This brief explores women’s views from socio-economic surveys undertaken in 2014 & 2016. Women’s answers as a group are explored separately from men’s. Observations are made on the study methodology, survey techniques, data and conclusions for resettled villages surveyed in the Upper Paunglaung Dam (UPL) area. Learning is drawn for future hydropower dam development and resettlement.
INTRODUCTION

Baseline data scarcity has been a critical gap for assessment of impacts of many capital and development projects in Myanmar. For the UPL project, an 18 factor socio-economic survey was conducted in 2014 and repeated in 2016. This paper introduces the socio-economic survey and disaggregated overall results and observations by gender.

Economic and social impacts of dam development and resettlement affect women and men differently. This study shows that women experienced economic opportunities and changes to social dynamics in the resettled villages in a unique way to men from the same villages. Recommendations for improved future practice are provided based on findings.

In Myanmar, there are 27 operational hydropower dams, nine under construction and 55 additional projects planned. As Myanmar’s energy mix for the future will include hydropower, it is critical to improve resettlement practice and ensure women’s rights are considered in the process.

ABOUT UPL DAM

- Department of Hydropower Implementation (DHPI) project
- 140 MW with generation capacity of 454 GW hours/ annum
- Purpose: to increase capacity in the national electricity grid
- Resettled 23 villages (2,524 households, 9,755 people)

TIMELINE

- 2005 DHPI starts feasibility study
- 2005–2013 dam project and resettlement planning
- 2013–2015 resettlement of villages
- 2014 dam commissioned

BACKGROUND TO SOCIO-ECONOMIC SURVEY (SES)

The SES was conceived and initiated by Dr Mie Mie Kyaw, of Mandalay University (formerly Pathein University), as part of an academic support program. The survey sought to provide extra input to biodiversity conservation work in and around Myanmar’s hydropower projects. The SES was considered critical as a means of studying “weak points as well as strong points” as part of the overall project. The instigator anticipated well the linkage of changing socio-economic conditions to further impacts from the UPL project in the biodiversity area.

Initially, data for 23 villages and 2,216 respondents was collected. Data analysis for the majority was not completed due to the large amount of work involved. Figure 1 below shows data analysis of 119 surveys for one village – Kan Hla. Survey questions assessed the 18 factors as shown in the tables and figures below. Answers to individual surveys allowed tri-variate responses – “Better than original conditions”, “Same as original conditions” and “Worse than the original conditions”. The analysis of data given below for the one village analysed shows a range of better and worse areas. The single village analysis demonstrates very clearly the potential value of such survey data to show community perceptions.

Immediate questions raised to an observer are:

1. How representative is this of all the 2014 data?
2. What would gender disaggregated data look like?
3. How do results differ by location?
4. How do both gender disaggregated and site results differ from the overall population?
5. How do results compare with data from a 2016 resurvey?

Analysis for “Women and Resettlement II & II” seeks to answer these questions, following on from the first observation.
1. 2014 Data - Kan Hia Village Responses
   Initial Analysis, Sample Size 119

2. Improvements Made - Sorted Differences in 2016 - 2014 Data:
   Change in percentage who ranked situation as "Better"

3. 2014 Data - Sorted Variation by Indicator
brief in the series. Only one of 23 villages had been analysed (Kan Hla), leaving 22 villages and 2,097 surveys for analysis. To tie these results to the qualitative surveys undertaken in 2016 and described in “Women and Resettlement”, a further 477 surveys were done in six villages in 2016.

Given the data volume, ways to simplify the data processing task were sought. Coding the tri-variate data simply as 1,2,3 greatly simplified analysis for specific population groups. Results could be consolidated as means and compared, along with other statistical measures. Differentials to the overall population means could easily be calculated, allowing simple exception analysis. Additionally, standard deviations in the population subgroups could give a view of variation within groups and comparative variation on survey indicators.

FURTHER ANALYSIS

Table 1 shows gender disaggregated summary analysis for both 2014 and 2016 data and the differences between the mean results for the two surveys. An important and not validated assumption is that the 2016 data, which is a considerably smaller sub-sample, is representative of the entire population, allowing direct comparison between the periods. Without complete population re-sampling, this is not possible to validate.

<table>
<thead>
<tr>
<th>Data Values:</th>
<th>Average</th>
<th>Std Dev</th>
<th>2014 Data</th>
<th>12.9%</th>
<th>2016 Data</th>
<th>21.6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Records</td>
<td>2216</td>
<td>477</td>
<td>374</td>
<td>103</td>
<td>2216</td>
<td>477</td>
</tr>
<tr>
<td>Education</td>
<td>1.52</td>
<td>0.90</td>
<td>1.33</td>
<td>1.20</td>
<td>1.52</td>
<td>0.90</td>
</tr>
<tr>
<td>Health Care</td>
<td>2.99</td>
<td>1.53</td>
<td>2.62</td>
<td>2.38</td>
<td>2.99</td>
<td>1.53</td>
</tr>
<tr>
<td>Economic Growth</td>
<td>2.77</td>
<td>1.30</td>
<td>2.33</td>
<td>2.04</td>
<td>2.77</td>
<td>1.30</td>
</tr>
<tr>
<td>Personal Income</td>
<td>1.82</td>
<td>0.85</td>
<td>1.61</td>
<td>1.52</td>
<td>1.82</td>
<td>0.85</td>
</tr>
<tr>
<td>Housing Standard</td>
<td>2.32</td>
<td>0.74</td>
<td>2.12</td>
<td>1.77</td>
<td>2.32</td>
<td>0.74</td>
</tr>
<tr>
<td>Access Roads</td>
<td>2.30</td>
<td>0.64</td>
<td>1.97</td>
<td>1.52</td>
<td>2.30</td>
<td>0.64</td>
</tr>
<tr>
<td>Religious Buildings</td>
<td>2.13</td>
<td>0.89</td>
<td>2.00</td>
<td>1.67</td>
<td>2.13</td>
<td>0.89</td>
</tr>
<tr>
<td>Water Supply</td>
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<td>0.74</td>
<td>1.67</td>
<td>1.39</td>
<td>1.86</td>
<td>0.74</td>
</tr>
<tr>
<td>Sanitation</td>
<td>2.18</td>
<td>0.87</td>
<td>2.07</td>
<td>1.67</td>
<td>2.18</td>
<td>0.87</td>
</tr>
</tbody>
</table>

FURTHER ANALYSIS

Table 1 shows gender disaggregated summary analysis for both 2014 and 2016 data and the differences between the mean results for the two surveys. An important and not validated assumption is that the 2016 data, which is a considerably smaller sub-sample, is representative of the entire population, allowing direct comparison between the periods. Without complete population re-sampling, this is not possible to validate.
Grouping and exception analysis was used rather than more complex mean comparison techniques due to the data characterization. (For example, data not being normally distributed, data not being continuous and sampling not being randomized were problematic for routine statistical analysis.)

Analysis assessed mean differences in the coded scales, corresponding to response changes (For example, ‘Same to Better’ is a change of 1 unit of the full population, 0.5 change represents 50% of population voting for ‘Better’). In general, coded scale changes of one-half of a division or more have been considered important.

**FINDINGS**

1. The simple socio-economic survey is an incredibly useful tool.
2. Providing infrastructure alone is not sufficient for resettlement success.

<table>
<thead>
<tr>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Much Worse</strong></td>
<td><strong>Somewhat Better</strong></td>
</tr>
<tr>
<td>Safeguards, Economic Growth, Personal Income, Standard of Farmland, Job Opportunities</td>
<td></td>
</tr>
<tr>
<td><strong>Somewhat Worse</strong></td>
<td><strong>Somewhat Better</strong></td>
</tr>
<tr>
<td>Community Development, Housing Standard,</td>
<td>Education, Health Care, Religious Buildings, Access Roads</td>
</tr>
<tr>
<td>Electricity Supply, Standard of Living,</td>
<td></td>
</tr>
<tr>
<td>Relocation Standard, Water Supply, Sanitation, Environmental Conservation</td>
<td></td>
</tr>
<tr>
<td><strong>Much Better</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td>Safeguards, Economic Growth, Personal Income, Standard of Farmland, Job Opportunities</td>
<td></td>
</tr>
<tr>
<td><strong>Somewhat Worse</strong></td>
<td><strong>Relocation Standard, Environmental Conservation, Sanitation, Water Supply</strong></td>
</tr>
<tr>
<td>Community Development, Housing Standard,</td>
<td>Relocation Standard, Environmental Conservation, Sanitation, Water Supply</td>
</tr>
<tr>
<td>Economic Growth, Personal Income,</td>
<td></td>
</tr>
<tr>
<td>Standard of Farmland, Job Opportunities</td>
<td></td>
</tr>
<tr>
<td><strong>Somewhat Better</strong></td>
<td><strong>-</strong></td>
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<tr>
<td>Education, Health Care, Religious Buildings, Access Roads</td>
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</tr>
<tr>
<td>Safeguards, Economic Growth, Personal Income, Standard of Farmland, Job Opportunities</td>
<td></td>
</tr>
</tbody>
</table>

3. Timing of service provisions and infrastructure is important (for example, health and electricity).
4. Critical gaps remain in economics, jobs and financially-related measures. Vastly different attention to this is needed from both men’s and women’s perspectives. Advance attention is possible if a broader consideration of socio-economic factors is made.
5. Female participation in the survey accounted for 12.9% of respondents in 2014 and 21.6% in 2016. In the 2016 survey 40% was targeted but was not achieved. Participation sampling was not randomized.
6. In 2014 ‘no vote’ measures were highest for 3 topics – electrification, relocation standard, and compensation.
7. In 2014 some women’s rankings were notably worse than men’s rankings:
   a) 61.2% women compared with 68.9% men rated religious buildings as “better”.
   b) 19.4% women compared with 27.8% men rated health care as “better”.
8. In 2014, three blocks of data were clear: Much worse, Somewhat Worse, Somewhat Better. By 2016, a fourth block of data emerged: Much worse, Somewhat Worse, Somewhat Better, Much Better.
10. Figure 2 shows ranked areas of improvement between 2014 and 2016.
11. In 2014, women’s rankings of improvements were different and less positive than men’s in the categories of health care and religious buildings. By 2016, women’s rankings were different and more positive than men’s in the categories of access roads, community development, relocation standard and standard of living.

**DISCUSSION AND CONCLUSIONS**

Results show the socio-economic survey can be considered extremely useful in simply measuring community inputs and helping capture community voices. Socio-economic study findings confirm those of other studies that describe the trauma and injustice of resettlement practice in Myanmar.

Unlike the qualitative survey work done through face-to-face interviews and reported in the first brief in this series, data analysis of the SES has NOT shown as great a difference between women’s and men’s views as expected. This is a key finding of itself. Because of the difference between qualitative and quantitative surveys, it suggests that more care may be needed in monitoring completion of the surveys to confirm that they are completed as expected. A finding which will be detailed in the third brief of this series is that there is considerably greater variation between location-based

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responses and gendered responses. This flows through to combined variation assessment of both gendered and location-based response variation. Considering women as an overall population subgroup in the UPL area masks these variations. Figure 3 shows overall variation by indicator. Two main groups exist.

Survey results from 2014 data for men and women were surprisingly similar for the overall population. For two categories “religious buildings” and “health care,” women’s ratings were less favorable than those of the men’s ratings. Survey results from 2016 data for men and women were again surprisingly similar for the overall population. In 2016, women’s ratings for four different categories – ‘access roads’, ‘community development’, ‘standard of living’ and ‘relocation standard’ – were more favorable than those of the men’s ratings.

The fact that the women have changed from being more negative than the men to more positive over the course of the two surveys is an interesting insight. Additionally, the factors in which women’s and men’s opinions are different have changed between surveys. That highlights the importance of assessing gender disaggregated data, as the differences between men’s and women’s opinions are unpredictable. Because of the delays between survey and analysis, incomplete insight exists on the reasons. Qualitative survey work suggests this would be due to the effect of the extremely low inclusion of women and the fact that they mainly receive second hand information, yet are concerned more about children, neighbours, community and the future than men are. In light of this and the combined insights from qualitative and quantitative studies, the lower 2014 ‘health care’ ratings and the four higher 2016 ratings are significant, both from a negative and positive perspective.

The 2014 difference regarding ‘religious buildings’ warrants further study, particularly due to the high variation by location. If future qualitative surveys are possible in advance of further quantitative studies, many additional questions can be added for further useful debrief. Most other results are quite similar. They are often in fact so similar that they may make one consider that there is no value in using a gender disaggregated approach, that gendered opinions were not different, or that there had been discussions between couples on the survey and that joint answers were entered. The fact remains that the differences are not predictable in magnitude or theme, so the analysis needs to be done.

Women’s rate of “no response” on some survey questions was slightly higher than that of men but not considered significantly different (For example, 3.6% vs 3.2%). Three questions had a higher default rate (relocation standard 4.9%, equal compensation 7.1% and electrification 8.8%). Explanation for the latter result is considered to be due to the fact that electricity service provision and extra compensation was still anticipated so some did not vote.

Analysis has been done retrospectively on the data, some of it four years after its initial collection. Analysis much closer to the time of resettlement would have allowed follow up of anomalies and better remedial response to communities’ concerns. Ongoing assessment will be useful to provide longitudinal data and updates of community experience post resettlement.

Earlier detailed analysis and attention to the results by the authorities could have reduced the traumatic impact period of the community resettlement by an estimated 5 years. This may have reduced incidence of male suicide and male out-migration rates from the area. As it is, negligible attention to easily identifiable economic and livelihood problems has taken place. More holistic initial planning using internationally accepted best practice principles, guidelines and formal grievance mechanisms could also have dramatically reduced the harmful
community impacts experienced as a result of the project and led to more positive and sustainable outcomes.

**RECOMMENDATIONS:**

**Learning from Socio-Economic Surveys and Analysis**

1. Continue use of this simple 18 factor tool in both 1) the UPL area to give further longitudinal data, 2) other projects in Myanmar.
2. Try other socio-economic survey techniques to gain experience with them.
3. Improve the value of studies done with timely data analysis and social research.
4. Consider more supervision for survey completion as part of any future surveys.
5. Explore further some of the unexplained differences. For example, why specifically is there a significant difference in the 2014 survey between women’s and men’s perceptions of health care and religious building quality? Why did women’s perceptions of religious buildings improve more than men’s by 2016? A host of questions remain unexplored and unanswered and these deserve further study.

**Increasing Inclusion**

6. Reduce disruption by phasing and planning relocations to lower stress and give better outcomes. Community understanding and communication is crucial for facilitating this. From qualitative surveys it is clear that increasing women’s participation in processes would assist.
7. Increase the participation of women to enhance the project results by being more inclusive.
8. Increase focus on women’s inclusion to provide higher female response rates.

**Prioritising Remedial Work**

10. Address issues identified in the UPL resettlement as an ideal test case that other projects could follow.
11. Establish a parliamentary committee or commission to oversee remedial attention to land availability and compensation and reframe guidelines for future resettlements.

**Improving Future Planning**

12. Use more holistic planning of projects to lessen community impacts.
13. Apply better baseline surveys and more timely conduct and analysis of surveys to help in follow-up of anomalies and assist in remedial works to address issues identified as problematic for communities.
14. Provide more pro-active attention to socio-economic and livelihood factors in resettlement projects.
15. Ensure planning is carried out so that electricity service with a well-publicised timeframe is available far earlier as this significant provision is a major positive change for communities between the 2014 and 2016 surveys.
16. Use specific Myanmar guidelines that increase inclusion and reflect international best practice.
17. Equip government and private sector staff with training and resources to follow guideline practices.
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