

Building Resilience in Eastern Indonesia Effectiveness Review – Summary Report



Oxfam GB Adaptation and Risk Reduction Outcome Indicator

July 2012

Acknowledgments:

We would like to thank the staff of Konsepsi, Koslata, and LP2DER Foundation for being so supportive during the exercise. Appreciation is also extended to Vina Titaley, Chatarina Rini, and Ihwana Mustafa of Oxfam GB Indonesia, and the Consultant, Hagung Hendrawan.

Executive Summary

Under Oxfam Great Britain's (OGB) Global Performance Framework (GPF), sufficiently mature projects are being randomly selected each year and their effectiveness rigorously assessed. One of the projects randomly selected for an effectiveness review is entitled Building Resilience in Eastern Indonesia: Management and Technical Support (IDSC35). As its name implies, the overall aim of this project was to provide technical and operational support to the Building Resilience Programme in Eastern Indonesia. However, rather than assessing the effectiveness of this technical and operational support, it was considered of greater interest to examine the effectiveness of the actual work carried out by this programme. The review, in particular, focused on the work of three of OGB's partner organisations – Konsepsi, Koslata, and LP2DER – that implemented this programme in 30 villages located in three districts – Lombok Utara, Lombok Timur, and Bima – of Indonesia's Nusa Tenggara Barat (NTB) province.

To assess the effectiveness of the programme in promoting resilience, a quasi-experimental impact evaluation design was implemented. This involved administering surveys to representative samples of 242 households located in 23 sub-villages targeted by the programme and 363 other households located in 23 similar sub-villages in adjacent areas that were not. The households from the intervention and comparison sub-villages were then compared against various outcome measures. Propensity score matching (PSM) and multivariable regression (MVR) were used in the statistical analysis of the data to reduce bias. The key area of interest examined through this process is the extent the intervention and comparison households differ in relation to characteristics that are assumed important for successfully reducing risk and adapting to emerging trends and uncertainty. These characteristics fall under five dimensions – livelihood viability, innovation potential, access to contingency resources and support, ecosystem health, and social capability.

The Building Resilience in Eastern Indonesia Programme, as implemented by Konsepsi, Koslata, and LP2DER, was primarily focused on affecting the characteristics falling under the latter dimension. And there is evidence generated through this effectiveness review that it was significantly successful in doing so. In particular, both men and women from the intervention sub-villages were found to have a) greater awareness of their respective village's disaster management plans; b) participated more extensively in disaster preparedness meetings; and c) received more disaster preparedness information. That being said, significant numbers of men and women in the intervention sub-villages appear not to have been significantly affected by the programme's activities. There is also evidence that the performance of the three partners in bringing about these positive results differs.

Overall, there is little evidence that the programme was successful in positively affecting the characteristics of the livelihood viability, innovation potential, access to contingency resources and support, and ecosystem health dimensions. This is not surprising, given that this was not the focus of the programme. Nevertheless, there is evidence that one of the implementing partners – LP2DER – positively affected several characteristics falling under the livelihood viability and innovation potential dimensions.

Based on the findings of this effectiveness review, the programme's stakeholders are encouraged to consider the following to strengthen their efforts in promoting resilience:

- Explore whether there are key differences in the way LP2DER implemented the programme and/or whether it carried out any complementary interventions that could be scaled-up elsewhere.
- Seek to understand why the effects of the programme under the social capability dimension are different for men and women.
- Consider informing future programming decisions based on the current status of each characteristic examined through this effectiveness review.

Introduction and Purpose

Oxfam GB has put in place a Global Performance Framework (GPF) as part of its effort to better understand and communicate its effectiveness, as well as to enhance learning across the organisation. As part of this framework, modest samples of sufficiently mature projects (e.g. those closing during a given financial year) are being randomly selected each year and rigorously evaluated. One key focus is on the extent they have promoted change in relation to relevant OGB global outcome indicators.

The global outcome indicator for the adaptation and risk reduction (ARR) thematic area is based on the extent households emulate characteristics assumed important for recovering from shocks and adapting to emerging trends and uncertainty. This indicator is explained further below. The work that took place in Indonesia in March and April 2012 was part of an effort to capture data on this indicator. The project randomly selected for the effectiveness review is entitled Building Resilience in Eastern Indonesia: Management and Technical Support (IDSC35). As its name implies, its overall aim was to provide technical and operational support to the Building Resilience in Eastern Indonesia Programme. However, rather than reviewing the effectiveness of this technical and operational support, it was considered of greater interest to examine the effectiveness of the actual work carried out by the programme. This programme was implemented through two projects implemented in Papua and Papua Barat provinces (IDSC38) and Sulawesi Utara, Sulawesi Tengah, Nusa Tenggara Barat (NTB), and Nusa Tenggara Timur (NTT) provinces (IDSC39).

However – given time, security, and budget constraints – it proved impractical to carry out the assessment in all areas where these two projects were implemented. Consequently, a decision was made to focus on NTB province, given that three of the programme’s six implementing partners are located in this province and there were relatively few security issues preventing access to the supported sites. Prior to data collection, three of OGB’s partner organisations – Konsepsi, Koslata, and LP2DER – had implemented disaster preparedness interventions in 30 villages located in three districts: Lombok Utara, Lombok Timur, and Bima.

Evaluation Approach

The Building Resilience in Eastern Indonesia Project aimed to substantially reduce disaster-related loss, including human life and the social, economic, and environmental assets which the communities it targeted depend. From a rigorous impact evaluation perspective, the best way to evaluate such an intervention would have been to restrict its implementation to randomly selected geographical areas, leaving other sites for comparison purposes, i.e. as controls. This impact evaluation design is known as a clustered randomised control trial. If this design had been used, the impact of the programme could have been assessed by directly comparing the outcome indicators for households residing in the implementation and control sites. If all went well, the randomisation process would have made the households in the intervention and control sites comparable in every way, save their participation in the programme.

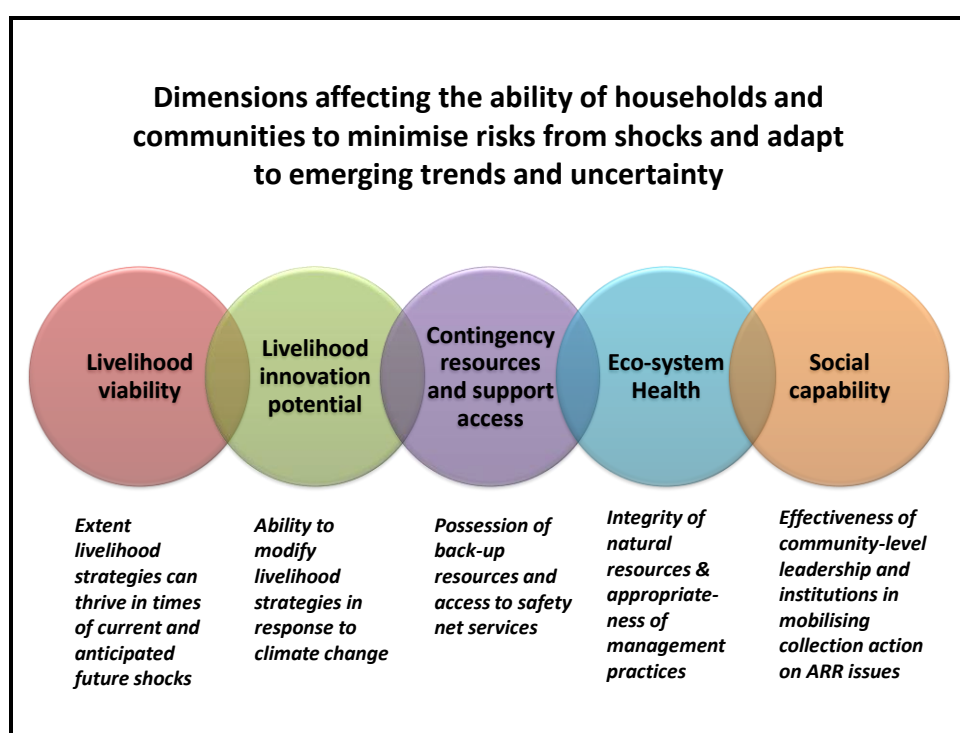
However, the programme was not implemented in randomly selected geographic areas; the sites where the programme’s activities were implemented were purposively chosen. An alternative impact assessment design was consequently pursued. This design is referred to as a quasi-experiment because it attempts to “mimic” what a randomised control trial does by identifying comparison groups that are similar to the supported groups, and then statistically controlling for any measured differences between them.

To implement the design, considerable time was spent mapping out areas in the districts where the Konsepsi, Koslata, and LP2DER implemented the project’s activities and where they did not. A total

of 23 of the 30 sub-villages where the programme was implemented were chosen for inclusion in the study. These villages were then matched with 23 similar villages from nearby areas but outside the project’s catchment area. Questionnaires were subsequently administered by 16 trained enumerators to 242 and 363 randomly selected households from the intervention and comparison sub-villages, respectively. During the statistical analysis of data collected through the administration of these questionnaires, propensity score matching (PSM) and multi-variable regression (MVR) were used to control for measured differences between the households of the intervention and comparison villages.

Outcomes Evaluated

As part of OGB’s Global Performance Framework, efforts are being undertaken to develop an innovative approach to measuring the resilience of households and communities to shocks and stress and their ability to positively adapt to change. This approach involves capturing data on various household and community characteristics falling under five interrelated dimensions:














Consequently, a key aim of the study was to assess whether the intervention households emulate these characteristics to greater extent than the comparison households. Evidence of this would give us confidence that the project was successful in building resilience. The review, therefore, investigated what evidence there is that the project positively affected the characteristics, both in aggregate and by dimension and specific characteristic.

It is important to bear in mind that the three partners – Konsepsi, Koslata, and LP2DER – through the Building Resilience in Eastern Indonesia Project did not attempt to affect all the characteristics falling under each of the five dimensions. In fact, their work, at least at the community level, was primarily focused on supporting the sub-villages to develop preparedness plans to ensure the effective and timely evacuation of local residents to safety in times of natural disasters. As such, assessing the project’s effectiveness in terms of affecting characteristics falling under each of these five dimensions is, from one perspective, unfair, given that it was not set up to do so. On the other hand, the data can be disaggregated in relation to those characteristics it did attempt to affect, and the results for the other characteristics can be used to inform future programming.

Impact Assessment Summary Table

The following summary table provides a snapshot of the key findings of the effectiveness review. A short narrative description related to each outcome or dimension then follows to unpack each key finding. A separate more technical report is also available. This report provides a more detailed and technical description of the evaluation design, process, and results. The table below summarises the extent to which there is evidence that the project influenced change in relation to the resilience dimensions in the form of a simple five-point “traffic light” system. The key to the right presents what the various traffic lights represent.

	Evidence supporting large impact
	Evidence supporting more modest impact
	Evidence of large impact, but only for specific sub-groups/measures
	Evidence of modest impact, but only for specific sub-groups/measures
	No evidence of impact

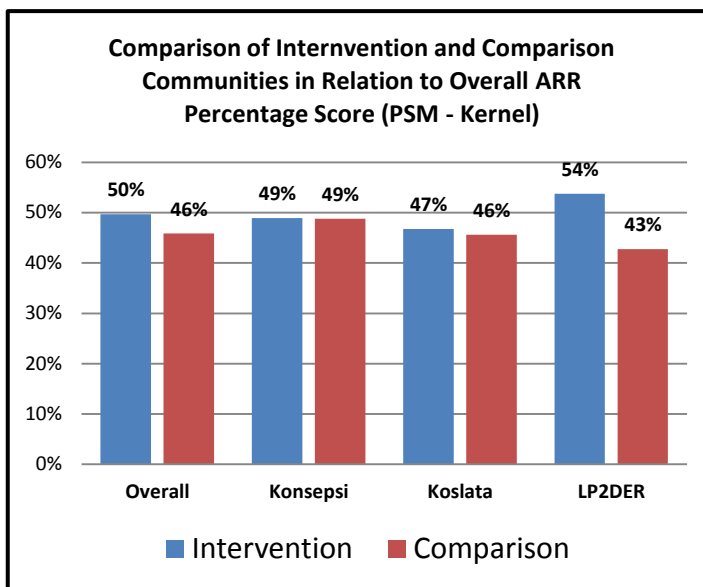
Outcome/Dimension	Rating	Short Commentary
OGB’s global ARR outcome indicator		Strongly significant and positive results only found for LP2DER.
Dimension 1 – Livelihood Viability		Strongly significant and positive results only found for LP2DER.
Dimension 2 – Livelihood Innovation Potential		Modestly significant results only found for LP2DER.
Dimension 3 – Contingency resources and support access		After controlling for baseline information for the characteristics scores, no evidence of impact – either overall or at partner level – was found.
Dimension 4 – Ecosystem health		After controlling for baseline information for the characteristics scores, no evidence of impact – either overall or at partner level – was found.
Dimension 5 – Social Capability		Significant differences between the intervention and comparison sub-villages identified for all partners, but with variation in the magnitude of these differences

Impact Assessment Findings

OGB’s global ARR outcome Indicator

Information was obtained through the administration of the questionnaire on 17 characteristics assumed important for reducing risk and adapting to emerging trends and uncertainty. Each household was assigned a score for each characteristic based on their responses to the questionnaire. The better the household was assessed to be in relation to the characteristic in question, the higher the score it was given and vice-versa the worse it was assessed to be. These scores were then added together and divided into the total possible score, thereby, creating a percentage score. This particular score, then, reveals how well the households fair in relation the characteristics overall.

As revealed in the graph to the right, a small, yet statistically significant difference in the overall percentage score was identified between the intervention and comparison households (p -value < 0.01). However, when the data are disaggregated by partner, there is only evidence supporting impact for LP2DER. In fact, the results for this particular partner are significantly robust to bias; unobserved bias would need to be over three times more prevalent among the intervention households in order to render the results statistically insignificant.



Comparing the intervention and comparison households in relation to the overall characteristic score gives an indication of how the project performed overall. However, this overall score does not differentiate those particular areas where the programme generated impact from those where it did not. Consequently, the data were analysed separately by dimension and each specific characteristic, the results for which are presented below.

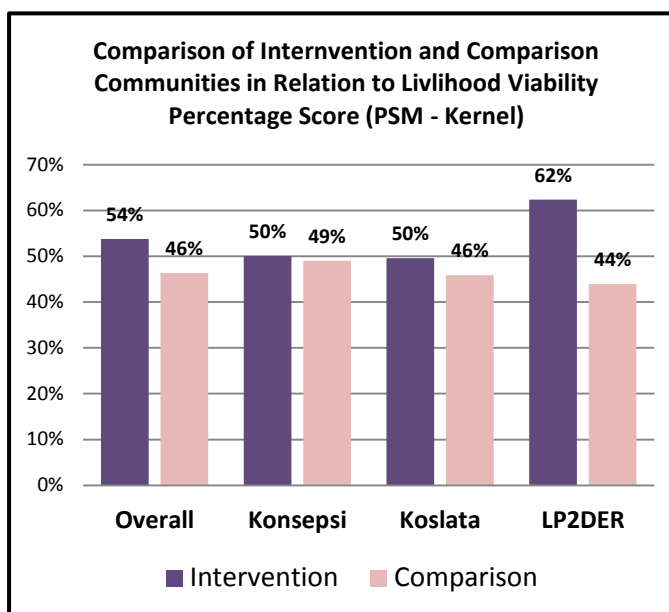
Dimension 1 – Livelihood Viability



One of the key questions the effectiveness review sought to answer was as follows: To what extent is there evidence that households in the intervention villages possess livelihoods that are more resilient to shocks than those in the comparison villages? To answer this question, data were collected on the following characteristics:

- Level of livelihood diversification
- Relocation/modifications to home, fields, livestock shelter, or asset storage
- Access to seasonal forecast information
- Access to disaster preparedness information

The intervention and comparison sub-villages were subsequently compared in relation to how they are fairing in relation to these characteristics. The graph to the right reveals that, overall, the intervention sub-villages are better off. However, when the data are examined at the partner level, it is clear that the results obtained for LP2DER are, again, the primary reason for the overall difference.



The strongest estimated effect of LP2DER’s work under the Livelihoods Viability dimension is related to increasing access to disaster preparedness information; households in the villages that it supported were significantly more likely to report having better access to such information.

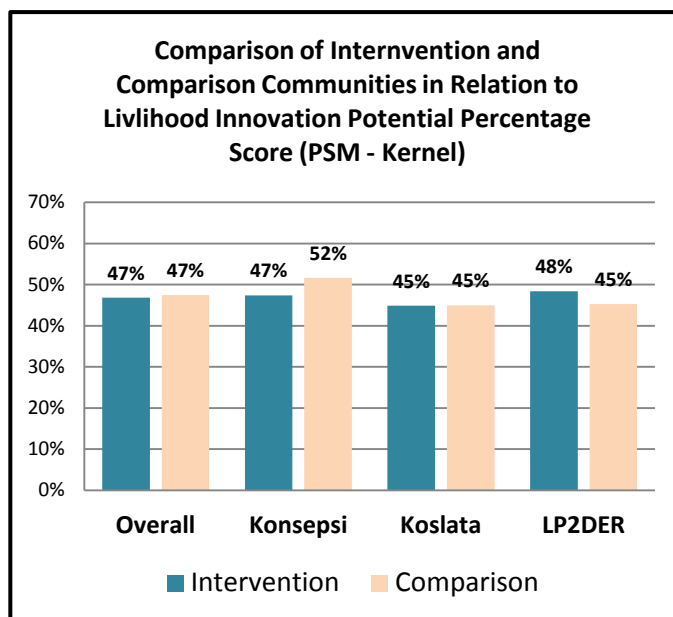
Dimension 2 – Livelihood Innovation Potential



Data were obtained on seven characteristics that were classified under the livelihood innovation potential dimension. These particular characteristics include:

- Motivation to pursue alternative livelihood strategies
- Attitudes about climate change
- Credit access
- Access to climate trend information
- Farming extension support
- Access to marketing information
- Access to livelihood innovation support

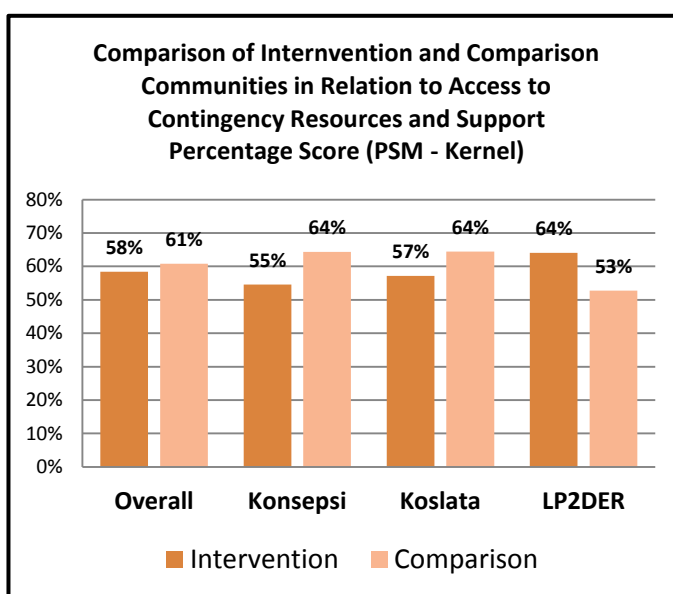
The scores obtained from each of these characteristics were again pooled together to obtain an overall score for the livelihood innovation potential dimension. The graph presents a comparison of the intervention and comparison communities in relation to this score. Overall, there is no difference between the two groups. However, at the partner level, there are differences for both Konsepsi and LP2DER that are modestly statistically significant. However, for Konsepsi, this difference is negative, given that the comparison households are actually slightly better off. For LP2DER, the primary characteristic that is driving its positive results is related to farming extension support. In particular, the household it targeted reported having significantly better access to such support than the comparison households.



Dimension 3 – Access to Contingency Resources and Support



Only two characteristics were examined under this dimension – *strength of social support system* and *access to contingency resources*. The graph presents the results of a comparison of the intervention and comparison groups for the percentage score computed for these two characteristics. The results are, yet again, only positive for LP2DER. However, when baseline data were incorporated into the analysis to examine differences in the magnitude of change experienced over time, it became clear that the households supported by LP2DER were likely already better off than the comparison households even before the project started. There is, consequently, no evidence that the project affected either of the two characteristics associated with this dimension.

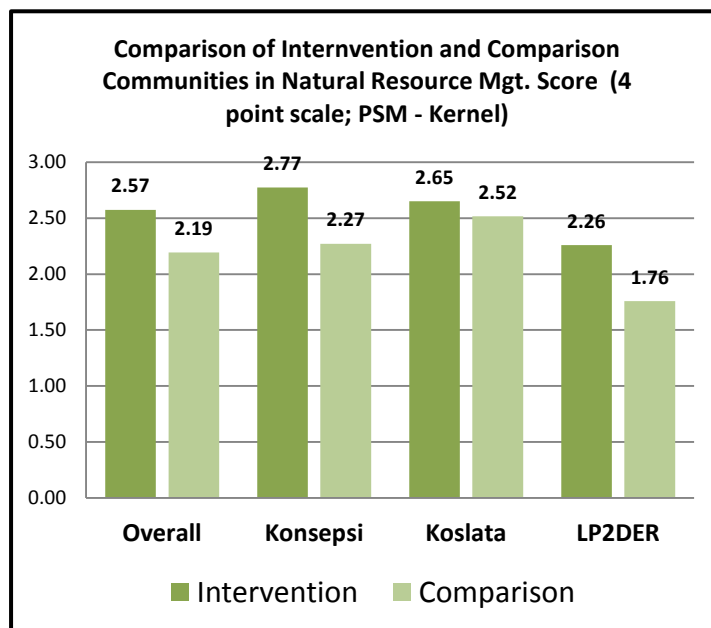


Dimension 4 – Ecosystem Health

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Data were captured only in relation to household natural resource management practices for the ecosystem health dimension. The impact evaluation question is, therefore, as follows: To what extent do the households in the intervention and comparison villages differ in relation to their pursuit of desirable natural management practices? To answer this question, respondents were asked if they have undertaken any of the following, both preceding and after the baseline period:

1. Planting trees to reduce the potential and negative impacts of floods and landslides
2. Planting crops within stands of already existing trees
3. Purposively leaving existing stands of trees in the household's farming area
4. Soil erosion or flood control measures, e.g. bunds, stones, contouring



The greater the household reported having undertaken these practices, the higher the score it was given. The results of a comparison of the intervention and comparison communities are presented in the graph. The overall results are statistically significant across all the estimation procedures both overall and for Konsepsi and LP2DER when viewed separately. However, when baseline data were, again, incorporated into the analysis to examine the extent household natural resource management practices improved since the baseline period, it became clear that the households residing in the sub-villages that Konsepsi and LP2DER supported through the project reported already being more engaged in such practices than were those in the comparison villages at baseline.

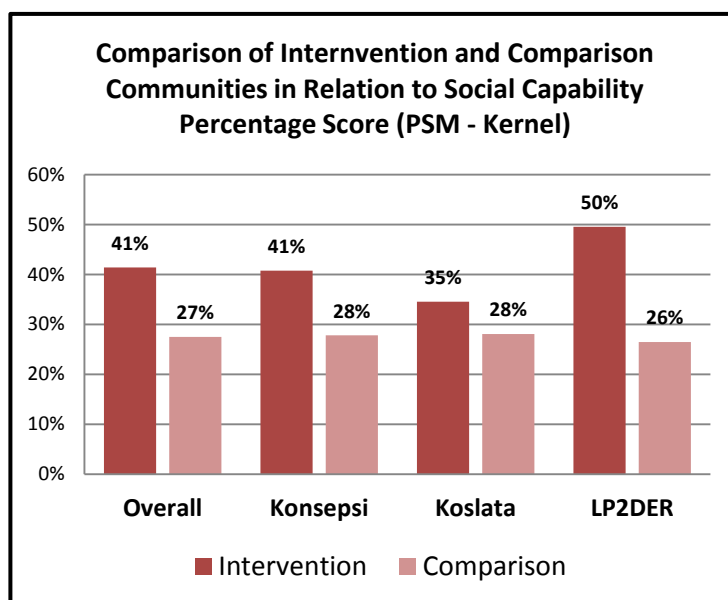
Dimension 5 – Social Capability

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As mentioned above, the Building Resilience in Eastern Indonesia project was primarily focused on preparing the targeted sub-villages to effectively respond to the primary natural disasters they face. Arguably, then, if the project was effective in this regard, there should be evidence that it affected the characteristics associated with the social capability dimension. Three characteristics under this dimension, in particular, were examined – *knowledge of village disaster management plan*, *participation in flood preparation meetings*, and *receipt of disaster preparedness information*. Collecting data on these characteristics involved interviewing the senior man and senior woman of each household separately. They were asked about: a) whether their village had a disaster management plan and, if so, the extent of their knowledge about its contents; and b) whether they participated in any disaster preparedness meeting and/or received any disaster preparedness information during the previous year and, if so, the number of times. The respondents were also asked to recall what the situation was like during the baseline period.

Scores were also compiled for each characteristic based on the responses of the interviewed men and women to the main questions and corresponding follow-up questions. For example, if a respondent reported having participated in one or more disaster preparedness meetings in the last 12 months, s/he was then asked the number of times. Higher scores were given to those who reported more extensive participation.

The graph presents the results of a comparison between the intervention and comparison households in relation to the overall scores compiled for the social capability dimension. As evident, the intervention households scored better – 41 percent, on average, compared with 27 percent for the comparison households. This difference is highly statistically significant and holds across all the various statistical procedures that were implemented. However, the effect estimates differ among the three partners, with the estimated effect being significantly greater for LP2DER.



However, the analysis also revealed three noteworthy observations: First, popular knowledge about and participation in the disaster preparedness initiatives taking place in the intervention sub-villages is far from complete: significant numbers of both men and women were found to have low levels of knowledge and participation. The second noteworthy observation is that there is a considerable difference in the results achieved by the project for both men and women in the intervention villages. Indeed, men seem to have participated and been affected to a greater extent than women.¹ The final important observation is the differences existing at the partner level. LP2DER, in particular, stands out as the partner that achieved the greatest impact under the social capability dimension, followed by Konsep. While statistically significant, the results achieved by Koslata are comparably smaller.

Programme Learning Considerations

Based on the findings of this effectiveness review, there are a number of points the project's stakeholders can consider to strengthen their efforts in promoting resilience:

- *Explore whether there are key differences in the way LP2DER implemented the programme and/or whether it carried out any complementary interventions that could be scaled-up elsewhere.*

As presented above, there is evidence that LP2DER affected the characteristics assessed in the effectiveness review to a greater extent than the other partners. Did it implement the project's interventions differently and/or did it carry out any other interventions in the targeted sub-villages, perhaps through another project? Understanding whether and, if so, how the approach and/or focus of LP2DER differed from the other partners would be valuable for programme learning purposes. However, if no such differences are identified, one possible explanation for the differing

¹ It deserves mention that the culture of the region under study is highly patriarchal. As such, the participation levels of women in the intervention sub-villages may have been even lower if the project's gender mainstreaming interventions were never implemented.

results may be related to context: Bima is more remote than the districts in which Konsepsi and Koslata implemented the project and, possibly, more conducive for achieving results.

- *Seek to understand why the effects of the project under the social capability dimension are different for men and women.*

The project explicitly sought to ensure that women participated meaningfully in and benefited from its core activities. However, there is evidence that men were more positively affected. What are the principal reasons for this? Did partner field staff really take sufficient action to engage women meaningfully in the project? It is important to note, however, the different results for men and women do not necessarily mean that the attempts made by the project to mainstream gender totally failed. If meaningful work was actually undertaken, it is quite possible that the situation could have been worse, i.e. the engagement of women in the project may have actually been much less if such efforts had not been undertaken.

- *Consider informing future programming decisions based on the current status of each characteristic examined through this effectiveness review.*

As also mentioned above, the effectiveness review examined many characteristics the project was not intentionally attempting to affect. It is hoped that this examination can be used to inform future programmatic work. Below is a list of all the characteristics assessed in the review. A rating of the status of each characteristic is then provided – good, fair, or poor. The rating is based on the characteristic scores for the intervention sub-villages only. The higher the characteristic score, the better the rating. Oxfam GB’s Eastern Indonesia programme team and the three partners are encouraged to consider whether tackling any of the characteristics with a poor or even fair rating may be important in future programmatic work. This, of course, does not mean that doing so is all that is required to promote resilience, but doing so may complement other initiatives and enhance overall impact.

Status of Individual Characteristics Among the Households of the Intervention Sub-villages

Dimension	Characteristic	Status
Livelihood Viability	• Livelihood diversification	Fair
	• Relocation/modifications to home, fields, livestock shelter, or asset storage	Poor
	• Access to seasonal forecast information	Fair
	• Disaster preparedness information	Fair
Livelihood Innovation Potential	• Motivation to pursue alternative livelihood strategies	Good
	• Attitudes about climate change	Fair
	• Credit access (formal and informal)	Poor (formal); Fair (informal)
	• Access to climate trend information	Poor
	• Farming extension support	Fair
	• Access to marketing information & support	Poor
Access to Contingency Resources and Support	• Access to livelihood innovation support	Poor
	• Social support system	Fair
	• Contingency resources, i.e. savings & “convertible” assets	Fair
Eco-system Health	• Natural resource management practices	Fair
Social Capability	• Knowledge of disaster management plan	Fair
	• Participation in disaster preparation meetings	Poor
	• Receipt of disaster preparedness information	Poor