World Bank poverty analysis in Fiji
Issues in methodology and policy applicability

Wadan Lal Narsey

ABSTRACT
Quantitative poverty analysis for Fiji has become more frequent over the last five years, corresponding to the increasing frequency of household income and expenditure surveys (HIES). The Fiji Bureau of Statistics (FBS) has sponsored several poverty analyses using the 2002-03 and 2008-09 HIES data resulting in Narsey (2008), Narsey (2010), Narsey (2011b) and Narsey(2012).

The World Bank also initiated a poverty analysis exercise in Fiji in 2010, using different methodology from that used by Narsey (2008) and FBS (2011) and produced parallel results which were different from Narsey (2011) in key respects. The World Bank (2011) results will understandably be the results used internationally and perhaps even locally. This paper argues, however, that the World Bank’s methodology has weaknesses when applied in the Fiji context, giving incorrect results and signals. The World Bank methodology also has weaknesses in important policy applications such as the determination of minimum wages guidelines to improve the living standards of the most vulnerable non-unionized workers in Fiji.

Quite anomalously, World Bank poverty analysis in Fiji does not follow World Bank’s own expert advice for comparable situations. This paper suggests that international organisations like World Bank need to re-examine their poverty analysis methodology and policy applicability for middle income countries like Fiji where the HIES data is statistically robust, and also look towards strengthening domestic capabilities and continuity in such poverty analysis initiatives.

Keywords: Fiji, World Bank, HIES, incidence of poverty, methodology of poverty lines, poverty alleviation guidelines
INTRODUCTION

Poverty cannot be understood without a thorough understanding of all its multidimensional aspects, outlined by Townsend (1993) or Sen (1999). The multidimensional approach is reinforced by the universal acceptance of the need to measure and track progress on all the Millennium Development Goals, with their hundreds of indicators. However, simple and basic quantitative poverty analysis is still indispensable as the foundation for further work.

At the same time, for greater credibility, the basic quantitative methodology and results cannot be taken as “Gospel truth” and used in isolation: they still need to be consistent with the quality of data available, the trends in broader development indicators, the objectives of the poverty analysis, and the practical applicability of poverty analysis results. These broader “common sense” real world considerations are all the subject of this paper.

Despite poverty being a global issue, the lack of international uniformity in statistical data gathering has meant that there is no real uniformity in the methodology used by the poverty analysis experts and practitioners, as may be seen by examining the internationally accepted guidelines developed by Ravallion (1998), Kakwani (2003), World Bank (2003), Thorbecke (2004), United Nations (2005), and ADB (2006). Current practice in the Pacific ostensibly takes reference from World Bank approaches, the most authoritative and recent one being Haughton and Khandker (2009), also a World Bank publication.

There is consensus amongst the practitioners, however, the fundamental objectives of the poverty analysis are

(a) to assist stakeholders to better target their poverty reduction strategies regionally;
(b) to provide sensible guidelines for the total amounts of poverty alleviation resources required;
(c) to provide sensible guidelines for the regional distribution of poverty alleviation resources;
(d) to assist poverty stakeholders in minimum wages guidelines if a country has a national incomes policy;
(e) to monitor the state of poverty over time, so as to assess the degree of success of past policies and effectiveness of institutions charged with the responsibility for reducing poverty;
(f) to keep poverty on the agenda, if considered be at unacceptably high levels;
(g) to enable international comparisons.

Poverty analysis, whether by the Bureaus of Statistics, the World Bank or academics, cannot be conducted in isolation, with the results merely thrown into the international arena as a theoretical exercise. Small developing countries like Fiji do not have the resources and luxury of treating poverty analysis as a pure academic exercise. Poverty analysis must be situated within the socio-
political context within which poverty alleviation measures are attempted and need to not only be in harmony with them, but to assist them in practical terms, to justify the costs to tax-payers.

This paper therefore uses the fundamental objectives (a), (b), (c), (d), and (e) above as the criteria for assessing the different approaches taken in Fiji by World Bank (2011) and Narsey (2011), in terms of methodology, the consistency between the results and overall macro-economic indicators, and usefulness for policy applicability for Fiji.

It is argued here that the World Bank approach as practised in Fiji, is inappropriate for Fiji, and paradoxically inconsistent with the advice given by the latest World Bank manual on poverty analysis- Haughton and Khandker (2009).

QUANTITATIVE POVERTY ANALYSIS IN FIJI

There have now been four sets of basic quantitative analyses of poverty in Fiji over the last two decades, associated with three national household income and expenditure surveys (HIES) by the Fiji Bureau of Statistics.

The first was the 1997 Fiji Poverty Report by the UNDP and Fiji Government1 using a 1991 HIES whose results were unfortunately considered too unreliable to warrant publication of a report.2 UNDP (1997) used a simplified basket of foods to estimate a Food Poverty Line (FPL), and a multiplier method to derive the Basic Needs Poverty Line (BNPL) values. Narsey (2008) gives a critique of the 1997 Fiji Poverty Report, in terms of its methodology, the confusion of tables and data from the preliminary consultancy reports, and hence the uncertainties in the eventual results.3

Based on the first substantive and reliable 2002-03 HIES data, Narsey (2008)4 with the assistance of the Fiji Food and Nutrition Centre5 created a FPL basket of foods, based on actual consumption patterns of food consumption in Fiji by rural and urban Fijians and Indo-Fijians6. The NFPL was based on the actual Non-Food expenditures in 2002-03 for Decile 3.7

Following the 2008-09 HIES, quantitative poverty analysis for the first time was able to produce time trends over a five year period. For this exercise, the 2002-03 BNPL values used in Narsey (2008) were updated to 2008-09 values, with the poverty results presented in Narsey, Waqavonovono, Raikoti (2010)8, Narsey (2011)9 and the most updated results, in Narsey(2012)10. The last three were printed as FBS publications.11

At the same time as the Bureau-sponsored exercises were taking place, the World Bank independently also began a poverty analysis initiative in Fiji, using different methodology, resulting in different poverty lines and results12. The World Bank stated (2011, p.1) that their “aim is to complement the existing poverty estimates, which are based on income (Narsey, 2008), and to further understand the nature of poverty and its spatial dispersion in Fiji”.

The latter part of the statement is certainly correct as the World Bank conducted a useful exercise mapping the 2008-09 HIES results on to the 2007 Census data in order to obtain “small area estimation” of poverty. However, rather than being merely “complementary” to the FBS results
based on income, it is to be expected that the World Bank aggregate poverty results will be seen as the “authoritative” ones and used internationally and locally, rather than the FBS results.13 This paper compares the merits and demerits of the World Bank (2011) methodology and results with that of Narsey, Waqavonovono, Raikoti (2010). The results may be classified in two sets used for policy application: first, the absolute poverty numbers (Head Count Ratio and Poverty Gaps) for 2008-09 and for 2002-03; and secondly, the indicated changes in poverty between 2002-03 to 2008-09. The latter will depend on several factors, including the methodology for converting one year’s poverty lines are converted into another year’s poverty lines.14

This paper argues that some of the WB poverty results such as the changes between 2002-03 and 2008-09 are not consistent with other indicators on the Fiji economy. They also have weaknesses in policy application in that they give inaccurate guidelines for the sharing of poverty alleviation resources between urban and rural areas, while using a methodology which is not as useful in providing understandable guidelines for the setting of minimum wages in Fiji by Wages Councils, as is the approach in Narsey(2011) and Narsey(2012).

THE DIFFERENCES IN METHODOLOGY


(a) The same FPL baskets of foods (separately defined for rural and urban Fijians and rural and urban Indo-Fijians – i.e. four baskets altogether) as used for the 2008 Report, were valued at 2008-09 prices, but the ethnic values were aggregated into rural and urban BNPL lines using the ethnic proportions of the population as weights;15

(b) The 2002-03 NFPL was adjusted to 2008-09 by the percentage change in the non-Food Consumer Prices Index that is measured by the Fiji Bureau of Statistics (FBS).

(c) The 2008-09 BNPL = FPL baskets (at 2008-09 prices) + NFPL (adjusted to 2008-09).

World Bank (2011) stated that their methodology differed from the official FBS estimates (Narsey, Waqavonovono & Raikoti 2010) in three ways:

(a) they used a consumption/expenditure aggregate as the welfare criterion

(b) they adjusted the food expenditure of households by their estimates of the variation in cost-of-living between rural and urban areas, and

(c) they created a FPL value for 2008-09 using the actual food expenditure of references households in the 2008-09 HIES and the energy requirement standard.

(d) they used a multiplier method to derive the NFPL and hence the BNPL values for 2008-09.

(e) the 2008-09 BNPL values were then regressed back to obtain 2002-03 values.
The World Bank took pains to state that their approach was a “cost of basic needs” approach where they 1. estimated a food poverty line (estimated monetary value of minimum food basket) and 2. estimated cost of non-food goods and services.

While the reference to “minimum food basket” might suggest that this was the same as done by Narsey (2008) and Narsey (2011), this was not really the case.

The FPL, NFPL and BNPL values estimated by (2011) and those estimated by World Bank (2011) are given here as Table 1.

**THE WORLD BANK FOOD POVERTY LINES**

The World Bank argued that the standard 2,100 calories per day was the dietary energy required per person, but since a “reference” household in Fiji comprised 2 adults and 2 children, or 3 Adult Equivalents, they adopted a “scaling factor” of 1.33 applied to the 2,100 calories per person, to obtain a target of 2,793 Calories per Adult Equivalent.

The World Bank then used the actual expenditure patterns of households in the second, third, fourth and fifth deciles of 2008-09 to estimate the calories produced by all the items in that expenditure, and then estimated the price per calorie of that expenditure pattern. The cost of the Food Poverty Line was then set at 2793* (the estimated unit cost of 1 calorie). i.e. the World Bank did not cost some ideal Minimum Cost basket of foods, but what the urban and rural households were actually consuming in those reference deciles.

In effect, the World Bank methodology for the Food Poverty Line, brought in an element of the Food Energy Intake method, allied with a multiplier methodology for the Non-Food Poverty Line and hence the BNPL.

**Table 1:** *WB and FBS: FPL, NFPL and BNPL (2008-09)*

<table>
<thead>
<tr>
<th></th>
<th>WB ($)</th>
<th>FBS ($)</th>
<th>% (WB-FBS)/FBS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FPL 2008-09</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>18.48</td>
<td>21.76</td>
<td>-15</td>
</tr>
<tr>
<td>Urban</td>
<td>18.48</td>
<td>21.28</td>
<td>-13</td>
</tr>
<tr>
<td>% (R-U)/U</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>NFPL 2008-09</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>16.71</td>
<td>19.06</td>
<td>-12</td>
</tr>
<tr>
<td>Urban</td>
<td>26.69</td>
<td>24.82</td>
<td>8</td>
</tr>
<tr>
<td>% (R-U)/U</td>
<td>-37</td>
<td>-23</td>
<td></td>
</tr>
<tr>
<td><strong>BNPL 2008-09</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>35.19</td>
<td>40.82</td>
<td>-14</td>
</tr>
<tr>
<td>Urban</td>
<td>45.17</td>
<td>46.10</td>
<td>-2</td>
</tr>
<tr>
<td>% (R-U)/U</td>
<td>-22</td>
<td>-11</td>
<td></td>
</tr>
</tbody>
</table>
This resulted in the WB estimate for a FPL pAE of $961 per Adult per year in 2008-09, which they then used for both Urban and Rural Households, for all ethnic groups. Table 1 indicates that the WB values for the FPL were some 15% lower than FBS (2011) for rural areas and 13% lower in urban areas.

It may be noted that if poverty lines are used to guide minimum wages, than for urban areas, there would be little difference between World Bank (2011) and Narsey (2011), although the World Bank poverty line for rural areas would be 14% lower. It is not often taken into account that most minimum wages determination exercises are conducted for urban workers, and it is urban poverty lines which should be used as the guideline, and not some national aggregate based on some population-weighted average for the country. Fiji certainly has not attempted to have rural:urban disaggregated values for minimum wages guidelines, but rather, industry-disaggregated.

**WORLD BANK NON-FOOD POVERTY LINES**

The World Bank approach to the Non-Food Poverty Line was also quite different. They first obtained the Non-Food shares of total expenditure for households whose total consumption expenditure was close to the FPL values. They estimated the ratio to be 0.59 in urban areas, and 0.47 in rural areas.

They then obtained the values for BNPL by multiplying the same FPL for both rural and urban areas, with the “multipliers” to obtain the urban and rural BNPL values as follows:

\[
\text{Urban BNPL} = \frac{\text{FPL}}{1-0.59} = \frac{\text{FPL}}{0.41} = $45.17 \text{ per AE pw.}
\]

\[
\text{Rural BNPL} = \frac{\text{FPL}}{1-0.47} = \frac{\text{FPL}}{0.53} = $35.19 \text{ per AE pw.}
\]

Note that 0.41 is the share of food in total consumption expenditure for the reference urban households, while 0.53 is effectively the share of food in consumption expenditure for the reference rural household.

It is important to note that for rural households, the value of 0.53 in the share of food would fall in between the 4th and 5th deciles. For urban households, 0.41 is the share of food somewhere in decile 1. In other words, the multiplier for urban households is from a reference household in decile 1, while that for rural households is near the top of decile 4. Both multipliers are made to work on the same Food Poverty Line value. This methodology results in a rural Non-Food Poverty Line value which is some 37% less than the urban value, while the Narsey (2011) methodology gives a much lower -23% difference.

Table 1 indicates that the resulting WB’s rural BNPL is some 14% less than the value used by FBS (2011) while the urban value is just 2% less. The WB rural:urban gap in BNPL for 2008-09 is a very large -22%, double that of FBS (2011) of -11%.

With these BNPL values were then used to estimate the Incidence of Poverty or Head Count Ratio in 2008-09; it is inevitable that the WB estimate of the rural incidence of poverty will tend to be lower than that of the FBS, for 2008-09, ceteris paribus if the same household welfare criterion was used.
However, while Narsey (2011) used income as the welfare criterion, the WB used expenditure, which was further reduced in value because of adjustments.

**WORLD BANK USE OF ADJUSTED EXPENDITURE AS WELFARE CRITERION**

The World Bank’s use of expenditure is consistent with their methodology elsewhere in the developing world. It is accepted that in some developing countries where the income data is not of good quality, then expenditure may be a superior criterion. This argument would certainly be accepted for some countries in the Pacific (such as Solomon Islands and Vanuatu) where the income data appears quite unreliable and shows little of the expected relationship with expenditure, throughout the income spectrum.21

The Fiji HIES on the other hand (both in 2002-03 and 2008-09) have been well implemented and the income and expenditure are quite consistently correlated, with dis-savings at the low income levels, and positive savings rates at the higher income levels, increasing with income levels. For Fiji, one may make a case that income is a better criterion for measuring poverty, just as it is used in middle income and more developed countries.

The World Bank made two adjustments to the household expenditure values. First, they excluded expenditure on household durables as amortization of the assets could not be ascertained, and “a decision was taken to omit durables to avoid introducing noise into the poverty estimates”. They stated that sensitivity analysis “reassuringly showed little impact of this omission on the poverty estimates”.

It might of course also be argued that if the expenditure had not been made on the durables, it would have been made at least partly on other items of expenditure which would have been included in the welfare criterion. The exclusion of expenditure on durables is a further erosion of the income criterion. It might also be argued that if the sensitivity analysis showed little impact on the poverty estimates, it would be preferable to include the expenditure as having a positive impact on the household’s welfare.

The World Bank also stated that the health expenditures were omitted “as a conventional practice, since these expenditures are a “regrettable necessity” that incorrectly registers an increase in welfare when loss of welfare from being sick cannot be estimated”. Again, this would seem to be a totally un-necessary adjustment as similar arguments could be made about education expenditures and many others, whose welfare impact similarly cannot be estimated.

One would think that if there is any doubt at all about the need for an adjustment, it would be preferable to not make the adjustment.
<table>
<thead>
<tr>
<th>Stated method</th>
<th>Cost of Basic Needs</th>
<th>Cost of Basic Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Poverty Line</td>
<td>Basket of basic foods based on 2002-03 HIES patterns, nutritionally designed meal</td>
<td>Cost of all foods consumed by deciles 2 to 5, to ensure minimum of 2100 kcals per</td>
</tr>
<tr>
<td></td>
<td>plans, differentiated by rural:urban and ethnicity, with nutritional content having</td>
<td>person or 2793 kcals per adult equivalent</td>
</tr>
<tr>
<td></td>
<td>average of 2539 kcals. and satisfying other nutritional standards.</td>
<td></td>
</tr>
<tr>
<td>Non-Food Poverty Line</td>
<td>Actual expenditure of decile 3 households in 2002-03, differentiated by rural and</td>
<td>Multiplier method using share of Non-Food in Total Consumption Expenditure, for</td>
</tr>
<tr>
<td></td>
<td>urban (based on regression).</td>
<td>households whose total expenditure = the value of the Food Poverty Line.</td>
</tr>
<tr>
<td>Basic Needs Poverty Line</td>
<td>FPL + NFPL</td>
<td>Differentiated by rural and urban.</td>
</tr>
<tr>
<td>Welfare criterion</td>
<td>Income per AE</td>
<td>Consumption Exp. per AE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>less durables expenditure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>less Hospitalisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>with Food component deflated by rural:urban price differentials.</td>
</tr>
<tr>
<td>Links between 2002-03 and 2008-09 BNPL.</td>
<td>From 2002-03 BNPL to 2008-09 BNPL:</td>
<td>From 2008-09 BNPL to 2002-03:</td>
</tr>
<tr>
<td></td>
<td>FPL basket for 2002-03, priced at 2008-09 prices; 2002-03 NFPL adjusted by</td>
<td>2008-09 FPL deflated by Food CPI back to 2002-03;</td>
</tr>
<tr>
<td></td>
<td>non-Food CPI to 2008-09 values.</td>
<td>2008-09 NFPL deflated back to 2002-03 by full Fiji CPI</td>
</tr>
</tbody>
</table>
The World Bank further adjusted the food expenditure component for apparent differences in prices between rural and urban areas. The World Bank study reported that prices in rural areas seemed to be systematically higher than that in urban areas, which they explained as due to the higher costs of transportation to rural areas.

They therefore used price deflators on all expenditure values in rural areas (divided by 1.03 in 2002-03, and divided by 1.04 in 2008-09; while in urban areas they divided by 0.97 and by 0.96 respectively.

In all previous studies, this adjustment has not been bothered with as it has generally been thought that while modern usually processed foods are more expensive in rural areas, the converse would be true for locally produced foods, with the effects largely balancing out.

It may be noted that even the rural prices collected by the Bureau are largely obtained along the major highways and roads, not in genuinely distant rural areas.

It seems also that the World Bank’s estimates of “imputed rents” while generally similar to those estimated by Narsey (2011), were on the higher side for rural housing. This would also tend to reduce the poverty estimates for rural households.

Table 2 gives a summary of the differences in the methodology between the World Bank (2011) and Narsey (2010, 2011, 2012))

**DIFFERENCES IN POVERTY RESULTS**

Table 3 gives the Head Count Ratios estimated by World Bank (2011) and Narsey (2011). All the World Bank results are higher than the FBS results, with the estimate for 2008-09 being an extremely large 42% higher for urban households, although that for rural households was only 3% higher.

<table>
<thead>
<tr>
<th></th>
<th>WB</th>
<th>FBS</th>
<th>(%(WB-FBS)/FBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2002-03</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>44</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Urban</td>
<td>35</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td>FIJI</td>
<td>40</td>
<td>35</td>
<td>15</td>
</tr>
<tr>
<td><strong>2008-09</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>44</td>
<td>43</td>
<td>3</td>
</tr>
<tr>
<td>Urban</td>
<td>26</td>
<td>18</td>
<td>42</td>
</tr>
<tr>
<td>FIJI</td>
<td>35</td>
<td>31</td>
<td>15</td>
</tr>
</tbody>
</table>

The WB results for 2002-03 were also significantly higher for both urban households (by 23%) and rural households (10%).
Of course, this is to be expected given that the FBS used household income as the welfare criterion which more accurately reflects the capacity of households to enjoy particular standards of living, including that obtained by expenditure.

While it might be thought the differences in absolute numbers for 2008-09 estimated by the World Bank (2011) are not particularly significant (35% as opposed to 31% by Narsey (2011)), these numbers unfortunately give wrong impressions about the changes between 2002-03 and 2008-09.

**CHANGES BETWEEN 2002-03 HIES AND 2008-09 HIES**

For any useful estimates of changes in poverty between two periods, it is essential that the methodology must be consistent between the two periods, and consistently capture the changes over time, in both the poverty lines, and the welfare criterion.

To obtain the FPL value for 2002-03, the WB Team deflated the 2008-09 FPL value by the Food CPI change between 2003 and 2009, stated by them to be a 42% increase in prices between these two HIES. Narsey (2011) on the other hand estimated that the FPL basket of foods (a subset of all foods) increased in price by a somewhat lower 35%.

It should be noted that the food price index in the CPI reflects changes in the prices of all the food items (necessities and non-necessities) consumed by the average household in Fiji, while the FPL basket of foods is far more basic in reflecting the essential foods consumed by the poor. The two groups of foods will not generally have the same change in prices, except by a sheer coincidence.

The WB study then deflated their 2008-09 Non-Food Poverty Line by the total CPI change between 2003 and 2009, i.e. a factor of 1.247 or implying a 24.7% change in prices. Narsey (2011) estimated that non-food items (i.e. not the full CPI) in the CPI changed between 2002-03 and 2009-09 by a higher 30%.

The World Bank conversion of the 2008-09 BNPL values back to 2002-03 values, both for the FPL and NFPL appeared to have errors in both the conversion factors.

**Table 4: Perc. Changes in Head Count Ratio (%) between 2002-03 and 2008-09**

<table>
<thead>
<tr>
<th></th>
<th>WB (Adj. Exp.)</th>
<th>FBS (Income)</th>
<th>FBS (Unadj. Exp.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>0</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Urban</td>
<td>-24</td>
<td>-34</td>
<td>-22</td>
</tr>
<tr>
<td>FIJI</td>
<td>-12</td>
<td>-11</td>
<td>-4</td>
</tr>
</tbody>
</table>

Table 4 indicates that while the national aggregate change in the Head Count Ratio was about the same for WB (decrease of -12%) and FBS (decrease of -11%), the indication for rural areas given by the WB methodology and poverty lines was “no change” while that for FBS (income) indicated a worsening of poverty by 6%.
If the totally unadjusted expenditure was used as the welfare criterion with the FBS values for the BNPL (estimated as a separate exercise by the author), the same time trends are indicated as for the income criterion- except that the rural poverty is shown to have increased by a larger 10% while that of urban areas reduced by -22% (about the same as for WB results, but less than the FBS income results), leading to a much lower overall reduction of poverty for Fiji of -4%.

While both World Bank (2011) and Narsey (2011) acknowledge that there was a severe downturn in the agricultural sector, especially with the severe decline in the sugar industry which is the back-bone of the rural economy, the WB indicator of changes in rural poverty, does not reflect this reality on the ground.

There is a range of other statistics presented in Narsey (2011) and Narsey (2012) which indicate that the rural sector significantly declined between the two HIES, in aggregate and for the poorest (and the well-off) amongst them: a -14% decline in agricultural business income, a real decline in Income per Adult Equivalent in rural areas, real declines in Food Expenditure per Adult Equivalent, a 7% increase in the percentage of population with Food Expenditure below the Food Poverty Line values, and an increase in Food as a percentage of Total Expenditure through all the rural deciles.

In terms of objective (e) Narsey (2011) suggests that the poverty stakeholders in rural areas, have failed in their efforts as rural poverty has worsened.

The World Bank result of “no change” in poverty for rural areas, when all indicators suggest a worsening or rural poverty, therefore suggests that the World Bank (2011) methodology is not suitable for Fiji. The sources of the error would be some combination of errors in the methodology of estimation of the poverty lines (FPL and BNPL), the choice of the welfare criterion (adjusted consumption expenditure), and the method of deflating the 2008-09 values back to 2002-03 values.

DIFFERENCES IN POVERTY GAP ESTIMATES AND RECOMMENDATIONS

The “Poverty Gap” is the total amount of dollar resources that are needed to raise “poor” households to just above the poverty line chosen. This of course depends on the value estimated for the poverty line, and the welfare criterion being used.

This immediately raises a serious question on the use of expenditure as the welfare criterion as is done by the World Bank. If “poor” household has an income which is higher than what the consumption expenditure shows (with the World Bank also deducting the expenditures on durables and hospitalization) one could reasonably ask why one should estimate the poverty alleviation resource as the difference between the actual household expenditure and the poverty line.

To give an extreme example, if a household has an expenditure level which is below the BNPL it would be considered to be poor and in need of poverty alleviation resources. But its income may be higher than the BNPL and therefore could not reasonably be considered to be a “poor” household deserving of poverty alleviation resources. The household may simply have spent
less and saved more or, given the World Bank expenditure adjustment, the household decided to use its income to purchase durables and spend on hospitalization, rather than the other items of expenditure which were included in the expenditure criterion. There is clearly greater common sense justification for using income as the poverty criterion in Fiji rather than expenditure.

In any case, the World Bank estimate of the Poverty Gap for 2008-09 was $135 million (representing 2.7% of GDP) while the FBS estimate using the income criterion was a higher $152 million, some 13% higher (and representing 3.1% of GDP).

Of course, if poverty lines are chosen at lower levels, the Poverty Gap estimates would be correspondingly lower. These estimates use different BNPL values and different welfare criteria by the World Bank (2011) and Narsey (2011).

Table 5: Poverty Gaps (2008-09) ($m and %)

<table>
<thead>
<tr>
<th></th>
<th>WB</th>
<th>FBS</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural ($m)</td>
<td>80</td>
<td>108</td>
<td>35</td>
</tr>
<tr>
<td>Urban ($m)</td>
<td>55</td>
<td>45</td>
<td>-19</td>
</tr>
<tr>
<td>FIJI ($m)</td>
<td>135</td>
<td>152</td>
<td>13</td>
</tr>
<tr>
<td>% Rural</td>
<td>59</td>
<td>71</td>
<td>19</td>
</tr>
</tbody>
</table>

Table 6 gives the poverty gap results using unadjusted expenditure and income as the welfare criteria and the same BNPL values. They indicate that using the expenditure criterion would result in a poverty gap which is some 31% higher for both 2002-03 and 2008-09.

Table 6: Poverty Gaps using Expenditure and Income as Welfare Criterion: FBS (2011)

<table>
<thead>
<tr>
<th></th>
<th>2002-02</th>
<th>2008-09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty Gap by Expenditure ($m)</td>
<td>157</td>
<td>200</td>
</tr>
<tr>
<td>Poverty Gap by Income ($m)</td>
<td>120</td>
<td>152</td>
</tr>
<tr>
<td>%(PG.Exp-PG Inc)/Inc</td>
<td>31%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Alternatively, government would have needed to find an extra $37 million in 2002-03, and extra $48 million in 2008-09. These are significant sums in the context of the Fijian budgetary allocations, amounting to quite large proportions of the amounts made available to the Department of Social Welfare.

It is also useful to consider what happens in practice when it comes to poverty alleviation resources when assessing the policy guidelines given by the two approaches. What happens is that government budgets make available a certain amount for poverty alleviation, given the other demands being made on the national budget for education, health, infrastructure etc. The most useful contribution by poverty analysis then becomes the provision of strong guidelines for the sharing of resources by region or other major disaggregated variable of concern to national stakeholders at points in time.24
Here again, there are some differences in the recommendations of the competing analyses. Table 5 indicates that World Bank (2011) estimate would recommend that 59% of the poverty alleviation resources would go to rural areas, while the Narsey (2011) methodology and estimates would suggest that 71% should be allocated to rural households, quite significantly higher.

In summary, the choice of a methodology to identify the poor should produce results which are clearly in consonance with the observed trends in the economy, while giving policy guidelines on poverty alleviation measures, which are reasonable and pragmatic.

On both these criteria, the WB use of their modified expenditure is not as sound as the income criterion used in this study. The WB approach fails to identify the real deterioration that has occurred between 2002-03 and 2008-09 in the rural areas in Fiji, while indicating sharing guidelines for poverty alleviation which would give far more to urban households than they should receive.

Given that the income criterion is inherently superior to the expenditure approach as an indicator of the monetary potential of households to achieve particular living standards, stakeholders in poverty are advised to continue to use the income approach in Fiji.

PRAGMATICS IN POLICY APPLICATION: JUSTIFYING MINIMUM WAGES GUIDELINES

Of course, it is important to obtain theoretically sound estimates of the cost of Basic Needs Poverty Lines for a country, which can be used to derive good estimates of poverty in the country by the various disaggregates such as urban/rural or region.

Nearly always, the results for incidence of poverty (Head Count Ratio) or poverty gaps, is used by national stakeholders to give guidance on relative poverty (e.g. which region is “most poor”) and on sharing of poverty alleviation resources i.e. proportions of total poverty alleviation resources being allocated by the stakeholder. These guiding statistics do not change much if the level of the Basic Needs Poverty Line changes.

However, in Fiji, the BNPL values have been used to try and guide the work of the Wages Councils in Fiji, in the setting of “minimum wages”. Narsey (2006) traces the thirty year history of the Wages Councils mechanisms in Fiji, outlining their relative failure to maintain the real wages of the most vulnerable workers in Fiji, those in the informal sector, often without the protection of pension fund contributions. Since 2006, however, the Wages Councils mechanisms have been put onto a firmer footing, with the 2006 military coup unfortunately preventing any great success in the raising of wages.

With the Fiji economy showing virtually zero growth between 2006 and 2011, attempts by the Wages Councils to set minimum wages, have been met with great resistance by the employers whose profits have already been strained because of the economic stagnation. It is natural therefore to have seen intense conflict between the idea that “desired minimum standards of living” should be used to set the minimum wage, as opposed to what the market will bear: i.e. what employers can afford to set, and remain viable as a business entity.
Employers in Fiji (and their representative the Employers Federation) have naturally taken the latter approach. The Fiji unions and the current Wages Council Chairman have taken the former approach. This debate and conflicts over the appropriate level for the BNPL continues currently. The Wages Councils have faced enormous opposition from the Employers’ Federation who argue that the BNPL is set at “too high” a level in Fiji and have even argued that the BNPL should be set at a value that recognizes that households are supported by more than one worker, so that the BNPL value should not be assessed in terms of its sole ability to sustain a household.

Whether the Wages Councils are successful or not, it is clear that a higher BNPL value naturally encourages a higher minimum wage to be set, and conversely.

The WB approach to the FPL, while theoretically understandable to economists, is not transparent at all to the ordinary stakeholders in minimum wages negotiations, such as employers, unions and members of the minimum wages councils. The FPL basket approach on the other hand, is totally transparent. When lobby groups ask for minimum wages to be raised, the most frequent justifying arguments is in reference to the changes in the costs of basic foods such as rice, local root-crops, chicken and flour. Similarly, NFPL value is also transparent in terms of the requirements to pay increased non-food costs of a household. All stakeholders, including employers, can see exactly why minimum wages need to be adjusted and by how much, in relation to the perceived changes in cost of basic food and non-food items.

EXPERT WORLD BANK ADVICE AND WB PRACTITIONERS IN THE FIELD

Chapter 3 of Haughton and Khandker (2009) gives an excellent summary of the current World Bank thinking on the pros and cons of using different methodologies to estimate poverty lines. They differentiate between the cost of basic needs approach (CBN) and the food energy intake (FEI) method, although both have a reference to the minimum nutritional requirement of 2100 calories per person per day.

The CBN method essentially stipulates a consumption bundle that is deemed to be adequate, with both food and nonfood components, with the cost of the bundles being estimated for each subgroup (urban or rural, region etc.). The food requirement uses the usual FAO standard of 2,100 Calories per person per day, using a basic diet that reflects the habits of households near the poverty line. To compare over time, Haughton and Khandker recommend re-costing the food basket of the middle quintile by prices in the next period; and adjusting the non-food by the CPI. This is essentially the approach taken for Fiji by Narsey (2008).

The FEI method essentially plots expenditure (or income) per capita against food consumption (in calories per person per day) to determine the expenditure (or income) level at which a household acquires enough food. There is no reference to any minimum basket of foods. All expenditure is converted into kcals and the appropriate expenditure level is then chosen as the BNPL.

Haughton and Khandker referred to Ravallion and Bidani (1994) who computed headcount poverty measures for Indonesia using both the cost of basic needs and the food energy intake methods. The striking finding was that “while the cost of basic needs method shows rural
poverty to be more than twice as great as urban poverty, the food energy intake method indicates (implausibly) that poverty is higher in urban than in rural areas.”

The major problem was the differences between rural and urban areas in the composition of food being consumed. Food energy intake depended not just on incomes, but also on the tastes of the household, the level of activity of household members; the relative prices of different foods, and of food to nonfood items; and the presence of publicly provided goods. Haughton and Khandker noted (2009, pp. 56-59): “Rural households can obtain food more cheaply, both because food is typically less expensive in rural areas and also because they are more willing to consume foodstuffs that are cheaper per calorie (such as cassava rather than rice); urban consumers are more likely to buy higher quality foodstuffs, which raises the cost per calorie.”

They pointed out that for a given level of food energy intake, the poverty line in the rural area will be lower than in the urban area. This was not a problem if it only reflected the differences in the cost of living. But if the gap exceeds the differences in the cost of living than urban poverty can appear to be higher than rural poverty “a completely implausible result”.

Haughton and Khandker advise that the food energy intake method be used only when information is unavailable but remind that “Unfortunately, the food energy intake method is seriously flawed, and should not be used for comparisons across time, or across regions, or between urban and rural areas, unless the alternatives are infeasible.”

**SIMILAR METHODOLOGY MISTAKES FOR SOLOMON ISLANDS AND VANUATU**

A similar problem occurred with two other recent analyses of poverty in the Pacific: UNDP (2008) for the Solomon Islands, and VNSO (2009) for Vanuatu. Both these studies attributed their methodology to World Bank, both used expenditure as the welfare criterion, but both suffered the weakness pointed out by Haughton and Khandker (2009) when estimating the FPL and NFPL, with serious biases resulting in the poverty results and poverty alleviation guidelines.

**Table 7:** FPL, NFPL, BNPL for Solomon Islands in UNDP (2008)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C=A*B</th>
<th>D=A+C</th>
<th>Incidence of Poverty (Head Count Ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honiara</td>
<td>62.17</td>
<td>1.24</td>
<td>76.87</td>
<td>139.04</td>
<td>32%</td>
</tr>
<tr>
<td>Rural</td>
<td>27.48</td>
<td>0.44</td>
<td>12.11</td>
<td>39.59</td>
<td>19%</td>
</tr>
<tr>
<td>Solomon Is.</td>
<td>32.59</td>
<td>0.45</td>
<td>14.78</td>
<td>47.37</td>
<td>23%</td>
</tr>
<tr>
<td>Honiara:Rural ratio</td>
<td>2.3</td>
<td>2.8</td>
<td>6.3</td>
<td>3.5</td>
<td></td>
</tr>
</tbody>
</table>

*Source: UNDP (2008) Table 13 (p.25) and Table 14 (p.26).*

With the same method of estimating the FPL value as used by World Bank for Fiji, Table 7 above indicates that the urban:rural FPL ratio was estimated by UNDP (2008) to be a large 2.3, while the multiplier methodology resulted in a NFPL ratio of an even larger and totally unrealistic 6.3,
with the final BNPL ratio being a large 3.5. These are extremely implausible urban:rural ratios. It is therefore not surprising that the urban (Honiara) incidence of poverty was estimated by UNDP (2008) to be 32%, considerably larger than the 19% estimated for rural Solomon Islands, a completely implausible result given the indications of all other development indicators.

A similar methodological mistake was made by VNSO (2009). Using the same methodology for estimating the Food Poverty Line as used by World Bank in Fiji, the outcome was an urban:rural ratio of 1.9 in the FPL, a massive urban:rural ratio of 7.8 for the NFPL and a 3.3 urban: rural ratio for the BNPL.

Table 8: FPL, NFPL, BNPL for Vanuatu as estimated by VNSO (2009)

<table>
<thead>
<tr>
<th></th>
<th>FPL pAE pm (vatu)</th>
<th>NFPL pAE pm (vatu)</th>
<th>BNPL pAE pm (vatu)</th>
<th>Incidence of Poverty (Head Count Ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>2589</td>
<td>777</td>
<td>3366</td>
<td>11%</td>
</tr>
<tr>
<td>Vila</td>
<td>5034</td>
<td>6041</td>
<td>11075</td>
<td>33%</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>3064</td>
<td>1651</td>
<td>4715</td>
<td>16%</td>
</tr>
<tr>
<td>Vila:Rural ratio</td>
<td>1.9</td>
<td>7.8</td>
<td>3.3</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Vanuatu National Statistics Office (2009), Tables (i) and (ii), p. v.

It is not surprising therefore that the incidence of poverty for urban Vanuatu (Vila) was estimated to be a massive three times higher (33%) than for rural Vanuatu (11%) (last column Table 8). All other development indicators for Vanuatu indicate that rural poverty is far worse than urban poverty, contrary to the VNSO results. These arguments for Vanuatu are further elaborated in Narsey (2012).

For both Solomon Islands and Vanuatu, the “bad” nutritional choices made by urban households resulted in costly acquisition of calories much less than the 2100 kcals standard, which then resulted in the urban costs being scaled upwards to reach 2100 kcals, hence biased the urban Food Poverty Lines upwards. Conversely, the good nutritional intakes in rural areas resulted in rural FPL values being set at very low values, thereby biasing the BNPL values downwards.

For both studies, the NFPL values were selected effectively at superficially the “same” decile levels, which effectively, given that the “same” rural decile is considerably poorer than the corresponding urban decile by all indicators, meant that the symptom of poverty in rural areas of low NFPL values, became used as the “standard” for NFPL component in the BNPL.

With these poverty results for Vanuatu and Solomon Islands indicating that urban poverty is significantly worse than rural poverty, the guidelines for distribution of the poverty alleviation efforts and resources, would be biased towards the urban poor, out of proportion to their real needs, were more appropriate poverty lines to be estimated.

The weaknesses we point out in the use of poverty lines for minimum wages legislation or guidelines, are as relevant for Solomon Islands and Vanuatu, as they are for Fiji.
CONCLUSION

This paper began by arguing that poverty analysis, to be of relevance and financially justifiable to developing countries like Fiji, needed to be consistent and in harmony with the fundamental objectives of and to assist poverty alleviation practitioners: in the better targeting of poverty alleviation measures, providing accurate guidelines for total amounts and the sharing of poverty alleviation resources, appropriate guidelines in minimum wages legislation or guidelines, and to track the movement of poverty over time.

This paper has shown that the methodology adopted by the World Bank in its Fiji poverty analysis, and in particular, its method of deriving the FPL and BNPL values, results in a number of disadvantages for the poverty practitioners in Fiji: much higher estimates of the incidence of poverty in Fiji (Head Count Ratio) both for 2008-09 and 2002-03 than is the case; underestimates significantly the amount of poverty alleviation resources that are needed to be allocated to theoretically eliminate poverty, thereby reducing the apparent magnitude of the problem; gives significantly wrong signals as to the rural:urban division of poverty alleviation resources, incorrectly biased against the rural areas; fails to indicate the significant deterioration of the rural households between 2002-03 and 2008-09; and is not useful as FBS (2011) for the application of poverty lines as guidelines for minimum wages legislations.

This paper has indicated that similar mistakes in methodology seem to have been made in Solomon Islands and Vanuatu where there were other poverty analysts who also used the World Bank as the reference. The World Bank needs to rethink its poverty analysis methodology for middle income countries like Fiji.

NOTES

2 The FBS felt that households were reluctant to give information, soon after the 1987 military coups.
5 The methodology for the FPL basket of foods is fully described in Chapter 3 of Narsey (2008), while that for the NFPL is in Chapter 4.
6 The HIES data indicated significant dietary differences between Fijians and Indo-Fijians, and between rural and urban Fijians.
7 These values were estimated statistical values using regression on deciles 1 to 5.
11 With the 2008-09 HIES, the FBS decided that FBS (2010), FBS (2011) and FBS (2012) would be official FBS documents rather than individual consultant reports published by outside agencies, as Narsey (2008) was.

The World Bank (2011) do not give the substantial FBS (2011) based on income.

Narsey (2011) used the 2002-03 poverty lines and converted them to 2008-09, while World Bank (2011) used 2008-09 poverty lines and converted them to 2002-03.

The FPL basket for Fiji may be found as Annex A in Narsey (2012) and Table 3.2 in Narsey (2008). The FPL basket of foods used by the 1997 Fiji Poverty Report is Table 3.1 in Narsey (2008).

Co-incidentally, the FPL basket used by Narsey (2008), once fixed by weekly food plans, in terms of items and quantities, resulted in average calories of 2539 per Adult Equivalent for the four ethnic sub-groups and was therefore closer to the World Bank value of 2793 calories per Adult Equivalent.

This scaling factor has not been used in poverty analysis in the Pacific.

The middle point of the 2nd, 3rd, 4th and 5th deciles is roughly the 30th percentile value.

For political neutrality of implementation of poverty alleviation policies, one FPL value (and one BNPL value) for all ethnic groups has advantages, even if the costs of the different ethnic low-income diets are significantly different, as they can be in Fiji.

This is using Ravallion’s logic that the non-food expenditure of these households would be absolutely “basic”. This is subject to the criticism that already, if they are spending less than the FPL value on food, then their non-food expenditure is also severely constrained.

Both the Vanuatu and Solomon Islands HIES show dis-savings at the upper income brackets and savings at the lower income brackets.

Personal communication from WB consultant.

These numbers are not given in World Bank (2011) publication, but were given in a power-point presentation to the Fiji Bureau of Statistics in Suva.

These can include ethnicity, income source, province, division, or type of settlement, or other important characteristics that define the nature of households deserving of poverty alleviation resources.

Father Kevin Barr has been the Chairman of the Wages Councils.

The supporting foreword by Martin Ravallion (then Director of the Development Research Group of World Bank) and acknowledged expert on quantitative poverty analysis expressed the hope that practitioners who absorbed the lessons of the manual would bring “rigor and good sense” to their poverty analysis.

Effectively, both UNDP (2008) and VNSO (2009) used the FEI method while articulating their methodology as a Cost of Basic Needs approach.

A full critique of UNDP (2008)’s analysis of poverty in the Solomon Islands is given in Narsey (2011a).
REFERENCES


