

## **PAPER 2: COMMUNITY ATTITUDES TO ECOSYSTEM BASED ADAPTATION IN PORT RESOLUTION**

**Village communities might have very different expectations and aspirations towards environmental and social change, natural resource management and economic opportunities, which will have important implications on taking an ecosystem based approach to climate change adaptation. This study surveyed the community of Port Resolution, on Tanna, to gain insights into these attitudes.**

### **1 INTRODUCTION**

Communities in Pacific Small Island Developing States (SIDS) face chronic threats to management of their natural resources, exacerbated by climate change-related risks. They also face social change and economic transition. Ecosystem-based adaptation (EbA) provides opportunities for communities to adapt to climate change. EbA deploys habitats to enable ecological functions to assist adaptation.

Port Resolution is a subsistence farming and fishing community on east coast of Tanna. All community members undertake in their own food production. There is a small amount of cash-based tourism activity. The community and its resources are under pressure from falling agricultural and reef fishery productivity, population growth and impacts of climate change, including extreme weather and warming and drying.

We used Q-methodology (hereafter: Q) to reveal discourses, both within a community on Tanna and amongst stakeholders with knowledge of the challenges in the community to ascertain the barriers and enabling factors for implementation of EbA. Q is both a quantitative and a qualitative, based on statistical analysis of individuals subjectivity. It looks for correlations amongst subjects' views; these correlations reflect mindsets that are analogous to the structure of a discourse. Discourses are considered both external to individuals (they act on people) but are also emergent of collective heuristics of people – people and power structures actively shape them.

People are consistent and coherent in their view points and it is likely that people of a particular mindset think about distinct issues in a consistent way.

Q facilitates the ordering of subjective viewpoints into clusters, elicited by asking respondents to sort statements onto a grid, ranking them from most to least negative, or salient. Commonly, the statements are placed in a quasi-normal

distribution, so there are fewer statements at the extremes, resulting in the respondent having to apply a higher cognitive load whilst sorting.

Analysis of the card sorts looks at the relationship between the placement of the cards as a whole, particularly those at the extremes. Where there is sufficient correlation between respondents' sorts, this can be used to generate an 'ideal sort', or factor, of, theoretically, any number of discourses.

These 'ideal' sorts are then further subjectively described by the analyst to provide rich, contextual insight in dominant perspectives of a given inquiry.

#### **1.1 Research focus**

We set out to shed light on the following issues:

1. To understand constraints and enabling factors for implementation of ecosystem-based adaptation.
2. Find discursive commonalities and/or differences to inform how and where development-focused activities can be targeted.
3. Identify issues for where there is community consensus, contention or ambivalence.
4. Identify language and metaphors best-suited to communicating with community.

### **2 DOING Q METHOD ON TANNA**

Q method has challenges in developing world contexts, where there is potential for poor task comprehension and low literacy. Our research was innovative (and potentially unique) in combining conceptual sketches with worded issue statements (in Bislama). Examples are shown overleaf.

Figure 1: Example sorting cards (in English)



Q uses strategic sampling of respondents, rather than large, randomised samples. Finding sufficient respondents was achieved through recruiting motivated local research assistants and by being highly-visible in the village. A small care package was used as a reward.

Community members undertook the card sorting task diligently and with humour. We will report back to the Port Resolution community in early 2020.

Figure 2: Surveying community members in Port Resolution



### 3 RESULTS

We found 3 key factors, or discourses.

#### 1. Strong kastom

Emphasis on traditional and customary practices and a preoccupation with concerns around the sustainability of provisioning ES and, to a slightly lesser extent, regulating ES. Important statements are all in some way associated with kastom decision-making and kastom resource management. The statements connected with passing-on natural resources, knowledge, and customs down to future generations and concerns around garden productivity and managing fisheries were highly salient. There is a low emphasis on economic development opportunities associated with monetising cultural ES and the infrastructure that supports this and with elements associated with 'modernity', such as access to financial services, electricity and voting and health. Statements related to childhood education were ranked neutrally.

#### 2. Kastom + Health

Again, there is emphasis on traditional and customary pre-occupations but have a generally lower concern with the sustainability of provisioning ecosystem services. However, importantly, they demonstrate a strong affiliation with modern health care WASH concepts. A single economic development statement appears at +2, indicating this perspective is a little more open to exploring income-generating opportunities, but not strongly so. This factor placed the highest salience on concern for extreme weather, associated with climate change. Three key kastom-related statements associated with sustaining traditional practices in the management of resources and practices remained salient. Similar to Strong Kastom, respondents show less affiliation with statements associated with broader social change, such as access to information and financial services, economic development and voting. Statements related to childhood education were ranked neutrally.

#### 3. Tentative Modernity

Factor has a strong affinity to certain elements of kastom and customary management of resources, however, one of these kastom-related statements is related to more ceremonial cultural practices associated with retaining knowledge of dances and songs, rather than social relations between contemporaries. Distinguishing this factor is the greater affinity with cultural ES, demonstrating a desire to capture value from nature, through tourism opportunities, with the exception of a single outlier. The two health-related statements together also ranked relatively highly. In addition, and importantly, two female emancipatory statements are ranked highly. Regulating services are generally ranked lower. The affinity to economic development and emancipatory concepts signifies a desire for modernisation towards an exchange-based economy, however, the connection to kastom shows this affiliation is tentative. Statements related to childhood education were ranked neutrally.

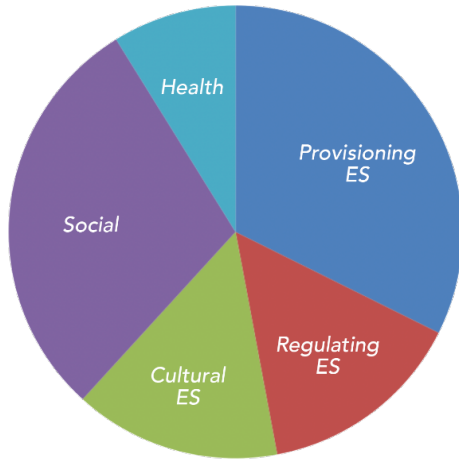
## Consensus statements

Statements shared by all factors within a single score of each other are consensus statements. They represent potential starting points for community engagement. Our analysis

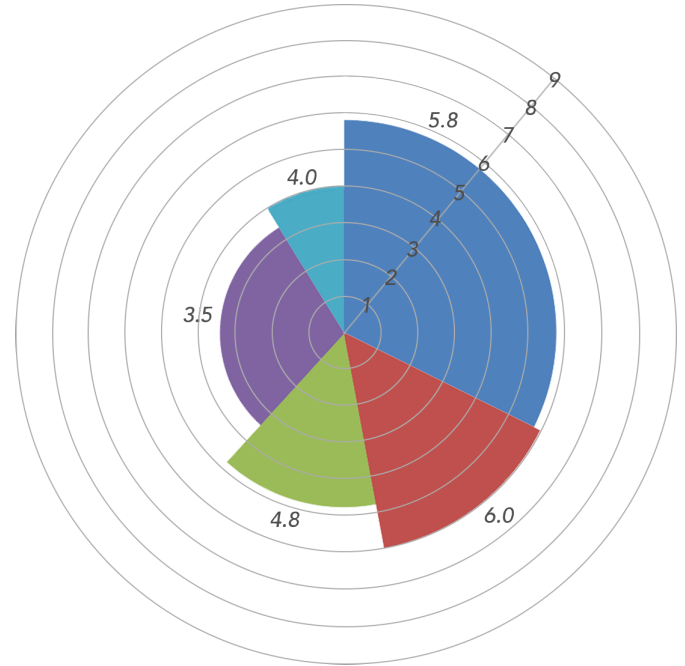
revealed six, including protecting reefs by catching fish further out to sea, access to sufficient drinking water, concern about non-biodegradable waste disposal and access to micro-finance. These statements represent potentially useful and discreet community development projects in support of EbA.

Factors represented as spie charts, indicating the representation of each statement in our initial categorisation of (i) provisioning ecosystem services; (ii) regulating ecosystem services; (iii) cultural ecosystem services; (iv) health; and (v) social issues. The relative share of the pie is a representative of the number of statements in each category. The concentric scale is representative of the score given to that statement in each of the factors

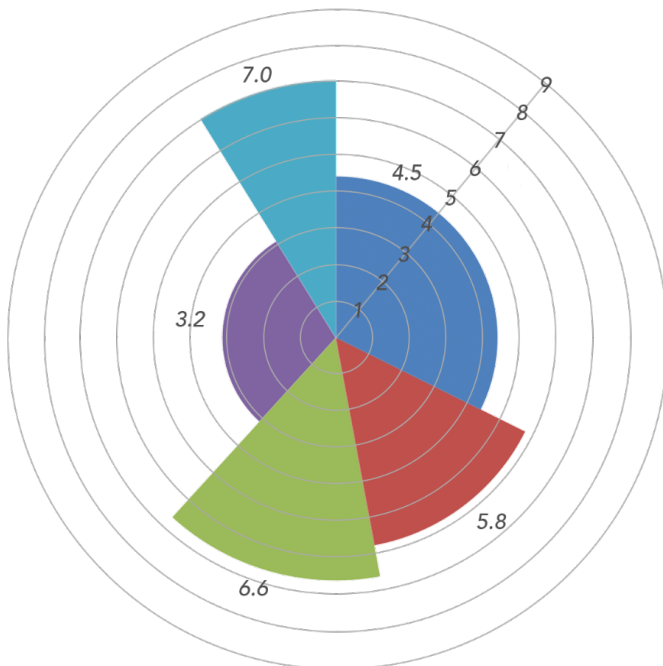
Legend



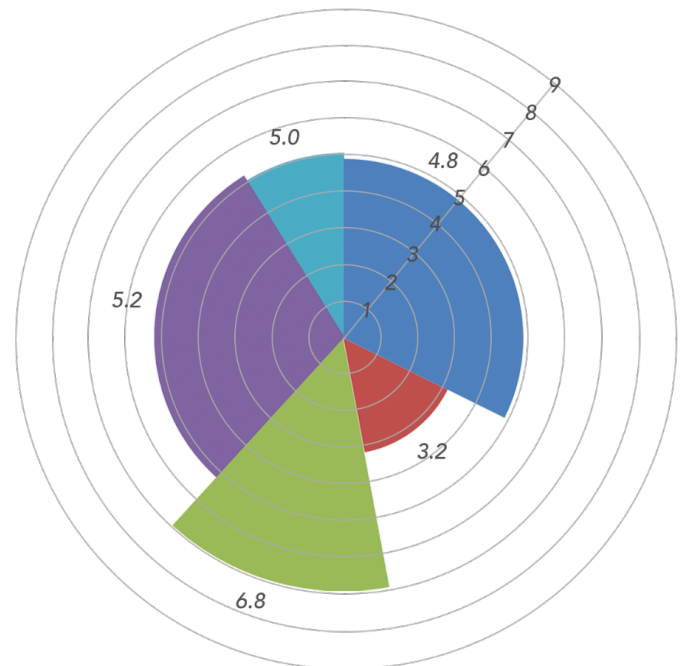
Factor 1: Strong Kastom



Factor 2: Kastom + Health



Factor 3: Tentative Modernity



## 4 DISCUSSION

### 4.1 Gender affiliation to discourses

Strong Kastom was significantly skewed towards men. Kastom + Health) was weighted relatively equally; and Tentative Modernity was skewed towards women. This infers men have a higher affinity to traditional and cultural aspects of village life and women have a greater affinity towards change and the opportunities economic development presents.

We undertook further categorisation of statements and placed them into three new categories: (i) Traditional; (ii) Economic development and emancipatory; and (iii) Other. Though all factors showed an affinity towards Tradition, Strong Kastom had a significant skew towards Traditional statements (unsurprisingly) and very low affiliation with Economic development and emancipatory statements. Conversely, Tentative Modernity had a greater affinity to Economic development and emancipatory statements.

We conject that women see economic activity associated with monetising the comparative advantages of Port Resolution's cultural ES as an emancipatory strategy, which will recalibrate their role in the community. However, attachment to the tenets of kastom still remain influential in this factor. In our regression, the P-value for gender as a driver of factor membership was significant (0.36).

Our research demonstrates that activities that support economic development and support emancipatory concepts that might challenge some elements of kastom, may experience differences in support based on gender.

This suggests a gender-based fault line between the discourse of emancipation from traditional decision-making and divisions of labour through the vehicle of economic development and the contrasting preoccupation with kastom and kastom management of natural resources as a discourse in the service of maintaining pre-existing power structures.

### 4.2 Differences between community and non-community members

We also looked at the contrast between community members and respondents from outside the community (from NGOs, IGOs, and academia). Community members had a significantly stronger affiliation to Strong Kastom than non-community members, whilst non-community members had a conversely stronger affiliation to Kastom + Health. However, most significantly, there were no non-community members identifying with Tentative Modernity.

This suggests there is a discord between outsiders' understanding of the view community members take (especially women) on the role economic development in improving well-

being. Non-community members (including external experts and programme officers from IGOs/NGOs) are reluctant to consider prosaic economic development pathways towards a cash-based, labour-specialised exchange system as a completely positive pathway.

Whilst the propensities for particular sorts referred to above provide evidence that different classes of respondents load into factors, using Q we cannot always deduce with significant statistical certainty that this will be the case.

### 4.3 Acceptability of EbA

Our research shows EbA would not likely face social and cultural constraints in the Port Resolution community.

### 4.4 Low scoring statements

The purpose of Q is not to consider statements in isolation (as if were a R-type survey), however the process of doing so can elicit useful information. Two statements scored consistently low: cooking with an alternative to firewood and being free to vote in elections. In addition, there was relative consensus in this low scoring.

This suggests local decision-making (at the Nakamal) is of great importance. The community is empowered to make decisions with their own resources, therefore formal government remains unimportant.

## 5 CONCLUSIONS

The following conclusions can be drawn from this study:

- Likely a general preference for climate change adaptation based on ecosystem-based projects that provide indirect adaptation benefits + co-benefits.
- Projects need to be sensitive of the importance of kastom resources management and knowledge.

*But...*

- Projects that support economic development (and challenge kastom) may experience differences in support based on gender.
- Infrastructure provision and formal institutions (government) are considered unimportant.

## MORE INFORMATION

The information in this brief is a summary of a fully referenced published research paper 'Social benefit cost analysis of ecosystem-based climate change adaptations: a community-level case study in Tanna Island, Vanuatu', in *Climate and Development*, at <https://doi.org/10.1080/17565529.2019.1642179>

