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Baseline and End-Line Studies as Means to Analyze the Effectiveness of Community-Based Disaster Risk Reduction Activities

Summary

Monitoring and evaluation (M&E) forms a critical component of the program management functions of Myanmar Red Cross Society (MRCS) and under the on-going Disaster Risk Reduction (DRR) program, implemented in partnership with French Red Cross (FRC), the significance and the value of M&E is further highlighted by constituting different assessments - initial baseline survey, and end-line survey - within its structure. The baseline and end-line data collections, regarded as important reference points, are given special priority: establishing pre-test/post-test impact evaluation method in the targeted townships. The existing networks of Red Cross Volunteers (RCVs) are directly involved in the process of data gathering for initial baseline study and end-line survey at the completion of activities. The final outcomes of these surveys provide an insight into the impacts of the program and areas for improvement.

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Monitoring and Evaluation: An Indispensable Management Tool

In the research commissioned by International Federation of Red Cross and Red Crescent Societies (IFRC) and conducted by ARUP International Development in 2011 titled 'Key Determinants of Successful CBDRR Program', one of the nine determinants was identified as 'having adequate assessment, monitoring and evaluation procedures', which must be integrated throughout the entire length of the program in order for it to play a useful role (IFRC, 2011). Timely and reliable M&E supports program implementation with accurate, evidence-based reporting that informs management and decision-making to guide and improve program performance (IFRC M&E Guide 2011) and provides opportunities for stakeholder, especially beneficiaries, to provide inputs and feedbacks.

Perceived as a tool to measure impact and effectiveness of the activities, monitoring and evaluation (M&E) forms a critical component of the program management functions of Myanmar Red Cross Society (MRCS). Of all the on-going risk reduction programs of MRCS, only the Disaster Risk Reduction (DRR) program, implemented in partnership with French Red Cross (FRC), emphasizes the significance and the value of monitoring and evaluation by constituting different assessments.

The baseline and end-line data collections, in particular, are given special priority since they are regarded as important reference points. No impact evaluation system is in place in the SBDRR and CBDRM program. Under the CBDRR and UDRR program, baseline and endline studies are planned, but due to the fact that the programs just started, no detail information is available yet about the exact process.

Key M&E Activities in the Program Cycle

1. **Initial needs assessment:** To determine whether a program is needed and, if so, to inform its planning.
2. **Logframe and indicators:** The operational design of the program and its objectives, indicators, means of verification and assumptions.
3. **M&E planning:** Practical planning for the program to monitor and evaluate the logframe's objectives and indicators.
4. **Baseline study:** The measurement of the initial conditions (appropriate indicators) before the start of a program/ programme, against which progress can be assessed or comparisons made.
5. **Midterm evaluation and/or reviews:** Reflection events to assess and inform on-going program implementation.
6. **Final evaluation** (end-line survey): Measure made at the completion of a program (usually as part of its final evaluation), to compare with baseline conditions and assess change, to assess how well the program achieves its intended objectives and what difference this has made.
7. **Dissemination and use of lessons:** To inform on-going programming, to occur throughout the whole program cycle.

Source: IFRC M&E Guide 2011

Impact Evaluation Processes of Disaster Risk Reduction (DRR) Program

While no impact evaluation process has been in place in the first year of the program implementation, there was a change in the entire process in 2010 with the introduction of pre-test/post-test impact evaluation method which requires conducting an initial baseline survey of the targeted townships before starting any activity and a follow-up end-line survey at the end of activities. The Monitoring & Evaluation Officer of the DRR Unit is in charge of organising and supervising the realization of the surveys on community level, while the Education Officer is responsible to conduct the assessments in schools. The same set of questionnaires and forms are used for both exercises and the final output is an evaluation report prepared by comparing the baseline and end-line data to the pre-determined expected outcomes. Furthermore, interviews with key respondents are carried out after the end of the program to evaluate the impact of the DRR program.

Baseline Survey

Under the DRR program, the baseline study is undertaken right after the final selection of the target villages¹. Before the actual data collection on the ground, the M&E Officer of the DRR program, together with local authorities and VDMC members, selects 12 to 15 Red Cross volunteers (RCVs) from the to-be-assessed township to form an M&E team, one in each township. Each M&E team is provided with a 2-day basic training course on M&E concepts and baseline survey procedures.

The Objectives of the Survey

The overall objective of the survey is to identify the degree of understanding of risks and the preparedness status or risk culture at the community and household levels. The specific objectives are:

- To study the profile of the communities;
- To understand the community perception and attitude toward natural disasters; and
- To identify existing flood² preparedness and coping mechanisms at both household and village levels.



MRCS RCV is gathering data for the baseline study

Sampling and Data Collection

For baseline data gathering, a multi-sampling method is used: comprising quota and simple random sampling methods. First, the sample size is considered per village according to their population. In general, 10-20% of all households in one community are interviewed during the baseline survey. Then a respondent is randomly selected from eligible family members in each household based on the following criteria: the respondent has to be over the age of 15 years, he/she has to live in the targeted village and he/she can spare the time to answer the questionnaire. The survey follows a quantitative approach and employs face to face interviews by using semi-structure questionnaires. The interviews are usually conducted by the RCVs under the supervision of the M&E Officer.

¹ The selection of target communities is described in more detail in CBDRR Practice Case Study 1

² Special emphasis is given to flood hazards since it has been identified as a common hazard in all target areas.



Community members provide answers for the semi-structured interview that is used during the baseline and endline study

Data Entry and Analysis

For data entry, the M&E Officer designates 2 or 3 persons from M&E Team at the township level to enter the data into Excel database or Sphinx Survey Software³ which is then reviewed by the M&E Officer for analysis and preparation of the report. The report is then submitted to the MRCS Governance after being approved by the DRR Coordinator from FRC. The final report is for internal use only.

³ Depending on the township, a different analysis tool has been used. In some townships, only Sphinx Survey Software has been used, while in other townships both Sphinx and Excel have been used interchangeably.

End-line Survey

The structure of the end-line survey is the exact replica of the baseline study, providing same sets of information but at a different time line.

The Objectives of the Survey

The overall purpose of the end-line survey is to measure the success of the program by evaluating the outcomes and impacts. The specific objectives are:

- To provide data for comparison against initial baseline information;

- To measure the outcomes and impacts attributed by each component of the program; and
- To evaluate achieved results against the expected results of the program.

Sampling and Data Collection

The questionnaires used for the end-line survey are the same as that of the baseline study and so does the number of the sample size in each village carried out by the same M&E team of RCVs with M&E Officer as the key supervisor. For accurate comparison, the program tries to facilitate the participation of the same person, from the same household, as much as possible. Only in cases when that person is not in the village at the time of data collection, the team chooses another eligible person randomly from the rest of the family members.

Data Entry and Analysis

The data entry into Excel or Sphinx is undertaken by assigned 2-3 persons from the M&E Team. Review and analysis is again in the responsibility of the M&E Officer. The final report is regarded as an internal document, circulated only among the responsible MRCS and FRC personnel.

Impact Evaluation Process

In addition to the baseline and endline survey, additional interviews with key stakeholders in each of the communities are carried out to evaluate the impact of the DRR program. The interviews try to capture changes before and after the program within the community from the point of view of different stakeholders, their views on the gaps and improvements needed and their involvement in promoting DRR within their own communities. This data is only used as an addition to the quantitative data that was gathered during the surveys and tries to identify specific incidence that could act as lessons learned.

For inclusion in the impact evaluation report, the results from the baseline and endline survey are analysed together. In order to be able to analyze the data, some of the data had to be re-coded into a different format. In Kyon Pyaw Township e.g. firstly, the baseline data was formatted from the Excel into SPSS (Statistical Package for Social Sciences).

Secondly, the end-line data was reformatted from Sphinx to SPSS. Thirdly, responses for the open questions were re-coded together.

As mentioned before, depending on the township, the baseline and endline data is entered into a different statistical program. However, in nearly all townships, the final analysis was done using SPSS software⁴. The collective outcomes from the impact evaluation assessment and the decoded survey data are then presented in the impact evaluation report, the preparation process of which is led by the DRR Program M&E Officer with support from the staffs of DRR Unit.

The first part of the evaluation report compares the two groups of respondents. As mentioned before, if possible, the same respondents are interviewed; however, it is often necessary to choose another respondent as the original respondent from the baseline survey is not available when the endline study is carried out. By comparing the characteristics of the two groups of respondents, it can be assured that the groups are similar enough to draw conclusions based on the surveys. Furthermore, for each of the questions, the situation at the beginning of the program (baseline survey) is compared with the situation at the end of the program (endline survey) to see whether any changes can be seen. Another important part of the evaluation report is the plotting of the results which came out from the implementation of the program activities against the expected results that have been included in the logical framework.

Enabling Factors

- **Participation of the community:** High level of participation of the community and their willingness to spare some time to answer the questions could be contributed to their awareness of the hazardous situations surrounding them (living in the coastal area where cyclones and floods are frequent natural disasters)

⁴ In the case of Kyauk Tan Township, Excel was used for both baseline and endline data analysis as well as the comparative analysis in the impact evaluation process.

and the urgent risk reduction needs to improve their lives and livelihoods.

- **Commitment of RCVs:** Without the commitment of RCVs to visit the different program sites and conduct the surveys, there would be no possibility to have such a comprehensive assessment of the situation before and after the program implementation. The interest and commitment of RCVs to participate in the impact evaluation process is therefore one of the key factors that enables the whole process.
- **Application of uniform data collection:** Both the baseline and end-line surveys utilize the identical sets of questionnaires, managed by the same M&E Team and deal with the same respondents. Using the same questionnaire decreases the difficulties for the RCVs engaged in the data collection.



MRCs RCVs facilitate group discussions with community members

Challenges

- Even though the same questionnaire is used, there are inconsistencies when it comes to the data analysis tools. It was found that different statistical programs are used in different townships, and there are even inconsistencies about the selection of a statistical program when it comes to baseline and endline data analysis in the same township. The use of different statistical programs results in the need to re-code data which may result in difficulties and the loss of data.
- The current impact evaluation process follows a very strict schedule with the endline survey being conducted within a year after the baseline study. In some cases, the timing of the end-line data collection precedes some activities: for example in one village, the M&E team collected end-line data ahead of the distribution of shelter-related materials and the subsequent construction activities.
- Furthermore, due to the short time frame of one year that is allocated to each target township, baseline and endline studies are sometimes undertaken at the same time in two different townships. As the M&E Officer is responsible for the supervision of the whole process, he may not have the time to supervise the data collection/ data entry in both townships which could possibly reduce the quality of the data.
- The questionnaire used for the baseline and endline study is focused on CBDRR issues thereby missing important information about SBDRR and TBCB. Therefore, even though the DRR program has additional components besides CBDRR, not data is gathered to evaluate the effectiveness of these activities.

Lessons Learned & Recommendations

- The most important lesson learned from the evaluation process of the DRR program is how easy it would be to replicate the same process under other risk reduction programs of MRCS. The process relies on the existing MRCS structure at the ground, supported by the M&E Officer of the DRR Unit at HQ level. The Planning, Monitoring, Evaluation and Reporting (PMER) Officer in the DM division could act in a similar way to support RCVs to carry out the baseline and endline study in other program townships.
- In order to draw conclusions about the actual impact of a program, a long term approach including a number of "endline" studies over a couple of years should be put in place. After a year, some of the impacts may not be able to be seen yet and on the other hand, even though the endline survey shows an increase in disaster preparedness and awareness, this positive result could be gone within a year after the project ended. In order to be able to give valid estimations about the actual impact, a long-term approach is therefore needed and the current impact evaluation process is not sufficient.
- Furthermore, the impact evaluation process should follow a less strict schedule to ensure that the endline survey is only carried out after all program activities have been implemented in that specific community to be able to measure the impact/ effectiveness of all program activities.



MRCS RCVs on their way to collect data in a remote village

References

- International Federation of Red Cross and Red Crescent Societies (IFRC) Program Monitoring and Evaluation (M&E) Guide 2011, downloadable at <http://www.ifrc.org/Global/Publications/monitoring/IFRC-ME-Guide-8-2011.pdf>.*
- International Federation of Red Cross and Red Crescent Societies (IFRC) Key Determinants of a Successful CBDRR Program: Community Based Disaster Risk Reduction Study conducted by ARUP International Development, September 2011, downloadable at http://www.ifrc.org/PageFiles/97406/Final_Key_Determinants_Report_plus%20Appendices.pdf.*
- Myanmar Red Cross Society (MRCS) Impact Evaluation Report 2011 in Kyon Pyaw Township*

CBDRR Practices is a series of case studies that illustrate good practices of disaster preparedness and mitigation undertaken by the Myanmar Red Cross Society (MRCS) with the goal of reducing the vulnerabilities and risks on the communities living in hazard-prone areas in Myanmar.

The series with 5 case studies analyse of real-life experience, good practice and lesson learns from the past activities of MRCS in more than 7 provinces and 39 townships in Myanmar. These include awareness generation, capacity building (NDRT/ERT), volunteerism, school preparedness, risk reduction activities in rural and urban settings, and mainstreaming DRM in recovery etc. This practice documentation is best used as a learning input, inspirational trigger and tool for replication.

These case studies are being developed under the initiative to develop CBDRR Framework for Myanmar by the Myanmar Red Cross Society with the help from the IFRC and the PNS such as French Red Cross (FRC), Canadian Red Cross (CRC) and American Red Cross (ARC).



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