Climate Resilient Islands Programme

Case Study: Community Seasonal Calendars and Changes, Fiji

Communities participating in the Climate Resilient Islands programme were asked to map out or illustrate a seasonal calendar, listing natural events throughout the year and changes relating to gardening, agriculture and natural resources. Communities also listed observed changes in these seasons and what they believe has caused these changes. This case study explores commonalities across the communities in Fiji. There is a general trend across communities of hotter temperatures, longer dry periods and more intense weather events such as storms.

Knowledge of seasons

Fiji communities have a broad and deep knowledge of the seasons, which includes flowering and fruiting times of local plants, appearance of or breeding seasons of various local wildlife and livestock, best times for planting crops, changes in weather patterns and signs of impending bad weather. This is one area where local Indigenous knowledge remains strong, although communities have expressed concern that some of this knowledge was stronger in the past.

Changes to seasonal calendars

Across communities there is general agreement about increased temperatures and weather patterns being less reliable/predictable.

Five communities reported that temperatures have increased in general. Two communities noted that maximum temperatures have increased during the hot/wet season. One community reported that during the dry season, when temperatures are generally lower, day-time temperatures are on average warmer. Comments about temperatures included the following:

There is general increase in temperatures all year round, making hotter days.

Temperatures are generally hotter than in the past, with more extreme temperature days. Hotter days cause wilting and stunting of crops.

Communities also noted that a result of higher temperatures is decreased crop yield and wilting of crops.

A possibly related phenomenon is that the wet season arrives later, making for longer dry seasons, as reported by three communities. In contrast, three communities noted that the wet season has become wetter, with more intense rainfall. According to some communities and against some predictions, the more intense wet season has also brought both more frequent and more intense cyclones, which in turn produces more flooding and damage. At least one community noted that cyclones have affected reefs and therefore reduced their tidal surge moderation capabilities, producing more coastline erosion.

Cyclones are more frequent and intense, causing more damage. Rainfall events are heavier. Higher floods.

Changes in weather patterns have affected the flowering, fruiting and growth of crops, and, at times, the availability of natural resources such as seafood. Increased scarcity of resources has also been tied to overharvesting.

Three communities noted that seafoods, such as crabs and various fish species, have decreased, while one community noted that mackerel, against the trend, are one species increasing in number.

Communities noted significant shifts in flowering and fruiting times. This affects yields positively and negatively, depending on resource.

Two communities noted that local reeds flower earlier, as does the tiger claw plant. Two communities noted that chestnuts flower and are harvested earlier. But one community noted that in the past two years some chestnuts have flowered but not yielded. Something similar was observed by two communities in relation to mango trees, with the trees flowering but not fruiting. Coconuts were observed by two communities to be yielding less and producing smaller fruit.

Five communities observed that breadfruit used to fruit at certain times of the year, but now breadfruit are available all year round. Two communities noted that rose apples flower twice, rather than once, a year. Two communities commented that leafy vegetables are available longer throughout the year. But yields are down, and increased pests have also been observed.

Overall, there is more unpredictability in weather patterns and availability of resources. Extreme weather places more stress on resources. While some resources are more abundant, a trend is towards lower yields and more potential damage to crops through increased extreme weather. Nature-based solutions have the potential to increase the variety and yield of crops and provide mitigation of increased floods, erosion and dry periods.

Resilience planning

Documenting seasonal calendars and understanding changes informs the next phase of the CRI programme – establishing community resilience plans, which involves noting assets most at risk, especially from the impacts of climate change, community capacity for making changes and strategies for increasing resilience.

Climate Resilient Islands aims to strengthen community resilience and adaptive capacity to the impacts of climate change through nature-based solutions working with rural communities in Vanuatu, Fiji, PNG, Tonga, and Tuvalu. The project is a New Zealand Ministry of Foreign Affairs and Trade initiative implemented by Live & Learn Environmental Education

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