

## Case study 1 | Community resilience in Waikalou community, Serea Village, Fiji

Waikalou community in Naitasiri Province, Fiji, is increasingly affected by changing weather patterns, adversely affecting agriculture as the main source of livelihood. Community members, led especially by women through the Naitasiri Women in Dairy Group (NWDG), are seeking to strengthen resilience by diversifying income sources. Alternative and multiple sources of income are supplementing traditional livelihoods.

Low lying agriculture land near the Wainimala River have been affected by more frequent floods and river bank erosion. The community has responded by moving agriculture fields to higher mountainous areas and introducing new root crops such as ginger, into their farming in addition to local root crops.

The Waikalou community is responding to climate change and disaster risks through multiple transformative actions which have been enabled through information provided by the Ministry of Agriculture (MoA), community willingness to adapt and respond driven by awareness of climate risks, and an appreciation of the changing role of women in leading income generating activities. Leadership of NWDG, with the support of Women's Fund Fiji (WFF), in the Naitasiri province has catalysed an interest in diversifying income generating activities which enables flexibility to anticipate and respond to climate change. NWDG members are increasingly taking on innovative and entrepreneurial actions and sharing their experience and knowledge with other women. Men are supportive of these efforts to increase household incomes, serving as a foundation for resilience and a safety net for climate change and disaster risks.

The Waikalou case study highlights how economic and livelihood diversification, led by local women leaders, combined with collective willingness and positive attitudes towards change to strengthen resilience, served as the basis for locally-led climate resilient development for this community.



*NWDG leaders from Waikalou community (1<sup>st</sup> and 2<sup>nd</sup> from the left) and WFF Project Manager during community data collection (on the right) [Photo credit: Elesi Nailati, WFF]*

### Community context

Waikalou community in Serea village within Naitasiri Province, in Viti Levu, Fiji, is located near the Wainimala River. The community of Serea village shares a close relationship with two neighbouring villages, Vunidawa and Navatukia. Due to their historical and ancestral backgrounds, these villages have strong connections and do not have strict geographical boundaries. There is a strong connection of villages and family groups across the Naitasiri Province. Serea village has a population of 858 people, consisting of 418 males, 440 females, and 36% of the population are youth<sup>1</sup>. The community is deeply rooted in religious traditions and functions as a church-centred community.

Agriculture is the main source of income, which is often exposed to climate hazards such as riverbank erosion, landslides and floods. Community members have agricultural lands both within the confines of the village as well as in nearby mountains.



*Figure 1: Map of Viti Levu, Vanua Levu and surrounding islands showing Serea village, Fiji (Source: Google Map, 2024)*

<sup>1</sup> The data has been provided by the Naitasiri Provincial Council, March 2024.

## Climate impacts

Waikalou community members described experiencing climate change and disaster hazards over the last 15 years. Experiences described by community members include:

**Increasing frequency of cyclones** that have resulted in a loss of plantations and crops. Tropical Cyclone (TC) Winston in 2016 was the most damaging cyclone, causing loss and damage of households and agricultural land.

*The frequency of cyclones has increased. We get 3-9 cyclone warnings every year ....*

- Women of Waikalou community

**Landslides** triggered by heavy rainfall have caused damage to infrastructure and agricultural land.

**Prolonged rainfall** has caused overflow of drainage systems and contamination of water sources such as rivers or catchments. This has made drinking water muddy, requiring villagers use water filtration tablets to treat drinking water.

**Riverbank erosion** caused by frequent flooding and gravel extraction by a private company has posed a significant threat to the community in recent years. Some community members have relocated their houses and farmlands inland. Riverbank erosion has also led to the loss of agricultural land and damaged root crops, affecting the community's sources of income. Widening of the river has disrupted community access to farmlands.



Wainimala River adjacent to Serea village [Photo credit: Tazrina Chowdhury, UTS-ISF]

**Changing seasonal patterns** were described by community members during the Case Study research. This included unpredictable length of seasons and changing rainfall patterns which have disrupted traditional agricultural cycles. Changing weather patterns have caused smaller and altered root crops (e.g. taro), unavailability of traditional crop varieties (eg. other taro varieties), reduced mango production, and decreased fish population in the river. This has resulted in reduced food insecurity and nutrition within the community.

**Extended summer seasons** have increased heat stress and health concerns among villagers, such as headaches, fatigue and dehydration. Heat stress also reduces labour productivity as farmers cannot work in their fields during heatwaves.

*We have no or very short cold weather. Extended summer has increased diseases ...*

- Women of Waikalou community

## Experience of diverse members of Waikalou community

Diverse Waikalou community members including men, women, youth, and persons with disabilities, each face distinct climate change and disaster challenges.

**Men's roles in** are heavily tied to agriculture and farming. Through this work, men encounter challenges to farming such as loss of land from river erosion and landslides, crop damage due to heavy rainfall and floods, and decreased labour productivity due to prolonged heat stress. Their resilience building efforts primarily involve adopting new farming techniques and exploring alternative income generating activities to cope with shifting climates and frequent disasters.

**Women's roles** primarily involve caring for children and household work. Women are affected by increased risk of children drowning due to the expansion of the river and increased flow during the rainy seasons and floods.

To better prepare for shocks and respond and recover quickly from extreme weather events, women in the Waikalou are increasingly engaging in income generating activities, taking up entrepreneurial roles and exploring alternative livelihood options to increase household incomes.

**People with disabilities** do not access additional disaster preparedness support from community or government agencies. As demonstrated by this Case Study, people with disabilities are often unaware of the support they could avail from government or civil society. The Church provides support such as access to information and resources to people with disabilities, which is encouraging to them.

*I am not aware of any disability groups, or that I have privileges.*

- Person with disability of Waikalou community

**Youth** have similar experiences to that of older generations. Young men in Waikalou community are most often farmers who work together collectively to farm individual plots. As farmers they are affected by changing weather patterns, with increasing extremes of hot, cold and rainy periods. They are increasingly moving their agriculture to higher mountainous areas where soil conditions are more fertile and productive.

Young women are interested to develop income generating activities.

*(Younger) women no longer doing things older women used to do before and taking more responsibilities to run households.*

- Women of Waikalou community

## Community adaptation and resilience

Numerous ways in which the Waikalou community has adapted to climate change and disaster risk were identified during this Case Study.

In response to changing weather patterns and impacts such as top soil erosion due to flooding and heavy rainfall and heat stress which are impacting productivity, there has been a **shift towards an increased focus on alternative income generating activities, beyond agriculture. This adaptation is being led by women.** The NWDG members have been champions of this by supporting- women to take on traditional roles of men as dairy farmers and adopting additional innovative income generating activities such as cheese making, and mushroom farming. NWDG members are also training other women's groups in income generating activities. Men are actively participating in and supporting women's leadership in the dairy business, considering NWDG members' businesses as family enterprises.

*There are women's group in the village and funding for only women's group, so women get these funds and start business. Businesses are often run with help of family members. Women take care of the cows and men milk the cows.*

- Village chief of Waikalou community.

The NWDG has been enabled to develop as a strong organisation within the community through a range of external support. Funding from WFF enabled NWDG to access resources to build strategic and organisational capacity. WFF connected NWDG with Rise Beyond the Reef<sup>2</sup> (a women led non-profit organisation) to provide peer training on organisational development. NWDG has also accessed business training from South Pacific Business Development (SPBD) and agriculture and farming experience in cattle care and pasture management from MoA. The Fiji Cooperative Dairy Company Ltd has also provided NWDG important links to the farming and dairy sector in Fiji.

With agriculture being the main income source in Waikalou community, **farmers described how they have adjusted their farming practices** in response to top soil erosion (from excessive rains and flooding) and heat stress (from increasing temperatures). Farmers are using lime powder and *drala*<sup>3</sup> to restore soil fertility and moisture, planting resilient crops such as sweet potato and yam and introducing new root crop breeds such as ginger. They are also integrating traditional

knowledge and new scientific knowledge, such as traditional weeding methods and using poultry manure for quicker harvests and improved yields compared to past methods.

These **new practices have been enabled through sharing of information from the MoA to farmers.** For example, techniques such as cultivating *vetiver* grass to prevent landslides and soil erosion, implementing integrated farming practices involving mushroom cultivation, and production of vanilla, honey, taro, ginger, and new varieties of root crops. **The information is shared between farmers within the community, enabled through *solesolevaki*<sup>4</sup>.** This sees community members share new knowledge and practices to support other community members and ensure collective progress.

**Farmers are relocating farming lands** from near the village to hill locations, and from the riverside to inland in response to changing soil quality and erosion by the river. Relocations have all been within community-owned land.

Waikalou community members described **shifts in household diets, resulting from changing agricultural practices driven by climate change.** Root crops such as taro are sold to purchase staples such as rice and flour, which are easier to store. Selling produce also provides additional cash to cover village contributions and rising household and farming expenses such as fertilisers and chemicals. While this change in diet, increased household incomes and ensures the availability of food, it also means reliance on external food sources with prices that might fluctuate and, in times of emergencies, might not be available, potentially having a negative impact on the community's resilience.

In response to increasing disaster risks, community has been constructing **stronger and more resilient housing, especially following TC Winston** in 2016. Housing structures have transitioned from bamboo to concrete and houses near the riverside have been relocated inland to mitigate the risk of riverbank erosion and flooding.

*After Tropical Cyclone Winston our priorities changed and our housing structure changed. Our houses are stronger now.*

- Women of Waikalou community.

## Factors Enabling Adaptation and Climate Resilient Development

**An important enabler of community resilience has been Waikalou community members' willingness to change and adapt to climate change and disaster risk.** Community members, especially women, expressed a strong appetite to diversify incomes to respond to increasing household expenses. Farmers also described how they were shifting their farming practices and there was a desire for more

<sup>2</sup> <https://risebeyondthereef.org>

<sup>3</sup> *Drala* is commonly known as tiger's claw or Indian coral tree, a thorny deciduous tree.

<sup>4</sup> *Solesolevaki* fosters a sense of unity among community members, encouraging mutual support and collaboration.



change, from manual to machinery farming. Willingness to change and adapt are key factors in community resilience.

**Inclusion of women as valued income generators** also increases productivity within the community and strengthens gender equality outcomes, which in turn strengthen resilience. Through their contributions in economic activities, men are increasingly valuing women's role in public life including village decision-making.

*Women of the village are running canteens, working on the ginger project (ginger cultivation) and engaging dairy farming... (I advise) men to support women in these businesses. Men are supporting women and contributing in these businesses as family enterprises*

- Village chief of Waikalou community

**Waikalou community members are taking action to protect the environment**, to ensure their own health and wellbeing and continued resilience to climate change and disaster risk. Planting of native trees has been carried out by community members with assistance from the Ministry of Forestry (MoF) to prevent landslides and riverbank erosion. Guided by the Church, community youth members made and installed rubbish bins throughout the village. A solid waste management site has been established which has been inspected by government officials and now used by community for the disposal of household waste, bottles, plastics, and agricultural waste, all contributing to more sustainable waste management.

### Barriers of Adaptation and Climate Resilient Development

The Case Study identified two key barriers to building resilience in Waikalou community.

**There were limited connections between village decision-making and Provincial Council.** There are plans in place for improving coordinated disaster response and recovery efforts and appointing dedicated individuals with agreed roles including for youth, who were part of village emergency committees. However, there was inconsistent awareness of local disaster arrangements amongst community members. Women especially described not knowing about such decision-making processes and structures, suggesting the need for greater engagement of different members of the community in decision making.

*Village meetings are inclusive of village women, women representatives are supposed to voice community women's needs... but not all women know about it and get to know updates from the meeting*

- Women of Waikalou community

**Community members reported limited coordination and access to information and resources from Provincial Council to community levels.**

Community members has suggested that there is a need to improve information flows from Provincial to community levels. The heavy workload of provincial and district staff, who oversee multiple villages, often leads to gaps in information flows from village-district-provincial levels. For example, one Naitasiri Provincial Conservation Officer is responsible for 16 districts and 91 villages. When these responsibilities were explained to village members during the Case Study process, one woman described this as new information and she described a new appreciation of all the work the Provincial staff do. emergency



*The NWDG leader from Waikalou community is showing the land leased for dairy farming by NWDG members [Photo credit: Elesi Nailati, WFF]*

### Community priorities

During Case Study activities, community members identified strengths that have enabled their past experience of responding to climate change and disaster risk. Figure 2 illustrates eight strengths identified by Waikalou community members.

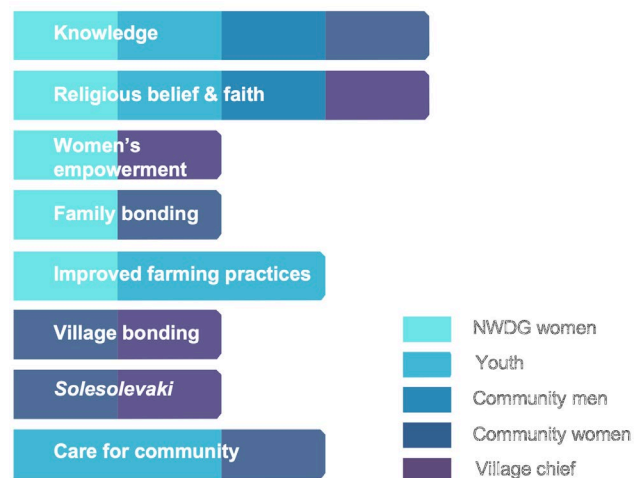


Figure 2: Eight strengths contributing to community resilience in Waikalou community



A male member is drawing a community map to decide the route for Transect Walk. The walk was part of the Case Study data collection process [Photo credit: Elesi Nailati, WFF]

**Knowledge** shared from external stakeholders such as MoA, the Naitasiri Provincial Council and WFF was described as a key contributor to resilience. Knowledge shared internally within the community, was also described as important. For example, the NWDG sharing information about entrepreneurial and income generating activities with women in the community, farmers sharing information with each other about alternative land and crop management.

Among the eight strengths described by community members as enablers of past community resilience, four are directly related to community's interdependence and relationships: **family bonding, village bonding, solesolevaki and care for community**. These are all central to community response to climate change and disaster risk, and are seen in the examples described above including working together to build stronger and more resilient houses following TC Winston; and communal sharing of information about new farming methods and opportunities for entrepreneurial income generating activities. Connections through the village Church provide the basis for care and support.

*The strength of the village is that it cares for you, the church, your family, other farmers – you are never alone*

– Male Youth of Waikalou community.

Waikalou community members described **aspirations for strengthened community resilience** to climate change and disaster risk, building from their past experience and strengths. Through workshop conversations, faith, knowledge, *solesolevaki* and women empowerment were prioritised by different groups (women, men, youth and government stakeholders) as foundations to continue to strengthen resilience to climate change and disaster risks in the community. Faith is informed by the strong role of the Church in the community.

These aspirations are unique to Waikalou community, though may be considered indicative of other rural villages in Fiji.

Knowledge describes information and learnings accessed from outside the community most notably through the MoA related to dairy and agriculture activities and innovative, entrepreneurial income generating activities, especially for women and supported through the WFF and NWDG

partnership. Knowledge also includes sharing of information within the community, within women's groups and male farmers. Youth farmers also described how they work as a group on each of their individual land plots and through this practice share with each other different techniques and practices and market price information.

*Solesolevaki* is valued as a connector which promotes the mutual care and support of all community members. For example, village cleaning days, where all members participate, ensure that drainage systems are kept clean of debris. People with disability in the village are supported through home visits from Church members.

Women's empowerment describes women's shifting role in the public sphere and the household, as they take on traditionally male roles in income generating activities and also decision-making at village and higher levels of governance. This has been championed by NWDG members who are represented from villages across the Naitasiri Province.

Figure 3 represents the existing strengths prioritised by the community to continue in the future to strengthen resilience to climate change and disaster risk. The four major strengths categorised into four spheres, with each sphere's size reflecting the volume of votes from different groups prioritising these strengths. The bubbles inside the spheres correspond to different groups who voted for the strengths. Larger bubbles represent a higher number of votes received, indicating greater priority. Whilst both men and women described how men in the community were increasingly supportive of women's role in income generating activities, women's empowerment was only prioritised by women representatives of the community wide workshop. Increasing access to knowledge and *solesolevaki* were most commonly described across the different groups. Notably government representatives prioritising *solesolevaki* like other community members demonstrates its value to support the delivery of government-led initiatives in the community.

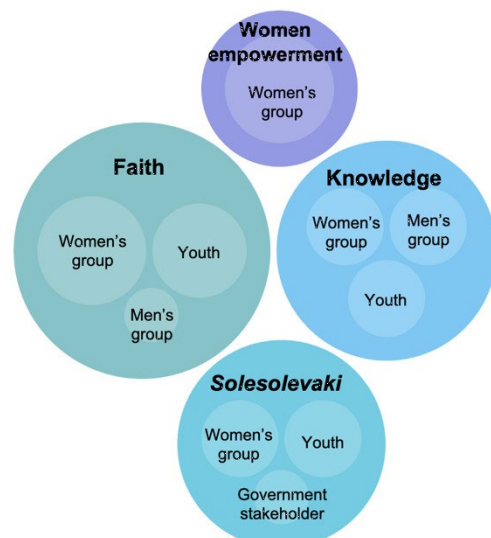


Figure 3: Community strengths in Waikalou community that can enable future resilience to climate change and disaster risk.

## Insights and recommendations

This Case Study has identified recommendations and pathways for development programs to enhance community resilience:

**Leverage traditional and cultural practices.** *Solesolevaki* is considered a key strength and basis for resilience within the community. It has underpinned successful adaptation and resilience building (including as described above regarding pasture management and TC response and recovery). Recognising and engaging with these traditional and cultural values, norms and practices as a starting point or foundation for climate resilient development should be considered essential. Working with, through and in support of systems such as *solesolevaki*, including the provision of information, technical support and other supporting strategies can serve as the foundation for successful adaptation efforts.

**Foster economic empowerment opportunities.** The NWDG has created an increased appetite for new income generation opportunities, especially among women in the community. Development partners seeking to support adaptation and resilience should consider how this latent demand and interest within communities can best be enabled by, for example, supporting economic empowerment and income diversification as well as via complementary information and technical support. Integration of women's economic empowerment<sup>5</sup> into other priority issues related to climate change, such as agriculture, fisheries and coastal management provides useful entry points. Integrated approaches provide an important foundation for household and community resilience.

**Support broad community resilience to enable community defined adaptation and resilience pathways.** This case study demonstrates how communities are already adapting to climate change, often through initiatives not explicitly focused on climate change and disaster risks. NWDG - a local women's dairy enterprise cooperation - plays a significant role to strengthen community resilience and foster climate resilient development. By increasing and diversifying community income, the NWDG empowers communities to better prepare for, respond to, and recover from sudden shocks. NWDG also influences shifts in social dynamics, leading to more gender inclusive decision-making processes. By supporting holistic and broad resilience investments, development partners can therefore also support climate and disaster resilience in communities. Investments with holistic perspectives can facilitate communities to identify their own adaptation and resilience pathways, as demonstrated by NWDG.

**Prioritise greater focus on disability:** This case study identified limited involvement of persons with disabilities in resilience building efforts, and limited access to resources and information that could support themselves and their households. Development partners should consider working in partnership with people living with disability organisations (DPOs) such as Fiji Disabled Persons Federation to ensure genuine inclusion with the principle of 'leave no one behind'. This will create opportunities for local DPOs to advance towards their organisational vision, increase outreach and improve their capacity and resources as independent entities. Inclusion could include focusing on building capacity such as supporting people with disabilities to access climate-disaster information and enable them to actively engage in climate decision-making processes.

**Influence governance systems to effectively contribute to community resilience:** This case study highlights a disconnect between national and sub-national governance and community (village) level leadership and decision-making as a barrier to community resilience. Community members are not aware of various initiatives and resources provided by government. Likewise, government officials face challenges to resource community priorities due to limited resourcing and staffing levels required to cover large population levels.

Development partners can play a pivotal role in bridging this gap by facilitating dialogue between formal governance structures and community levels, utilising existing provincial governance frameworks. Two-way dialogue can ensure that government policy is being effectively implemented and realised by community members and that community experience informs government policy. This is critical to enable Pacific governments to progress climate action commitments. Development partners can also consider working with local civil society organisations and village coalitions to facilitate inclusive consultations with diverse communities, to ensure effective and inclusive government-community engagement.



*Community members gather to share a meal, showcasing the importance of tradition and unity. [Photo credit: Elesi Nailati, WFF]*

<sup>5</sup> Women's Economic Empowerment Synthesis Report: Informing the Pacific Women Shaping Pacific Development Roadmap 2017-2022.