Chapter 5
Vulnerability to What?
Multidimensional Poverty in Melanesia
Matthew Clarke, Simon Feeney and Lachlan McDonald

5.1 Introduction

Defining poverty as a lack of income is intuitively attractive and dates back to the earliest work on poverty in England during the nineteenth century (see Booth, 1887; Rowntree, 1902). From an individual's experience, income affords us the freedom to purchase our basic needs and many of our desired wants. Further, having money facilitates choices about the things we desire (whether they are good or bad for us). In economic terms, our utility (or happiness) increases as consumption increases by the simple fact that purchasing a particular commodity reveals our preference (belief) that this commodity will increase our utility. Thus the more we purchase, the greater our utility. As having unlimited desires is said to be a human characteristic, an increase in income therefore increases our ability to maximize our utility. Conversely, having less money reduces our ability to consume and lowers our utility. At the extreme, an income below a certain level means that even the basic needs of food, shelter and clothing cannot be adequately met. Then an individual, or household, can be said to be experiencing poverty.

However, the relevance of income-based poverty to Melanesian countries is disputed. With strong family and social support networks, outright destitution has been rare and the term hardship is preferred over poverty (Abbott and Pollard, 2004). With ongoing debates about the specific nature of poverty in these contexts, assessing poverty and developing policy responses is challenging. It has been considered, for example, that Melanesians live in an environment of 'subsistence affluence', unburdened by modern economic problems. As such, income-based assessments of poverty have largely been considered irrelevant or, at best, unsuitable. However, with the considerable changes wrought by increasing monetization and urbanization 'subsistence affluence' has arguably become redundant for many Melanesian societies. Malnutrition and hunger exist, with households relying on cheap, sometimes poor quality imported food and sometimes missing meals. Monetization is increasing the importance of an income to enable the payment of school fees and the purchase of staple household goods and services in order to meet the basic needs of the family.

Poverty is now universally recognized as being multidimensional in nature. A multidimensional approach is certainly relevant to Melanesia where it would
be inadequate to measure poverty without consideration of access to health, education, clean water and sanitation, housing and access to markets, as well as other factors which impact on a household's ability to meet its cultural obligations. Vulnerability to poverty — the likelihood, or risk, of being poor or falling into poverty in the future — is an increasingly important concern for policymakers in Melanesia.

This chapter uses the data from a household survey conducted in the Solomon Islands and Vanuatu in 2010–11 to calculate a Multidimensional Poverty Index (MPI). The survey was conducted in 12 diverse communities in the Solomon Islands and Vanuatu and was specifically designed to measure the incidence and depth of poverty (see Chapter 1 for further details on the household survey). We replicate the MPI, developed by the Oxford Poverty and Human Development Initiative (OPHI) (Alkire and Foster, 2011a). The MPI measures a number of deprivations that a household experiences. More specifically it calculates the percentage of households that experience overlapping deprivations in three dimensions: education, health and living conditions. The index is widely regarded as a useful measure of poverty and country level values are now published in the annual Human Development Reports of the United Nations Development Program (UNDP). However, as the creators of the index acknowledge, it can be modified to better reflect the living conditions and livelihoods of specific country contexts. The chapter therefore proceeds by augmenting the MPI with information on access to a produce garden, health, education services and local markets, important to the context of Melanesian communities. The augmented index is referred to as the Melanesian MPI (or MMPI). In the case of Vanuatu, the analysis complements MNCC (2012) which examines alternative indicators of wellbeing. The MNCC report focuses on self-reported happiness and life satisfaction and correlates these scores with resources access, measures of culture and community vitality.

The remainder of this chapter is structured as follows. Section 5.2 outlines how poverty is measured before Section 5.3 examines the findings from constructing the MPI and the tailored MMPI using the household survey data. Finally, Section 5.4 concludes with some policy recommendations.

5.2 Measuring Poverty and Well-Being

The shift from understanding poverty as being based largely on income deficits to be more encompassing of different dimensions of well-being has now been universally accepted. Sen has been influential in shifting this conceptual understanding, along with work such as Nussbaum's central human capabilities, Doyal and Gough's intermediate human needs, and Narayan, et al. identifying axiological needs, among many others (Sen, 1984, 1993; Nussbaum, 1988, 1992, 2000; Doyal and Gough, 1991; Narayan, et al., 2000). In response to this conceptual shift, there have been three significant developments in assessing poverty and human well-being: the Human Development Index (HDI), the international
community’s commitment to the Millennium Development Goals (MDGs) and the recently devised MPI. Each is discussed in turn.

5.2.1 Human Development Index

The HDI is a composite index based upon Sen’s concept of capability (UNDP, 1990; 2011). Combining proxy indicators associated with education, health and living standards, the HDI was initially established to counter the hegemonic status of national income as the default measure of human well-being. As demonstrated by Table 5.1, there are significant differences in the HDI across the Pacific region. At one end, Palau and Tonga are classified as having high human development (scores in 2011 of 0.782 and 0.704 respectively), putting them on par with the Latin American countries of Uruguay and Mexico and European Montenegro and Romania. At the lower end of human development in the Pacific, are Papua New Guinea and the Solomon Islands (with scores in 2011 of 0.466 and 0.510 respectively). Indeed, Papua New Guinea is ranked 153 (out of 186) countries and is one of four non-African countries at the bottom-end of the HDI rankings (along with Nepal, Afghanistan and Haiti). This suggests that Papua New Guinea significantly lags behind its regional neighbours Kiribati, Samoa, Fiji, and Vanuatu which are all classified as experiencing medium human development.

Generally countries across the Pacific, including Papua New Guinea, have seen improvements (albeit sometimes small) in their HDI scores over time. This indicates at least some progress is being made in improving well-being.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Federated States of Micronesia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiji</td>
<td>0.668</td>
<td>0.678</td>
<td>0.687</td>
<td>0.688</td>
</tr>
<tr>
<td>Kiribati</td>
<td></td>
<td></td>
<td>0.621</td>
<td>0.624</td>
</tr>
<tr>
<td>Palau</td>
<td>0.774</td>
<td>0.788</td>
<td>0.779</td>
<td>0.782</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>0.423</td>
<td>0.435</td>
<td>0.462</td>
<td>0.466</td>
</tr>
<tr>
<td>Samoa</td>
<td>0.657</td>
<td>0.676</td>
<td>0.686</td>
<td>0.688</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>0.479</td>
<td>0.502</td>
<td>0.507</td>
<td>0.510</td>
</tr>
<tr>
<td>Tonga</td>
<td>0.681</td>
<td>0.696</td>
<td>0.703</td>
<td>0.704</td>
</tr>
<tr>
<td>Vanuatu</td>
<td></td>
<td></td>
<td>0.615</td>
<td>0.617</td>
</tr>
<tr>
<td>Pacific</td>
<td>0.479</td>
<td>0.490</td>
<td>0.508</td>
<td>0.511</td>
</tr>
</tbody>
</table>

5.2.2 Millennium Development Goals

In 2000, 189 nations committed themselves to the achievement of a number of development targets known as the MDGs. In so doing the international community indicated an intention to address the poverty afflicting billions of the world’s population. Emanating from a number of international conferences held throughout the 1990s, the MDGs are designed to address many of the multidimensional aspects of poverty. The eight goals: (i) eradicating extreme income poverty and hunger; (ii) achieving universal primary education; (iii) promoting gender equality; (iv) reducing child mortality; (v) improving maternal health; (vi) combating HIV/AIDS, malaria and other diseases; (vii) ensuring environmental sustainability; and (viii) developing a global partnership for development are to be assessed against 18 targets and 48 indicators. The international community set 2015 as the year by which these global targets are to be achieved using 1990 as a baseline.

The value of the MDGs is not only that they identify a series of goals with agreed targets and indicators, but also that they set a timeline for their achievement. Indeed, this was the first time the international community had set itself a date by which improvements in well-being would be achieved and for which members would be held to account.

The importance of the MDGs cannot be overstated. There is little time before 2015 – the end of the MDG timeline – and it is increasingly clear which goals will be achieved and which will be missed. The Asia-Pacific region, for instance, is often reported to be making good progress towards MDG achievement but the region is extremely diverse and analysis at the regional level masks significant differences in the progress of individual countries.

It has become common practice to assess country-level progress against the global MDGs. This often results in a summary statement of whether a country has ‘achieved’ a goal, is ‘on-track’ or ‘off-track’ in terms of its progress, providing a quick overview of how a country is progressing towards the MDGs and targets. Such an approach, using national averages, masks gendered progress, sub-regional or ethnic disparities and other inequities and has stimulated criticism of the assessment of specific countries against global targets (Feeny and Clarke, 2009; Vandermoortele, 2009, 2011).

Using this approach, however, it is increasingly apparent that Pacific countries, in general, have made very limited progress towards achieving the development targets. According to the Pacific Island Forum Secretariat (PIFS), the 15 Pacific Island Forum member nations are off-track to achieve all goals (PIFS, 2011). Note, however, that progress on the goal in regard to global partnerships (MDG 8) is not explicitly assessed as its premise is that ‘the developing nations would focus on achieving the first seven goals, while developed countries would support these efforts through increased aid, fairer market access and debt relief, as well as ensuring affordable essential drugs and information communications and technology’ (PIFS, 2011, p. 8).
The Polynesian sub-region is the best-performing of the Pacific, on-track to achieve the global targets of MDG 2 (education), MDG 4 (child mortality reduction), MDG 5 (maternal health) and MDG 7 (environmental sustainability). For Micronesia as a whole, the results are mixed for all goals, other than eradicating extreme income poverty and hunger (MDG 1) for which the entire regional group is off-track. Melanesia is performing worse by these measures, and as a whole is off-track to achieve any of the global targets. However, if Papua New Guinea is excluded, then the prognosis for the rest of Melanesia is less bleak, being off-track to achieve gender quality, on-track to achieve child mortality reduction and experiencing mixed results for the remaining goals.

Off-track for them all, Papua New Guinea is the least likely of all countries within the region to meet any of the goals. In this regard, the Solomon Islands is the second poorest performing country in the region. The overall analysis remains very similar, in terms of countries at risk and countries doing well when using the slightly different Australian Agency for International Development system to categorize progress (AusAID, 2009).

However, as noted, the discussion of individual nation goal achievement is not appropriate. The targets were, in the majority, based upon the extrapolation of global trends rather than on progress at an individual country level (Vandermoortele, 2009). The relevance of the MDGs to the Pacific region also requires consideration. It may be that the goals are not specifically suited to the economic, social and geographical characteristics of these small-island states. Indeed, the original concept of the goals as global targets was lost immediately following their adoption so that much attention is now paid to distinct countries, rather than these countries being assessed against their contribution towards the achievement of global targets (Vandermoortele, 2011).

Thus, while it might be sound for the world as a whole to aim to halve the proportion of the population living on less than US$1.25 per day, extending previous trends at the global level, is it an appropriate target for a country without a history of such improvements? Similarly, unique cultural circumstances may make the focus on certain goals and targets inappropriate for some regions or places. It is also important to note that it is possible for countries to tailor the MDGs to their own circumstances. As development goals are important, rather than reject them because they are not completely aligned to existing development plans, or are unlikely to be achieved, the answer lies in tailoring them to specific country contexts. What essentially matters is the existence of appropriate, mutually agreed targets that governments and the international community can work towards (Feeny and Clarke, 2009).

A tailoring of the MDGs has been supported by Pacific nations within the Port Vila Declaration on Accelerating Progress on the Achievement of the MDGs. Papua New Guinea, for example, has tailored the goals, making some targets less ambitious but more realistic for achievement by 2015 (Feeny and Clarke, 2009). The purpose of this discussion is to point to the necessary nationalization of international development measures and plans.
Data availability is a considerable constraint in assessing well-being within the Pacific. With scarce resources available to collect national data from small, geographically dispersed populations, the ability of small-island states to collate and analyse data is limited. For many Pacific nations, data collection has been given a low priority due to both its expense and high technical requirements (Feeny and Clarke, 2008, 2009; PIFS, 2011). Information is often out dated, incomplete or entirely unavailable. This data difficulty is long-standing and recognized by donors and Pacific Island governments alike. Real progress towards the MDGs by Pacific Island nations is therefore difficult to measure as doing so requires accurate and comparable data both across time (inter-temporal) and across space (interspatial). The only two Pacific countries with data available for the MDG headline indicator of halving the proportion of population on less than US$1.25 per day are for the Federated States of Micronesia (FSM) and Papua New Guinea.

5.2.3 The Multidimensional Poverty Index

Approaches to measuring both development and poverty have widened to incorporate the knowledge that low income does not account for the array of possible achievements that characterize development, nor for the array of deprivations that characterize poverty. Following Sen’s conceptual work and utilizing improved availability of data, there has been increased interest within the literature on moving beyond the common monetary-based headcount of poverty to develop a multidimensional measure (Kakwani and Silber, 2008). Yet, while the multidimensionality of poverty is no longer disputed, there is not a full consensus on how multiple dimensions should be captured and assessed. Nor will there ever be.

The MPI is perhaps the best known of recent efforts in this field, and is certainly the most widely applied, having now been estimated for more than 100 countries (Alkire and Foster, 2011a). Alkire and Foster took as their starting point the contention of Bourguignon and Chakravarty that a ‘multidimensional approach to poverty defines poverty as a shortfall from a threshold on each dimension of an individual’s well-being’ (Bourguignon and Chakravarty, 2003, p. 25). Thus, the MPI considers three equally weighted dimensions of poverty through ten indicators. However, Alkire and Foster qualify this since, ‘the poverty status of a person is unaffected by certain other changes in achievements. For example, a poor person can never rise out of poverty by increasing the level of non-deprived achievement, while a non-poor person will never become poor as a result of a decrease in the level of a deprived achievement’ (Alkire and Foster, 2011a, p. 485).

The key value-added of a rigorously implemented MPI is that it conveys additional information not captured in single-dimensional measures, on the joint distribution of disadvantage and the composition of poverty among different multiply-deprived groups. ‘Such an index also provides a consistent account of the overall change in multidimensional poverty across time and space as a
supplement to single-dimensional measures, which should not be abandoned’ (Alkire, 2011, p. 4)

The MPI includes more non-income indicators than the HDI. Further, while the HDI was intended to be used to measure the overall progress of a country’s development, the MPI is concerned exclusively with a particular segment of the population, excluding information about the non-poor. The MPI identifies those who are poor through a two-step process involving identifying cut-offs of deprivation. ‘The first is the traditional dimension-specific cut-off, which identifies whether a person is deprived with respect to that dimension. The second delineates how widely deprived a person must be in order to be considered poor’ (Alkire and Foster, 2011a, p. 477). In this way, the MPI simultaneously concerns itself with how many people are experiencing poverty as well as how much (or the depth of) the deprivation is being experienced.

Two key properties mean that the methodology of the MPI can be seen to satisfy both Sen’s view that poverty is a deprivation of capabilities and Atkinson’s call for multidimensional indices to take full account of this complexity (Sen, 1993; Atkinson, 2003). These properties are that the MPI can be segmented into sub-groups (for example regional populations or ethnic groups) and that it can be sectioned to highlight which dimensions of poverty are most severe for the entire population (or for any sub-group).

The MPI approach also overcomes the weakness associated with the union method, which identifies a person as poor if they are deprived in one dimension of poverty, as well as the intersection method, which only identifies a person as poor if they are deprived across all the dimensions of poverty. The index also assists in targeting those poverty alleviation strategies that can address sub-populations, regions or specific deprivations (or combinations of these). In this way it provides a more nuanced assessment of deprivation, and thus poverty. However, this approach is not unique to the MPI and can be seen in other work (Mack and Lansley, 1985; Gordon, et al., 2003).

The MPI is calculated using the following formula:

\[ MPI = H \times A \]

where \( H \) is the headcount or the percentage of people who are identified as multidimensionally poor and \( A \) (intensity) is the percentage of dimensions in which the average poor person is deprived. A household is deemed poor if it is deprived in at least 33 per cent of the weighted indicators.

In multidimensional, as in single-dimensional poverty, \( H \) (the headcount) is familiar, intuitive and easy to communicate. It can be compared directly with an income poverty headcount, or with the incidence of deprivations in another indicator, and also compared across time. \( A \) (intensity) reflects the extent of simultaneous deprivations poor people experience. Table 5.2 below provides the dimensions, indicators, deprivation thresholds and weights for the MPI. Note that there is no direct indicator for income or consumption. This arguably makes the index particularly appropriate for measuring poverty in Melanesia given that the
region lacks reliable data on income and that a large proportion of the region’s population lives a semi-subsistence lifestyle.

Table 5.2 Dimensions, indicators, deprivation thresholds and weights for the Multidimensional Poverty Index

<table>
<thead>
<tr>
<th>Dimension (weight)</th>
<th>Indicator (weight)</th>
<th>Deprived If…</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong> (½)</td>
<td>Years of schooling</td>
<td>No household member has completed 5 years of schooling</td>
</tr>
<tr>
<td></td>
<td>School attendance</td>
<td>At least one school-aged child is not attending school years 1 to 8</td>
</tr>
<tr>
<td><strong>Health</strong> (½)</td>
<td>Child mortality</td>
<td>A child has died within the house</td>
</tr>
<tr>
<td></td>
<td>Nutrition</td>
<td>Any adult or child for whom there is nutritional information is malnourished</td>
</tr>
<tr>
<td><strong>Standard of Living</strong> (½)</td>
<td>Electricity</td>
<td>The household does not have electricity</td>
</tr>
<tr>
<td></td>
<td>Cooking fuel</td>
<td>The household cooks on wood, dung or charcoal</td>
</tr>
<tr>
<td></td>
<td>Floor</td>
<td>The house’s floor is dirt, sand or dung</td>
</tr>
<tr>
<td></td>
<td>Sanitation</td>
<td>The household does not have adequate sanitation (according to the MDG guidelines) or is shared</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>The household does not have clean drinking water (according to the MDG guidelines) or is more than 30 minutes’ walk away</td>
</tr>
<tr>
<td></td>
<td>Assets</td>
<td>The household does not own more than one of: radio, television, telephone, bicycle, motorbike or refrigerator, and does not own a car or truck</td>
</tr>
</tbody>
</table>

*Source: Alkire (2011).*

The MPI is not without its detractors. The arbitrary assignment of weights to its components is one criticism, as is the lack of an explicit linkage to conceptual analysis. It is argued that many multidimensional poverty indices – including the Physical Quality of Life Index (PQLI) (Morris, 1979), the HDI (UNDP 1990) and the MPI – are opaque, have hidden costs and downside risks that can lead to
the distortion of poverty alleviation policies (Ravallion, 2010). Further, Ravallion argues that such indices are designed and based on the availability of data and for such composite indicators to have integrity, they must have conceptual clarity on what is being measured, transparency regarding any trade-offs within the index, and be able to survive robustness tests. In response MPI defenders link it to Sen’s capability approach, emphasizing the transparency around its construction and demonstrating the index’s robustness to a range of weights (Alkire, 2011; Alkire and Foster, 2011b).

5.2.4 Global Results

The MPI has been applied to 109 countries (accounting for 79 per cent of the global population). It shows that 31 per cent of the population (around 1.65 billion people) is poor. Half of all poor people live in South Asia, while 29 per cent live in Africa. An MPI for Vanuatu has been applied at the national level (though not for sub-regions). No MPI currently exists for Solomon Islands.

The majority of those deemed poor by the MPI reside in middle income countries – 1.19 billion compared to 459 million living in low-income countries. Interestingly, this reflects recent estimates of income-based poverty (Chandy and Gertz, 2011). The index indicates that whilst Africa’s score is higher than that of South Asia, the poorest regions of South Asia have higher poverty rates and more people in poverty than sub-Saharan Africa. This sub-region analysis is useful as it shows, for example, that while Nepal has higher MPI-poverty than Cambodia, the poorest region of Cambodia is poorer than the poorest region of Nepal. Inter-temporal analysis indicates that poverty assessed by the index has reduced in Kenya, for example, through an improvement in the standard of living dimension, whilst Bangladesh’s improvement resulted from reduced deprivations of all three dimensions of poverty.

5.3 Multidimensional Poverty in Melanesia

Although the OPHI has devised the MPI at the country level for Vanuatu, (relying on data from the UNICEF (2007) Multiple Indicators Cluster Survey (MICS) focusing on the health of children and women), data constraints have prevented the estimation of the MPI for the Solomon Islands. Moreover no regional index exists for these countries.

The household survey that was administered in these countries was designed to replicate the MPI for each of the 12 communities visited, as well as to collect specific information to tailor the index to the Melanesian context. A comparison of the MPI for other countries with the Solomon Islands and Vanuatu is provided. This is followed by a discussion of the tailored index for Melanesia: the MMPI.
5.3.1 The Multidimensional Poverty Index for the Solomon Islands and Vanuatu

The household survey in this study collected data on all of the key deprivations, with the exception of the malnutrition indicator. The nutrition deprivation cut off in the index is if any adult or child for whom there is nutritional information is malnourished (Alkire, 2011). Malnourishment is measured using anthropomorphic indicators. Adults are considered to be malnourished if their Body Mass Index (BMI) is below 18.5.

Collecting accurate measurements for an adult’s height and weight (even if present) was not possible for the household surveyors. Instead a proxy must be used for whether there is a malnourished adult in the household. This proxy is best based on information regarding the food security situation of each household. As consistent access to adequate food for active healthy living is an important dimension of nutrition. Health survey questions from the US Food Security module (a self-reported indicator of behaviors, experiences and conditions related to food insecurity), were used in the household survey conducted in the Solomon Islands and Vanuatu. The US Food Security Module has been shown to be an inexpensive, easy to use analytical tool for evaluating food insecurity (Rafei, et al., 2009). Moreover, it has been successfully adapted for use in a wide variety of cultural and linguistic settings around the world – in particular in Asia and the Pacific (Derrickson et al., 2000).

Thus, as a proxy for malnutrition, responses to the following are used: ‘Did you or any other adults in the house not eat food for an entire day because there wasn’t enough money to buy food?’ Food is generally the most pressing of priorities for any human being and to have gone without food for an entire day suggests severe food insecurity – particularly in the Pacific, where subsistence agriculture is so prevalent, social networks are strong and gift-giving is an ingrained cultural norm. Accordingly, if any household member is unable to draw upon these customary coping mechanisms for an entire day then the household’s food insecurity situation is probably acute. Adults were the chosen as the appropriate referent object for food insecurity since the original index threshold asks whether there is ‘any adult or child’ that is malnourished. Given the tendency of parents to feed their children before feeding themselves, should children go without food for an entire day it clearly indicates more severe food insecurity (and one can doubtless infer that if a child in a household has gone without food, then so too have adults).

5.3.2 A Melanesian Multidimensional Poverty Index (MMPI)

Representing an important departure from the HDI, the MPI is a widely well-regarded measure of poverty that is able to be calculated for a large number of countries and can be modified to individual country contexts and priorities. This chapter tailors the MPI to include further information relevant to the nature of poverty in Melanesia. In modifying the index it is important that any indicators are
objective and quantifiable, have clearly defined thresholds, can be categorized as a binary measure and, of course, are actually available.

In tailoring the MPI we introduce a new dimension of welfare – that of access. This dimension receives an equal weight to the other three dimensions of well-being.\footnote{The MPI and MMPI assign equal weights to the different dimensions of well-being. As noted above, Alkire and Foster (2011b) find that rankings of the MPI are robust to different weights. It is also true that the different dimensions of the MPI and MMPI are not highly correlated and they are therefore contributing additional information on well-being to the index.} Previous analysis illustrates that poverty in the Pacific is not about destitution, per se, but rather poverty of opportunity and a lack of access to key services (Abbott and Pollard, 2004). The importance of having access to a social support network is also a key aspect of well-being in Melanesia. Within the dimension of access we have devised three separate indicators of poverty: the produce garden, remoteness of services and the existence of a strong social network. Each of the four dimensions of wellbeing (health, education, standard of living and access) has been re-weighted to account for one quarter of the total weighting (compared with the one third that the three incumbent dimensions are each given in the standard MPI). The individual indicators for each of these respective dimensions have also been re-weighted accordingly (see Table 5.3). Each indicator and its deprivation cut-off are discussed in turn.

A garden is probably the most fundamental livelihood asset that households possess in Melanesia. Much of Melanesian culture revolves around the garden, both in terms of its fruits and the practice of gardening itself. Households that do not have access to a garden and its produce are therefore isolated from an important cultural activity and, more practically, must rely on the cash economy (or extended family favors) for their food. According to this indicator, a household is considered deprived if it reports not having access to a garden.

Remoteness of essential services is another important dimension of hardship in the Pacific, as identified by the ADB’s Participatory Poverty assessments (Abbott and Pollard, 2004). The remoteness of many villages, and the funding constraints facing policymakers, results in a limited number of education and health providers. Additionally, access to centralized markets in which individuals can buy and sell a range of differentiated goods and services is also limited. This constrains the range of basic goods available for purchase and limits income earning opportunities. Specifically, a household is considered to be deprived if it takes more than half an hour to travel to a health service (hospital or clinic), a secondary school or to a market. While access to essential services might be partially picked up by other indicators of the index (in the health and education dimensions), this will not always be the case. The importance of access to services in Melanesia warrants the inclusion of a separate indicator.

Health is fundamental to human well-being and having good access to health clinics and hospitals is paramount during serious illness, injury or during child...
Table 5.3  Dimensions, indicators, deprivation thresholds and weights for the Melanesian Multidimensional Poverty Index

<table>
<thead>
<tr>
<th>Dimension (Weight)</th>
<th>Indicator (Weight)</th>
<th>Deprived if....</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health (V4)</td>
<td>Mortality (Ys)</td>
<td>Any child has died in the family</td>
</tr>
<tr>
<td></td>
<td>Nutrition (Ys)</td>
<td>Any adult or child for whom there is nutritional information is malnourished*</td>
</tr>
<tr>
<td>Education (V4)</td>
<td>Years of schooling (Ys)</td>
<td>No household member has completed five years of schooling</td>
</tr>
<tr>
<td></td>
<td>School attendance (Ys)</td>
<td>Any school-aged child is not attending school in years 1 to 8</td>
</tr>
<tr>
<td>Standard of Living (V4)</td>
<td>Electricity (Y64)</td>
<td>The household has no electricity</td>
</tr>
<tr>
<td></td>
<td>Sanitation (Y64)</td>
<td>The household’s sanitation facility is not improved (according to the MDG guidelines), or it is improved but shared with other households</td>
</tr>
<tr>
<td></td>
<td>Water (Y64)</td>
<td>The household does not have access to clean drinking water (according to the MDG guidelines) or clean water is more than 30 minutes walking from home.</td>
</tr>
<tr>
<td></td>
<td>Floor (Y64)</td>
<td>The household has dirt, sand or dung floor</td>
</tr>
<tr>
<td></td>
<td>Cooking fuel (Y64)</td>
<td>The household cooks with dung, wood or charcoal.</td>
</tr>
<tr>
<td></td>
<td>Assets (Y64)</td>
<td>The household does not own more than one of: radio, TV, telephone, bike, motorbike or refrigerator, and does not own a car or truck</td>
</tr>
<tr>
<td>Access (V4)</td>
<td>Garden (Y12)</td>
<td>The household does not have access to a garden</td>
</tr>
<tr>
<td></td>
<td>Services (Y12)</td>
<td>&gt; 30 minutes travelled to health clinic or secondary school or market</td>
</tr>
<tr>
<td></td>
<td>Social support (Y12)</td>
<td>Household has no one to rely upon in a time of financial difficulty</td>
</tr>
</tbody>
</table>

Note: A proxy measure was used for this indicator. A households is deprived if they answered in the affirmative to the question ‘Did you or any other adults in the house not eat food for an entire day because there wasn’t enough money to buy food’ taken from the US Food Security module.

Source: Based on Alkire (2011).
birth. High rates of infant and maternal mortality in Melanesia reflect poor household access to these services and the resultant human suffering.

Access to a secondary (rather than primary) school is assessed for a number of reasons. Having no secondary school close by was a very common complaint made by focus group participants and key informants. Similar complaints were not registered against the proximity of primary schools – even in the most remote and rural areas. Moreover, primary school education is (notionally) free in Melanesia and enrolment rates are high. Consequently, remoteness from a primary school (if it exists) does not appear to be a major constraint on education. In contrast, secondary schools are much less widely available in the Solomon Islands and Vanuatu. Thus, when a secondary school is not nearby, families are often required to send their children to school as long-term boarders (AusAID 2012).

The financial costs and time spent getting to a main markets were major complaints of focus group participants. While small local markets exist in all communities, for example roadsides and at kava bars in Vanuatu, better income earning opportunities are available in central markets.

Strong social networks and the system of reciprocity are hallmarks of the traditional economy in Melanesia and key providers of a variety of important services (Regenvanu, 2009). Households that do not have anyone to rely upon in a time of need are therefore likely to be deprived of a key dimension of informal social security. Households are classified as deprived for this indicator if they are unable to rely on anybody in the event of someone in the household getting into financial difficulties and needing support. It is recognized that there is no objective measure of financial difficulty in this instance, and that the number of people relied upon is necessarily imprecise, but this information should nevertheless provide an indication of households that lie outside a social support network.

5.3.3 Analysis of the Multidimensional Poverty Indexes

Table 5.4 provides the incidence of poverty \((H)\), the average intensity of poverty \((A)\) and the index values for both the MPI and MMPI at a community and country level. Figures 5.1 and 5.2 also plot the incidence of poverty and the index value scores.

At a country level, according to the MPI, the Solomon Islands has a greater proportion of households that are deemed poor, relative to Vanuatu. Focusing first on the headcounts of MPI-poor in each country; according to the household survey data, one quarter of Solomon Islands households are MPI-poor. Relative to other developing countries this figure is similar to Bhutan, Guatemala and Nicaragua. In Vanuatu an estimated 16 per cent of households are deemed MPI-poor, a rate similar to Tajikistan and Mongolia.\(^2\) For the sake of comparison, in 2006, 26 per cent were estimated to be below the basic needs poverty line in the Solomon Islands and 16 per cent in Vanuatu (AusAID, 2009). The average intensity of

---

\(^2\) These figures rely on our household survey sample being nationally representative.
Table 5.4 Multidimensional poverty indices by location and country

<table>
<thead>
<tr>
<th>Multidimensional Poverty Indices</th>
<th>Honiara</th>
<th>Auki</th>
<th>GPPOL</th>
<th>Weather Coast</th>
<th>Malu</th>
<th>Vela</th>
<th>Vila</th>
<th>Luganville</th>
<th>Baravet</th>
<th>Mangalili</th>
<th>Hog Harbour</th>
<th>Banks</th>
<th>Solomon Islands</th>
<th>Vanuatu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headcounts of Poverty and Average Intensity of Poverty; Comparisons Across Location and Country</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headcount ratio (H)</td>
<td>23.0</td>
<td>34.6</td>
<td>10.6</td>
<td>41.6</td>
<td>26.8</td>
<td>15.4</td>
<td>27.6</td>
<td>10.6</td>
<td>16.4</td>
<td>13.3</td>
<td>10.5</td>
<td>15.4</td>
<td>25.1</td>
<td>15.8</td>
</tr>
<tr>
<td>Average intensity (A)</td>
<td>41.4</td>
<td>41.6</td>
<td>44.4</td>
<td>46.9</td>
<td>42.4</td>
<td>38.9</td>
<td>43.8</td>
<td>43.8</td>
<td>43.9</td>
<td>42.8</td>
<td>38.2</td>
<td>38.9</td>
<td>43.0</td>
<td>42.3</td>
</tr>
<tr>
<td>MPI = H x A</td>
<td>0.095</td>
<td>0.144</td>
<td>0.047</td>
<td>0.195</td>
<td>0.114</td>
<td>0.060</td>
<td>0.121</td>
<td>0.046</td>
<td>0.072</td>
<td>0.057</td>
<td>0.040</td>
<td>0.060</td>
<td>0.108</td>
<td>0.067</td>
</tr>
<tr>
<td>Rank</td>
<td>5</td>
<td>2</td>
<td>10</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>11</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>7</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Melanesian Multidimensional Poverty Index (MMPI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headcount ratio (H)</td>
<td>20.7</td>
<td>41.0</td>
<td>11.8</td>
<td>49.4</td>
<td>19.5</td>
<td>19.2</td>
<td>34.5</td>
<td>12.9</td>
<td>19.4</td>
<td>18.7</td>
<td>7.9</td>
<td>11.5</td>
<td>26.5</td>
<td>17.7</td>
</tr>
<tr>
<td>Average intensity (A)</td>
<td>41.0</td>
<td>41.9</td>
<td>40.8</td>
<td>45.2</td>
<td>40.6</td>
<td>38.6</td>
<td>39.3</td>
<td>40.2</td>
<td>39.4</td>
<td>39.3</td>
<td>40.3</td>
<td>37.5</td>
<td>42.1</td>
<td>39.3</td>
</tr>
<tr>
<td>MMPI = H x A</td>
<td>0.085</td>
<td>0.172</td>
<td>0.048</td>
<td>0.223</td>
<td>0.079</td>
<td>0.074</td>
<td>0.136</td>
<td>0.052</td>
<td>0.076</td>
<td>0.073</td>
<td>0.052</td>
<td>0.043</td>
<td>0.112</td>
<td>0.070</td>
</tr>
<tr>
<td>Rank</td>
<td>20.7</td>
<td>41.0</td>
<td>11.8</td>
<td>49.4</td>
<td>19.5</td>
<td>19.2</td>
<td>34.5</td>
<td>12.9</td>
<td>19.4</td>
<td>18.7</td>
<td>7.9</td>
<td>11.5</td>
<td>26.5</td>
<td>17.7</td>
</tr>
</tbody>
</table>

Note: Sample size N=955
Source: The authors.
deprivation faced by the poor (A), is also relatively higher in the Solomon Islands. The survey data indicate that in the Solomon Islands, the average poor household is deprived on 43.0 per cent of the indicators compared with slightly less (42.3 per cent), in Vanuatu.

The MPI varies greatly across the communities surveyed in the Solomon Islands and Vanuatu and the data provide some important insights into the nature of poverty across location. With an incidence similar to Swaziland and the Republic of Congo, the remote Weather Coast (in the Solomon Islands) is by far the poorest location with 41.6 per cent of households deemed MPI-poor, followed by Auki with 34.6 per cent. The locations with the least incidence of poverty are the Guadalcanal Plains Palm Oil (GPPOL) villages and Vella Lavella with 11 and 15 per cent of households deemed poor respectively. In Vanuatu, the incidence of multidimensional poverty is highest in the capital Port Vila (with 28 per cent of households living in multidimensional poverty) and Baravet, Pentecost, with 16 per cent. The incidence is lowest in Luganville and Hog Harbour with about 11 per cent of households deemed MPI-poor.

In the vast majority of developing countries, poverty is predominantly a rural issue. However, findings from this household survey reveal that poverty in Melanesia is actually highest in urban areas (Port Vila and Auki) as well as in remote, rural areas (such as the Weather Coast in Solomon Islands and Baravet in Vanuatu). In contrast, the least-poor communities are those that are essentially rural in character, with good access to land and opportunities to earn income from agriculture and tourism and with effective transport links to market centres (such as Luganville, GPPOL villages and Hog Harbour). Interestingly, when communities are aligned broadly in terms of their remoteness from main markets, a distinctive U-shape pattern emerges in the distribution of poverty (see Figures 5.1 and 5.2). While this may be partially the result of the sample consisting of squatter settlements in urban areas, it does highlight potential dangers of migrating to urban areas that have limited income-earning opportunities and limited access to land for productive gardening.

Combining the headcount rate of poverty with the average intensity of deprivations yields the MPI values for each region. At a national level the Solomon

---

3 It should be noted that Auki and Luganville are the second largest towns in the Solomon Islands and Vanuatu, respectively. The incidence of poverty in Auki tends to more closely resemble that of remote communities and capital cities while poverty in Luganville is more akin to the well-connected rural communities of GPPOL and Hog Harbour. In part, this may reflect the divergent economic fortunes of the two cities: in particular the steady stream of tourism to the east coast of Espiritu Santo that funnels through Luganville and is largely absent from Malaita. Indeed, it is likely to be no coincidence that Hog Harbour, which is connected to Luganville via the East Santo road, also performs relatively well on poverty and vulnerability metrics. This provides a cautionary tale of the importance of not over-generalising the results from 12 unique communities.
Figure 5.1 Percentage of households in multidimensional poverty by location and country

Source: The authors.

Figure 5.2 Multidimensional poverty indices (headcount x average intensity) by location and country

Source: The authors.
Islands has a MPI value similar to that of Lesotho, Sao Tome and Principe, and Burma. Vanuatu has a value comparable to Indonesia and Bhutan.

According to the MMPI, which incorporates data regarding various forms of access, there is a higher percentage of households that are poor across all locations except for Malu’u and Honiara in the Solomon Islands and Hog Harbour and the Banks Islands in Vanuatu. The higher incidence of MMPI poverty relative to MPI poverty in most communities is, in large part, due to the fact that most communities have a relatively high incidence of deprivation in the ‘access’ dimension. Urban regions stand out in terms of the lack of access to gardens, with 28 per cent of households, on average, across the four urban locations deprived in this indicator compared with only two per cent in rural communities. With the exceptions of the Banks Islands, Hog Harbour, Luganville and Honiara, communities recorded deprivation rates in the ‘support’ indicator in excess of 20 per cent, with Mangalilu and GPPOL recording deprivation rates in excess of 30 per cent. On the ‘access to services’ indicator, the geographically remote communities of Weather Coast, Vella Lavella and Baravet each recorded particularly high rates of deprivations, in excess of 80 per cent, reflecting a general lack of access to hospitals, secondary schools and markets (though access to a market in Baravet was much better than in the other two locations). The provincial sub-station of Malu’u has the lowest rate of observed deprivation in the ‘access to services’ indicator, on account of the fact it is well serviced by a hospital, secondary school and market places. This evidence provides support for the importance of accounting for access when mapping the incidence and depth of poverty in Melanesian countries.

The MPI and MMPI can easily be broken down to examine how much each dimension contributes to multidimensional poverty. Figure 5.3 provides this information at the country level. The longer the bar, the greater the contribution of the dimension to overall poverty. The figure indicates that the standard of living dimension contributes most to the MPI, almost half of total poverty, in both the Solomon Islands and Vanuatu. This is followed by the health dimension and education. The health dimension makes a greater contribution to poverty in Vanuatu (33 per cent) than it does in the Solomon Islands (27 per cent). For the MMPI, the access dimension contributes an approximately equal proportion to poverty in both countries (around 27 per cent). Interestingly, access contributes more to poverty than each of the other dimensions apart from standard of living, highlighting the importance of tailoring poverty indices to country specific circumstances.

---

4 Somewhat surprisingly, the Banks Islands, a particularly remote community, the deprivation rate in the access to markets indicator was the lowest of all the communities surveyed. This probably illustrates one of the potential shortcomings of different perceptions of what a market constitutes. However, this is unlikely to substantially bias the results since the market component is but one of three indicators of services access (which, in turn only comprises one-twelfth of the MMPI) and the Banks had a relatively high proportion of households that were deprived according to the access to education indicator.
A further way of examining the indices is the identification of those who are severely poor and those that might be vulnerable to experiencing poverty. Disaggregating the indices can identify households that are severely poor (with weighted deprivations greater than 0.50 per cent and those that are less severely poor (those with a weighted deprivation between 0.30 and 0.50). Additionally, vulnerable households can be identified in the sense they fall just shy of the threshold value to be considered MPI-poor. Vulnerable households are those with a weighted average of deprivations somewhere between 0.20 and 0.30 (Alkire and Foster, 2011a). Results from this exercise are presented in Figure 5.4.

Using both the MPI and the MMPI, the share of households that are neither poor, nor vulnerable to poverty is much higher in Vanuatu than it is in the Solomon Islands. Using the MPI, 62 per cent of households in Vanuatu are not poor or vulnerable, compared with 47 per cent of Solomon Islander households. Using the MMPI, these proportions are 49 per cent and 32 per cent, respectively.

However, in both countries a large proportion of households are vulnerable to experiencing poverty: 23 per cent in Vanuatu and 28 per cent in the Solomon Islands according to the MPI, rising to 33 per cent and 42 per cent for Vanuatu and the Solomon Islands respectively for the MMPI. In fact, in each case a greater proportion of households are deemed vulnerable than are actually in poverty – considerably so in the case of the Melanesian index. Given the higher degree of exposure of Melanesian households to shocks, these vulnerable households face a high likelihood of experiencing poverty in the future.

**Figure 5.3** Percentage contribution of dimensions to multidimensional poverty by country

*Source:* The authors.
A relatively small proportion of households are in severe multidimensional poverty. In Vanuatu 3.8 per cent of households have a weighted average of deprivations in excess of 50 per cent. This is almost half of the rate of severe poverty in the Solomon Islands (7.2 per cent). While only 2.1 per cent of households in Vanuatu are severely poor according to the MMPI, the rate remains at 7.2 in the Solomon Islands (though these are not the same households, with the correlation between the two measures of severe poverty in the Solomon Islands only 0.66. However these aggregate results mask some significant variations between the regions. In the Weather Coast only 2.6 per cent of households are neither vulnerable nor MPI-poor (and 2.7 per cent of households are neither vulnerable nor non-poor using the MMPI). The Weather Coast and Auki also have the highest rates of severe poverty, with 11.7 per cent and 11.5 per cent of all households severely MPI-poor, respectively.

![Figure 5.4 Multidimensional poverty, vulnerability and severe poverty by country](image)

**Figure 5.4** Multidimensional poverty, vulnerability and severe poverty by country

*Source:* The authors.

### 5.4 Conclusion

This chapter is the first to analyse multidimensional poverty at a regional level in Melanesian countries. Using unique household survey data conducted in 2010–11, it replicates the MPI from OPHI. It also tailors the index to better consider the Melanesian context, by including access to produce gardens, basic services and social support. The MMPI found that poverty in the Solomon Islands and Vanuatu
not only varies between rural and urban locations but in general increased the incidence poverty reflecting the poor access Melanesian households often have to basic services. Multidimensional poverty was found to be highest in urban and remote locations.

For policymakers, the MMPI provides new insights into both the experience of poverty in the Solomon Islands and Vanuatu and the vulnerability to poverty. Central to poverty responses should be the recognition of the importance of family gardens for the production of staple foods. In urban locations, access to land to tend gardens is limited. Without this underlying means of self-support, Melanesians living in urban centers have an increased risk of being unable to meet their basic food needs. Recognition that monetization is a now an entrenched characteristic of Melanesian economies is also necessary for policymakers. Community life for families in the Solomon Islands and Vanuatu can no longer function effectively without access to a certain level of income. Cash is required to pay for basic necessities, including school fees, medical and educational services, as well as other basic necessities, such as electricity. Monetization affects both urban and rural communities and policy responses to poverty are required to address this new circumstance. While traditional social obligations may have previously ameliorated the most obvious displays of poverty, social mobility, monetization and global economic impacts are limiting the social protection that these once provided.

The romanticized island life with its subsistence affluence is now much less of a reality in Melanesia. The term ‘subsistence affluence’ may not be dismissed altogether. It can still be useful in helping to explain intermittent labour supply (whereby some Melanesian households only engage in generating cash income on a needs basis) and potentially higher reservation wages (the minimum amount of money for which a household will choose to work). Moreover, AusAID (1999) notes that poor social indicators can exist alongside subsistence affluence, referring to ‘poverty within subsistence affluence’ implying that the terms are reconcilable. However, the increasing needs for cash (particularly for food) as well as more exposure to cash goods are likely to have increased households target levels (or thresholds) of income and potentially reduced reservation wages. This is particularly true when there are increasing demands for cash at custom events. Lifestyles are changing quickly and this chapter demonstrates that the harsh reality faced by a significant proportion of the Ni-Vanuatu and Solomon Islanders is a relatively high incidence of poverty and an even higher rate of vulnerability. Poverty is a real issue in the Solomon Islands and Vanuatu and cannot be ignored.

---

5 The issues are discussed in greater detail in the context of Papua New Guinea by AusAID (1999).
References


Regenvanu, R. (2009), *The Traditional Economy as the Source of Resilience in Melanesia* (Vanuatu Cultural Centre: Port Vila).


