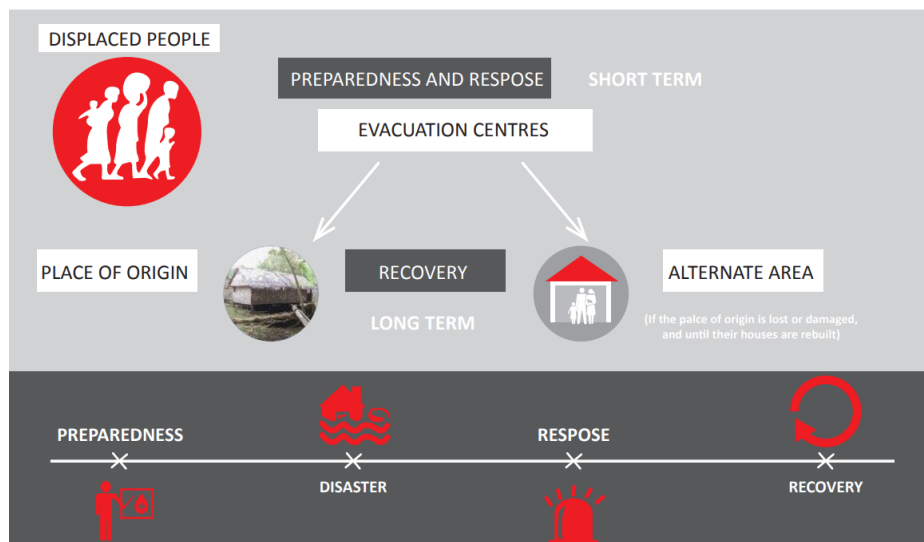


<https://www.barrsrec.com/markets/daycare-preschool-playground>

Playgrounds also play a crucial role as children’s physical, social-emotional, cognitive, and creative development is supported and developed by play. Jumping and running are important for building bone density and the World Health Organization recommends daily physical activity of at least three hours for those under-five, and as a minimum, one hour of vigorous physical activity for young children. Playground’s should be accessible, inclusive, comfortable and usable. Recommended playground equipment should include rope structures for climbing activities, small towers for crawling and sliding, hangout spots, bright colours, slides, swings, see-saws, sand and water play. Materials used for the playground should be durable, non-skid, eco-friendly, soft and safe such as high pressure laminate (HPL) and sand or grass.¹⁷

Safety Standards for an Evacuation Center

Evacuation centres must be in safe, accessible locations, meet structural requirements, have enough capacity to fit the community, have water, have cooking facilities, have electrical installations and include safety and protection systems. Evacuation centres are also crucial infrastructures for Fiji’s preparedness, response and recovery plan pre and post disaster as seen in the displacement cycle figure below.



<https://ndmo.gov.vu/images/download/EvacCentres/Evacuation%20Centres%20Guidelines.pdf>

¹⁷ <https://www.kompan.com/en/ca/inspiration/industry-inspiration/early-childhood>

According to the Fijian National Disaster Management Office (NDMO), an evacuation centre should meet the following requirements:¹⁸

- Be elevated above any likely impact from high tide or storm surge level (without being unnecessarily exposed to wind impacts).
- Be raised at least 500mm above the identified highest known or predicted flood levels.
- Be located on stable geotechnical land, not subject to potential landslip or exposed to potential landslides of adjacent land.
- Have no nearby large trees, structures, power lines (or other potential hazards) that might represent a threat.
- Not be close to facilities that manufacture, use or store hazardous materials.
- Be easily accessible by vehicle and foot, and for those with disability (for all types of a hazard event, whether cyclone, flooding or tsunami).
- Reflect communities' natural gathering places.
- Have all-weather access for vehicles where possible.
- Be safe for women, children, the elderly, people with disabilities and other vulnerable individuals.
- Be centrally located servicing communities.
- Buildings should be no more than 9m high and ideally should be designed by an earthquake load standard, according to either national building codes or equivalent codes from neighbouring countries like New Zealand or Australia.
- Suitable buildings should be shielded from high winds by established trees, and be at least two tree lengths away from them.
- Square or rectangular-shaped buildings are more suitable than L-shaped or U-shaped buildings, which have more vulnerable aerodynamics.
- Preferably buildings should have access routes that are not tree-lined.
- Protection from mosquitoes.
- Fire extinguishers and smoke detectors in working order.

¹⁸ <https://ndmo.gov.vu/images/download/EvacCentres/Evacuation%20Centres%20Guidelines.pdf>

- Guaranteed long-term sustainability regarding ongoing community ownership and maintenance (the responsibility for maintenance should be clearly defined and provided over the lifetime of the structure).
- A dedicated medical treatment area (or as close as possible to a nearby health facility).
- A perimeter fencing with a dedicated main entry/exit.
- Areas for personal hygiene and cooking.
- Open space for additional toilets if necessary.
- Open space for a recreational area.
- Separate spaces to ensure adequate privacy (particularly an issue for women and girls). These spaces could be created with temporary screens.
- Allowing sufficient space for each person/ household.
- Ensuring that any dark areas such as basements, hallways and especially access to toilets, washrooms, latrines and showers have appropriate lighting.
- Providing child-friendly spaces and areas for education purposes.

These standards support humanitarian guiding principles of evacuation centres, ensure they are constructed in a climate-proof manner and support all affected people.

Ethical and Sustainable Build and Collaboration Considerations

It is necessary for this project to be aware of its ethical responsibilities and cautious of potential ethical dilemmas that may come into being during the construction and management of the project. For the purpose of this brief explanation, ethical responsibilities are mandates that this group will adhere to no matter what the circumstances, and describe how one is required to act and what one must do and must not do. No matter how well meaning an individual actor may be, nor how desirable an alternative may look, the ethical responsibilities set out must trump all other considerations. These ethical responsibilities, while implicit through this group's research and work, are worthy of being explicitly considered and noted as an important aspect of the project as it moves forward. While this does not constitute an exhaustive list of the ethical responsibilities which this group deems they hold, it includes the following.

1. Above all, **this project shall not harm children**. This is worthy of noting as young children are particularly vulnerable and the kindergarten project aims to serve the young children of Dreketi. This necessarily precludes any practises which are emotionally damaging, developmentally harmful, physically harmful, disrespectful, degrading, dangerous, exploitative, or intimidating to children. This principle has precedence over all other considerations in the project.
1. **The project shall be conducted in conjunction with the community itself**, and informed by the needs and desires of the community of Dreketi.
2. The community of Dreketi, workers of the kindergarten **shall not be exposed to any harm**, no matter how great or small, as a consequence of the construction or operation of the kindergarten.

However, the ethical responsibilities of the project, while providing important guidelines, are not exhaustive in terms of ethical issues that may arise throughout the project. When issues arise which are not clearly dictated by the ethical responsibilities of the project, they are likely to present an ethical dilemma, where many situations can be addressed with justifiably moral actions. While responses to ethical dilemmas are certainly guided by our ethical responsibilities, they are distinct in that they involve deliberation. By its very nature, it is a

difficult situation. But it would be ignorant to assume that no issues would arise when considering the vulnerable actors involved and the complexity of colonial relationships between the global north and global south.

Such dilemmas that may arise include: interactions between volunteers and vulnerable actors, levels of involvement as to preserve a community-led approach while not abdicating responsibilities, trust in partner involvement, the urgency of the project compared to the need for long term sustainability.

While it is not the purpose of this proposal to outline potential responsibilities, or forecast ethical dilemmas, it would be remiss not to begin such a project without an awareness of the complexity of potential ethical situations. A clear framework for establishing conflicting rights and responsibilities, consideration of potential solutions, and a need to understand the values and goals of our partners, while they in turn, understand the values of this project, is of utmost importance.

Finance & Projected Costs

Funding Model

Through conversations which took place during the “Think Tank” component of the 2023 Think Pacific LiA with the build manager for that project, we received the following quotes for materials and labour:

Materials – \$16,000 FJD

Labour – \$2,500 FJD

These quotes were provided for a 32 x 24 ft evacuation centre build, with a 4 week build timeline.

[SOME CONFIDENTIAL DETAILS REDACTED]

Adjusting for any potential increase in the National Minimum Wage between the development of this proposal and the inception project; and ensuring that all labourers are paid appropriately for the hours that they work, actual labour costs are expected at:

\$6,000 FJD¹⁹

Which places the combined costs for materials and labour at:

\$22,000 FJD

For the total cost of the building of the kindergarten, a total of \$10,000 FJD has been costed to account for starting capital costs, which are required by the Fijian Ministry of Education. As well as this, it is also proposed that \$5,000 FJD for the provision of materials within the building, and for the sustainability of the project pending a longer term funding model and strategic plan.

¹⁹ 10 labourers working 6 hours per day at \$5 FJD per hour.

As such, the total cost of the project is estimated at \$37,000 FJD (£13,000 GBP). Villagers within Dreketi have already sourced some materials, have identified a suitably sized central location, and acquired land-use permission.

Personal Fundraising

Following the culmination of the 2023 Think Pacific Leadership in Action Experience, the authors of this proposal have begun fundraising through the online platform GoFundMe – the current fundraising link can be viewed here: [GoFundMe](#).

Amongst this specific Laidlaw Scholars cohort, fundraising efforts have been planned over the course of the next year, in line with the proposed timeline for the project. These efforts include a London to Durham relay cycle ride in April 2024 for scholars currently based in the UK, and a charity run in Harbourfront, downtown Toronto.

Opportunities are also being sought at the annual Laidlaw Conference in October 2023 to reach scholars who are attending, with a view to fundraising further and to use the opportunity to highlight the benefits of the Leadership in Action experience, and what can come from them. The authors of this proposal are primarily UK-based and as such will likely be in attendance at the Dublin conference, but are keen to explore any and all prospects for harnessing the opportunity to further the aims of this proposal, as well as highlighting the leadership development potential of the LiA to other scholars.

Partnership with Laidlaw Foundation

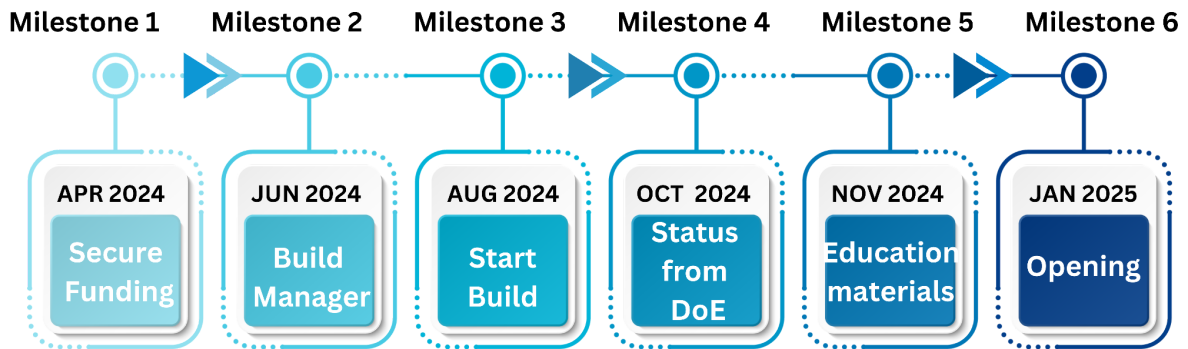
There is a heightened demand and anticipation from the people of Dreketi settlement for this evacuation centre, particularly in a time of increased climatic risk. With this considered, the authors of this proposal are approaching this project with urgency, and recognise that personal fundraising or crowdsourcing, while attainable, may not be the most expeditious route to project completion.

To this end, there is a desire to pursue a project partnership with the Laidlaw Foundation – who could potentially provide monetary support towards the delivery of the kindergarten in the area of Dreketi. The Laidlaw Foundation are ideal partners in that the mission statement

of the organisation greatly aligns with the values of this project, and it was through opportunities provided by the foundation that this project came to fruition.

During the "Think Tank" element of the project, particularly during the presentation element, monetary contribution from Think Pacific was not immediately sought, with the urgency of project delivery being a key part of this rationale – Think Pacific projects for 2024 are already in development, so it is likely that the Dreketi project wouldn't begin development until summer 2025, *if* accepted and prioritised by Think Pacific. However, at the time of this presentation the authors articulated a desire to foster a mutually beneficial partnership with Think Pacific in supporting the project through accessing resources and information within Fiji.

Timeline



These timelines may be a bit idealistic, but we believe we have considered pitfalls sufficiently, and allowing for contingency, we would expect the kindergarten to be able to open in **January 2025** or, failing that, 2026.

Milestone 1

Secure Funding - target is to have all the funding by **April 2024**. We intend to do charity fundraisers for our [GoFundMe](#) page. These include a London to Durham Cycle ride in April 2024 for the four of us currently based in the UK, and maybe a charity run in Harbourfront, downtown Toronto for Isha. We would like to speak at the annual Laidlaw Conference in **October 2023**, attending in person in Dublin, to use this as a springboard for receiving donations from scholars and inspiring them to make the most of their Leadership-in-Action projects and go above-and-beyond.

Obstacles

- Agreeing on logistics of partnership with NGOs.
- Management of funds when we withdraw from GoFundMe.

Milestone 2

Build Manager - target is to source the build manager in **early 2024**. We need one reliable build manager to oversee the project, like Jimm Tavi of Think Pacific. They should have relevant experience but could come from any organisation.

Obstacles

- Whether Think Pacific would facilitate this without volunteers/scholars working on such a project.
- Efficacy and need to monitor the finances/project budget.

Milestone 3

Building the Kindergarten - **build in July/August 2024**. About ten workers from Dreketi can work on the project under the guidance of the build manager.

Obstacles

- Health and safety considerations.
- Efficacy and need to monitor the finances/project budget.
- Sticking to schedule.
- Having sufficient access to materials.

Milestone 4

Kindergarten status being granted from the Department of Education in **Autumn 2024** after the building has been built. This would take time.

Obstacles

- Bureaucracy and time delays.
- Transferring the starting capital of \$10,000 FJD.
- Sourcing a teacher (this is something we have considered and there are three qualified teachers in the settlement at present).
- Waiting for a site visit by the Ministry of Education to meet all their criteria.
- Opening in January 2025 may be ambitious, it may have to wait until 2026.

Milestone 5

Provision of educational resources by **November 2024**.

Obstacles

- Designing the playground and including amenities that have a positive impact on the development of children.
- Purchasing furniture such as blackboard, chairs, tables, shelves, etc.
- Adding other supplies such as stationary, gardening, art kits, toiletries etc.

Milestone 6

Opening of Dreketi Kindergarten by **January 2025**, the start of the academic year in Fiji.

Obstacles

- Dependent on all the previous stages going to plan and staying on schedule.
- Allowing the use of additional programs during the after-school hours.
- It may be more realistic for the Kindergarten to open **mid-2025**, or in **January 2026**, should there be administrative delays in delivering the project.

Possible Pathways and Next Steps

Laidlaw Partnership

The Laidlaw Foundation is the perfect partner for this build project stemming out of our LiA. We strongly believe that the foundation will put the needs of the Dreketi community at the forefront of the project goals and help implement the build project to the highest ethical and sustainable standard.

Think Tank Team contribution	Laidlaw contribution	Project plans conducted together
Groundwork on community needs through survey	Help empowering scholars by investing post-LiA as a	Secure funding for build materials, wages, furniture,

findings	way to continue sustainable impact	educational resources and other expenses
Grassroots connection with the community at Dreketi	Providing the means for this project in terms of funding and partnerships with grassroots organisations in Fiji	Finalise build logistics: <ul style="list-style-type: none"> - Agree on a partner organisation - Decide the final build structural design for kindergarten interior, playground and evacuation centre - Work with a build manager and labour crew - Install any remaining elements for safety and build programs to function - Discuss Kindergarten usage with the community such as opening hours and access keys
Background research on build structure in the Fijian context given the wet season	Consider holistic impact of the build such as the social, economic, cultural etc in the community	Work to secure Kindergarten status from the department of education
Build Design proposal and user-centric considerations for Kindergarten and evacuation centre design	Using skilled expertise of the foundation to improve Kindergarten design	Open the Kindergarten for the start of the academic year

Potential NGO collaborations

There are numerous NGOs we may wish to collaborate with:

Think Pacific

Pros	Cons
Previous experience and connections	Concerns with ethicality of build

May speed up the timeline	Concerns with labour wages
	Concerns with sustainability of build

Contact Details:

UK: + 44 113 335 9919

Fiji: 22 Disraeli Rd, Knolly St, Suva

UK: 15 Queen Square, Leeds, LS2 8AJ

Email: info@thinkpacific.com

Website: <https://thinkpacific.com/>

Habitats for Humanity Fiji Chapter

Pros	Cons
Well established organisation in Fiji	Will take longer to implement project
Has built kindergartens in the past in the main island of Fiji	Collaboration might be harder to pitch
	May be affiliated with the Methodist Church, most of Dreketi is Jehovah's Witness with a few Pentecostal. The Kindergarten needs to be non-denominational.

Contact Details:

Address: Lot 1, Foster Road, Suva, Fiji

Phone Number: +679 331 2012

Email: hfhfiji@habitatfiji.org.fj

Website: <https://www.habitat.org/where-we-build/fiji>

Instagram: [habitatforhumanityfiji](https://www.instagram.com/habitatforhumanityfiji)

Red Cross

Pros	Cons
Well established organisation in Fiji	Will take longer to implement project
Has done rebuilding work after hurricane Winston	Collaboration might be harder to pitch

Contact Details:

National Office

The National Office is based in 22 Gorrie Street, Suva, Fiji

Phone: +679 3314133

Divisional Red Cross Center

West

1 Vomo St, Lautoka

Mobile:+679 992 0297

North

Lot 24 Tuatua, Labasa

Mobile:+679 998 9538

Email: info@redcross.com.fj

Website: <https://fijiredcross.org/>

The above pathways are some of the means to implement this project. We are constantly searching for more ways and are open to all ideas.

DREKETI KINDERGARTEN



Appendix

Community Survey Forms Vunimaqo

House 1: Na Luisa

1. Why do you feel the settlement needs a kindergarten?

- Plenty of small children, current issues are have to walk 2 km in the rain and hot sun
- Have to wait 2 hours for the bus. The kindergarten that finishes at 12 the teachers go home and leave the children unattended until the bus picks them up.

2. What features would you like to take place in the kindergarten?

- Library, books suitable for small children
- Toys
- Fencing around the kindergarten so the teacher isn't worried if the kids are running around

3. What activities would you like in the evenings at the kindergarten?

- They can have after school in the kindergarten like for homework. Library for reading and homework club after school.

4. We would like to build an evacuation centre. Do you have any testament to why that is important?

- Common for the bridge to be flooded which means they can't reach evacuation centres on main roads
- Like everyone else they are cut off
- Plenty small bridges and road blockades and floods cut off access

5. What do you think the building should be made of?

- Concrete, raised

6. Is there anything else you would like to say about the kindergarten?

- Playground outside such as see saw and swing
- Side note: \$7000 was given from government for Winston

1. Is there someone who can be a kindergarten teacher?

- Amelia, Makata from Driketi Village and Mary Laufili from Vunimaqo. Amelia and Makata's uncle qualified kindergarten teacher. His first year this year.

House 2: Ta Solo

1. Why do you feel the settlement needs a kindergarten?

- There are two kindergartens one is 4 km away and the other one finishes at 12 but children wouldn't be able to get home by 4 with the pick up so not suitable

2. What features would you like to take place in the kindergarten?

- Library, toys, emergency shelter supplies. Should have kitchen and internal bathroom for men and women. Medical kit. Sandbags.

3. What activities would you like in the evenings at the kindergarten?

- Zumba, women's club, community gathering like the community shed, workshops for the youth and women

4. We would like to build an evacuation centre. Do you have any testament to why that is important?

- It's very important we experienced Winston and we have kids and old people. We go through many struggles to carry them along while finding a shelter for Winston. During Winston in 2016 a mom died and lots of people injured. If there was an evacuation centre those things would not happen.

5. What do you think the building should be made of?

- Concrete, deep foundation

6. Is there anything else you would like to say about the kindergarten?

- Very useful for raising our children instead of letting them go very far.

1. Is there someone who can be a kindergarten teacher?

- Amelia, Makata from Dreketi Village and Mary Laufili from Vunimaqo. Amelia and Makata's uncle qualified kindergarten teacher. His first year this year.

House 3: Na Asena

1. Why do you feel the settlement needs a kindergarten?

- Because the kindergarten in Nalawa is far.

2. What features would you like to take place in the kindergarten?

- Toys, library, playground and first aid kit.

3. What activities would you like in the evenings at the kindergarten?

- Women's club

4. We would like to build an evacuation center. Do you have any testament to why that is important?

- It's good to build an evacuation center because of the hurricane season in Fiji.

5. What do you think the building should be made of?

- Concrete

6. Is there anything else you would like to say about the kindergarten?

- No.

1. Is there someone who can be a kindergarten teacher?

- Kesa.

House 4: Na Molly

1. Why do you feel the settlement needs a kindergarten?

- Easier for us instead of traveling from carrier and crossing roadside. Easier for us mothers to look over then from nearby place. Sometimes very bad weather and cannot get carrier to to go to school. Sometimes no bus to get kids back from school.

2. What features would you like to take place in the kindergarten?

- A mini library, small see saw and playground outside for them to enjoy free time.

3. What activities would you like in the evenings at the kindergarten?

- Gardening plant small vegetables. Small activities with the kids. Culture course.

4. We would like to build an evacuation center. Do you have any testament to why that is important?

- To save kids lives and they have a lot more ahead.

5. What do you think the building should be made of?

- Cement or concrete

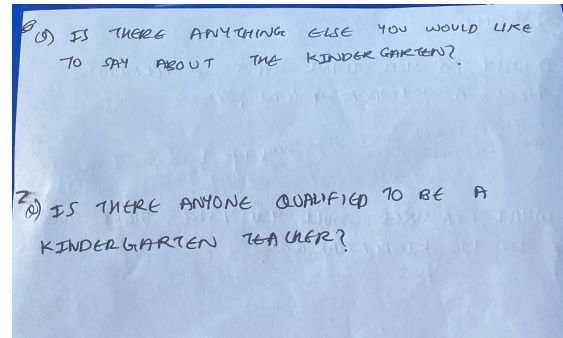
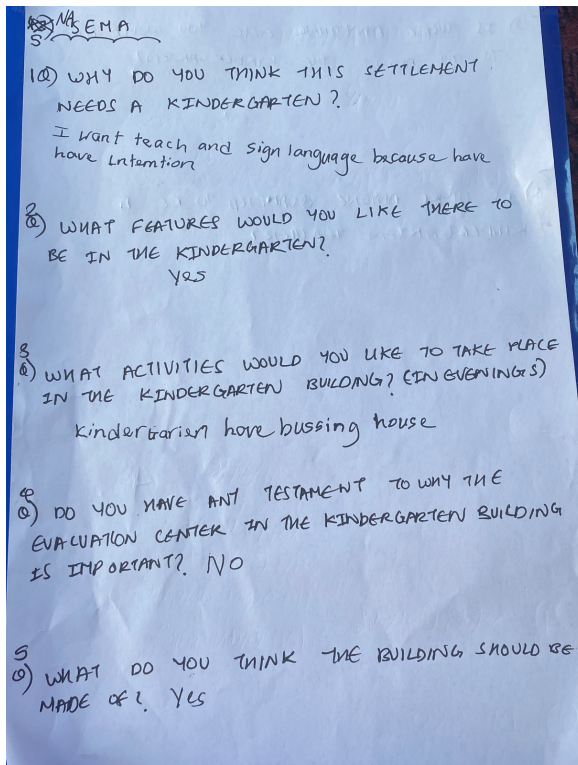
6. Is there anything else you would like to say about the kindergarten?

- Needs restrooms and breast feeding room.

1. Is there someone who can be a kindergarten teacher?

- Lagi who is already a kindergarten teacher in Dreketi. Maybe a single lady or single man who is free to be a kindergarten teacher. Maybe Una Molly's sister in law.

House 5: Na Sema (Analogue - in paper form, as Sema and her husband are both deaf and dumb)



House 6: Na Mary

1. Why do you feel the settlement needs a kindergarten?

- Needs a kindergarten for the future generations of Vunimaqo because there are lots of upcoming children.

2. What features would you like to take place in the kindergarten?

- Toys and library

3. What activities would you like in the evenings at the kindergarten?

- Community place in the evening.

4. We would like to build an evacuation center. Do you have any testament to why that is important?

- In Fiji we face a lot of natural disasters such as tropical cyclones so majority of us will need an evacuation centre.

5. What do you think the building should be made of?

- Cement and steel

6. Is there anything else you would like to say about the kindergarten?

- No

1. Is there someone who can be a kindergarten teacher?

- There's plenty of people here. Anyone that is good with children can be a kindergarten teacher.

House 7: Ta Wais

1. Why do you feel the settlement needs a kindergarten?

- We need a kindergarten because this generation has come. We have lots of young ones here and two bridges . During rainy season bridges are over flooded and cannot take kids to school. So the school is very important to make our young ones to be a good citizen. Everything starts with a single step.

2. What features would you like to take place in the kindergarten?

- Library, see saw, washroom, bathroom, playground, volleyball. We need a fence.

3. What activities would you like in the evenings at the kindergarten?

- Many things under one roof like the community shed. We need a kitchen as well in the kindergarten and food supplies.

4. We would like to build an evacuation centre. Do you have any testament to why that is important?

- Important for everyone's lives from kids to adults.

5. What do you think the building should be made of?

- Concrete house with reinforcement.

6. Is there anything else you would like to say about the kindergarten?

- There can be a sick bay and a bed in the kindergarten. When sick kids wait for their parents they might need a bed.

1. Is there someone who can be a kindergarten teacher?

- Yes Lofili.

House 8: Na Kesa

1. Why do you feel the settlement needs a kindergarten?

- Because there are many kids around here and it is far away from the big school on the road.

2. What features would you like to take place in the kindergarten?

- Library to read books and drawing. A playground and some toys for the kids to play with.

3. What activities would you like in the evenings at the kindergarten?

- Playing, Zumba afternoon and kids can also do some playing and homework.

4. We would like to build an evacuation centre. Do you have any testament to why that is important?

- The settlement needs an evacuation centre because we are far from school and we live in a settlement. It's important to protect us from a cyclone. Before we would go to the main road school to get to evacuation centre and hard to cross the bridges because bridges can be flooded. Other side of the bridge can get to this side when warning is given so everyone in settlement can access it.

5. What do you think the building should be made of?

- Cement and concrete so the wind cannot break through.

6. Is there anything else you would like to say about the kindergarten?

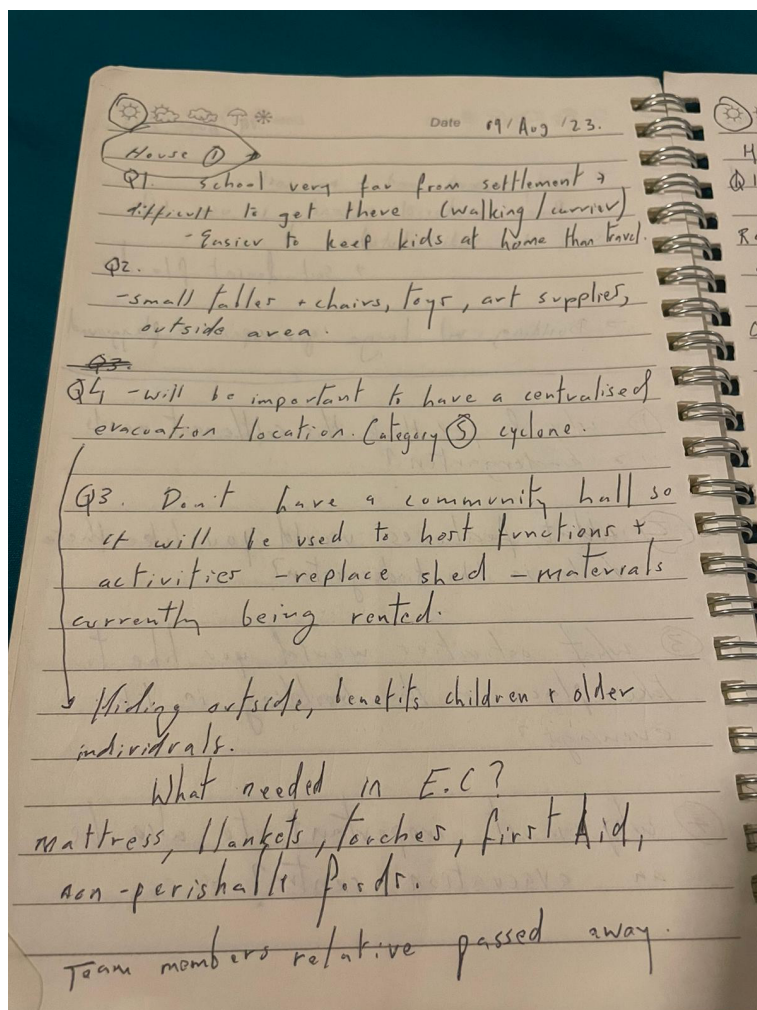
- We really want the kindergarten for our kids and also the evacuation centre. We definitely need that two because we live in a settlement far from the main road. All of Dreketi settlement which is a lot of kids can school there!

7. Is there someone who can be a kindergarten teacher?

- They can choose and up to the people. Choose graduated teachers.

Community Survey Forms Waisava

We received a further six responses from households in Waisava, taking our response rate to 14 households, covering nearly all of Dreketi Settlement. The responses were broadly similar to the residents of Vunimaqo.



123. ☀️ ☁️ 🌧️ 🌪️ 🌪️
 FANI + ALU. Date 09 Aug 2023

House ②
 Q1: Very grateful for the idon/proposal.

Resources in Hk: Books, toys, seesaw, outdoor area.

Other uses (evening)? Culture course - activities which would usually take place in shed - Don't have community hall.

Why is evacuation centre important?
 Again, important to have a centralised location. Lost all belongings.
 Govt Aid - lived in a tent for a year - \$7,000 per house.

House ③ Rubani + Catherine.

① Have a lot of young children → v. helpful: NAs - Relieve stress. It would be better than having to travel.

Resources: storybooks, toys, puzzles, playground.

Activities: Will provide flood relief for those living in non-raised houses.

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 climate factors: Flooding, cyclones.
 Activities: funerals, weddings, general functions.
 F.C. Resources: same as before.

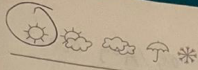
Huge psychological impact on the community.

House ④ → Timoni wife

Q1: kindergarten would be easy to travel to - current one is 35km away - \$10 per day for carrier or walk.

Resources: tables, furniture, toys, mattresses! Get clothes, non-perishable foods.

Why is EC so important?
 Cyclones are so common - important to have centralised location. Winston tough to explain - caused a lot of psychological damage to community.



Date 09 August 2023

Bu Alchie:

- moved to top of hill after Winston.
- War in Nandi during Winston - house destroyed.

QD Kk important b/c settlement is so far away from K9. Young kids waiting long hours for transport.

Resources: Books, whiteboard, colour pencils.

Other Activities: would serve purpose of community hall.

E. C Resources: - Bedding, nonperishable food, washroom.