



Post-distribution monitoring survey being conducted via mobile phone in Bima, Indonesia. Photo: LP2DER

# WORKING TOWARDS GREATER COMMUNITY RESILIENCE

Using information communications technologies to strengthen disaster mitigation and response in Indonesia

**Bima in Indonesia's West Nusa Tenggara province is highly vulnerable to floods. Oxfam is equipping a local partner to use mobile data collection tools to improve disaster planning and mitigation – and to implement timely and targeted emergency response. This case study gives an overview of the tools and their benefits and challenges.**

# 1 INTRODUCTION

Indonesia is one of the most disaster-prone countries in the world, regularly experiencing earthquakes, tsunamis, flooding and drought – a situation which is exacerbated by climate change and high levels of poverty.

In Bima in Indonesia's West Nusa Tenggara province, poverty is widespread. Communities and local authorities often lack the capacity to mitigate or respond to disasters. Many people work in the informal sector, for example as owners of small shops or household businesses. They therefore have little income security and are often forced to borrow from loan sharks just to meet their basic needs such as food, school fees and healthcare. People often struggle to repay their debts and spiral deeper into poverty. In emergencies, they are the worst hit and the least able to cope.

Oxfam's local partner, LP2DER (Institution for Community Participation and Development of Democracy and Economy), was established in 1997. It focuses on empowering local institutions and communities in disaster-prone areas to manage natural resources sustainably. Oxfam has been training members of LP2DER in the use of new technologies, both to improve the efficiency and impact of its resilience-building programme and, more recently, to support it in delivering emergency responses.

## 2 ICTS IN DISASTER MITIGATION AND RESPONSE

### **Empowering local people to map disaster risks**

In 2015/16, Oxfam introduced Epicollect+, a free, open-source data collection tool identified by the country team as being particularly relevant to its resilience-building work. This has enabled LP2DER to train local volunteers to collect data on smartphones, using a questionnaire that is designed to capture a range of information. This data is then used to create disaster-risk profile maps of individual villages, helping to highlight vulnerable areas and potential problems.

As well as capturing basic information on the location, the map includes demography, livelihoods, the history of floods or other disasters in the area, and GPS coordinates. The result is then overlaid on the existing map of Bima. Currently, 25 out of 38 target villages have been mapped.

These maps are used to inform work on key disaster-management issues by clarifying the exact location and size of slum areas in Bima, and highlighting potential areas that are vulnerable. For example, dense populations combined with lack of sanitation and sewerage services increases the risk of flooding; while small alleys and poor road access hamper rescue efforts in the event of fire or floods.

The information collected enables the authorities to prioritize investment in order to reduce risk and protect the most vulnerable locations and the people who live there. It also helps them to ensure that the Bima city plan does not cause people to become more vulnerable during emergencies. LP2DER Programme Manager, M. Yamin, explains: 'The maps are used to influence the local government, for example in selecting its intervention areas, such as improving firefighters' access.'

In the first year, the district mapping work was carried out with shared funding from Oxfam and the Municipal Authorities. It was overseen by the Local Disaster Management Agency, and implemented with the support of local volunteers and village officials who were trained as enumerators. In the second year, the programme was expanded to work with the Agency for Community and Village Authorities Empowerment, and will subsequently be continued by local government through the Regional Planning Agency.

## Using ICTs in emergency response

In December 2016, more than 100,000 people in Bima were displaced by flash floods following heavy rainfall. As part of the Scaling Humanitarian ICTs Network (SHINE) programme, Oxfam trained LP2DER staff in how to use the mobile survey tool Mobenzi to conduct assessments and post-distribution monitoring. This helped to increase both the speed and accuracy with which data was collected, in comparison with traditional paper-based methods.

This was the first emergency response that LP2DER had been involved in, and it proved to be an eye-opener and a useful learning experience for both Oxfam and its partner. Some of the lessons, and actions arising as a result of these, are highlighted below.

# 3 CHALLENGES AND RECOMMENDATIONS

LP2DER has found the integration of new technologies into its activities of great value. However, it has also noted a number of challenges with the new way of working. These include:

- Insufficient access to handsets to carry out data collection activities.

- Concerns about being able to source funds to pay for the different types of software if it is no longer working with Oxfam.
- Not all team members are familiar with the use of ICTs and may need additional support to use these new technologies.
- Not being involved in the design of emergency response from the beginning (Oxfam led the response design, but consulted LP2DER on decisions regarding the target beneficiaries, selection criteria and personnel involved).
- Concerns relating to the accuracy of GPS data captured via smartphones (learning from this, Oxfam disabled the GPS feature during the flood response to speed up the process, as it was not a priority at that time).

LP2DER's recommendations to Oxfam in responding to such challenges include:

- Ensuring that adequate financial support is provided for the purchase of software to facilitate long-term use without additional costs being passed to partner organizations.
- Investing in the purchase of mobile handsets that partners can use.
- Planning sufficient, regular capacity-building activities.
- Providing opportunities for partners to be involved in emergency response design from the start.

## 4 MOVING FORWARD

In response to this learning, Oxfam has provided additional training to LP2DER on Epicollect+ and Mobenzi and has supported its partner in implementing the action plan that it created following the flood response. This will build the skills of staff in using ICT in humanitarian work.

Partner staff and village volunteers are now able to use ICTs in emergency response and to support the development of village maps. As of June 2017 there are two LP2DER staff who have a good understanding of the basics of Epicollect+ and Mobenzi, from preparing questionnaires to collecting and using the data, and around 50 volunteer enumerators from different villages who can confidently use these applications.

### **Building partner capacity**

Building on this knowledge, Oxfam plans to further strengthen its partnership with LP2DER through:

- Taking a more integrated approach to capacity building and ensuring it takes place regularly.
- Assigning preparatory tasks and homework to partners before and after each capacity-building session, to keep skills fresh.

- Delivering a combination of theoretical and practical training materials over a shorter timeframe.
- Staging the training process – including training on preparing questionnaires; how to upload them to the system; how to transfer surveys to and from handsets, etc.

The intention is that LP2DER will master the technology and its application both in disaster mitigation and in response to large- and small-scale emergencies.

## **The journey continues**

Despite the challenges, LP2DER intends to continue using ICTs in its work to develop village maps with the local government in Bima, and as a tool for beneficiary registration and post-distribution monitoring in emergency responses. Significant appetite exists within the organization to continue building internal capacity on the use of ICTs at every stage of the process. Alongside this, LP2DER aims to ensure effective knowledge transfer between team members and village volunteers, and to influence the local government to adopt ICTs in disaster risk reduction strategies.

## The SHINE programme

The Scaling Humanitarian ICTs Network (SHINE) programme is a three-year multi-country innovation programme dedicated to exploring how information communications technologies (ICTs) can add value to activities across the humanitarian project cycle through improving the quality and efficiency of humanitarian aid. Launched in Ethiopia in 2014, the programme scaled to support activities in Mali, DRC, Iraq and Indonesia before coming to an end in March 2017.

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