Asian Urban Disaster Mitigation Program

AUDMP Working Paper #3

Lessons Learned from Community Based Flood Mitigation and Preparedness Project in Cambodia

August 2001

Prepared by the

Cambodian Red Cross

International Federation of Red Cross and Red Crescent Societies

Pact Cambodia

adpc

Asian Disaster Preparedness Center

Bangkok, Thailand www.adpc.ait.ac.th

The Cambodia **Community Based Flood Mitigation and Preparedness Project** was launched in September 1998 under the Asian Urban Disaster Mitigation Program. The objective of the project is to establish sustainable, replicable non-governmental mechanisms for disaster mitigation and preparedness with a focus on flooding. Under the demonstration phase of the project, Red Cross volunteers were trained and supported to implement a community-based disaster preparedness and mitigation process at the village level in three highly flood-prone provinces along the Mekong River. The CBFMP was jointly implemented by Cambodian Red Cross, Pact and The International Federation of Red Cross and Red Crescent Societies.

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Acknowledgements

It is with great pleasure that ADPC presents this working paper on Lessons Leaned from Community-Based Flood Mitigation and Preparedness Project (CBFMP). The CBFMP is one of the national demonstration projects under the Asian Urban Disaster Mitigation Program (AUDMP). The AUDMP, which is currently being implemented in Bangladesh, Cambodia, Laos, India, Indonesia, Nepal, Philippines, Sri Lanka, has demonstrated successful methodologies and approaches in mitigating the impact of the natural disasters in the region. During implementation of the national demonstration projects by country partners, there has been continuous building of knowledge and experience emanating from the country projects. The national demonstration projects have produced wealth of knowledge in the form of hazard maps, reports, proceedings, review of policies, documentation of various events and activities, etc.

The Cambodian CBFMP implemented by the Pact Cambodia in partnership with the Cambodian Red Cross (CRC) and International Federation of Red Cross and Red Crescent Societies (IFRC) in Kandal, Prey Veng and Kampong Cham provinces bordering the Mekong River and the northwestern area around Tonl'e Sap focuses on training of Red Cross Volunteers and implementation of mitigation solutions by communities for reduction of flood risk in selected vulnerable communities located in above three provinces. The CBFMP approach has demonstrated increased preparedness of the target communities to face extreme flood events like the one in the year 2000. The report provides an overview of the status of the target communities and impact of the project before and after the year 2000 floods.

This report highlights the process, methodology and strategy adopted by the project partners and their approach in implementation of activities of Cambodian CBFMP. The purpose of making this report available is to share the lessons learned from implementation of the CBFMP with those promoting flood risk mitigation in their respective constituencies at community, city and national levels and to impart learning from the experiences of the national demonstration project activities carried out by this Project.

ADPC congratulates CRC, IFRC and Pact and the communities engaged in implementing the mitigation solutions, for successfully implementing the demonstration project activities. ADPC appreciates the continuous efforts of the partner institutions in promoting the community based flood mitigation activities in Cambodia. The initiatives taken by them for mitigating the flood risk, loss of lives and damage of properties from devastating flood events through the active participation of some of the most vulnerable communities in the Mekong river basin will be of great value to those engaged in similar activities in the region.

We hope that you will find this report useful and we look forward to receiving your comments.

Dr. Suvit Yodmani

Executive Director
Asian Disaster Preparedness Center
Bangkok, Thailand

August 2001

Introduction

The Community-Based Flood Mitigation and Preparedness Project (CBFMP) was initiated in 1998 as an effort to reduce the vulnerability of rural villagers to natural disasters. The CBFMP project's objective was to establish sustainable, replicable non-governmental mechanisms for disaster mitigation and preparedness. This objective was to be achieved through utilizing the organizational network of the Cambodian Red Cross (CRC) as the implementing agency with technical support and training provided by the International Federation of Red Cross and Red Crescent Societies (Federation) and the Asian Disaster Preparedness Center (ADPC).

Specifically, the CBFMP project was designed to address the problems of flooding in Cambodian rural communities along the country's two major watersheds, the Mekong River and the Tonle Sap. Although the flooding along the Mekong and Tonle Sap rivers and the Tonle Sap Lake are a naturally occurring annual phenomena that supplies water and nutrients for agriculture, in certain years the flooding is excessive and damaging. On the occasions of excessive flooding, destruction of irrigation works, road infrastructure, crops and livestock, homes and an array of community infrastructure is normally experienced.

This review of the CBFMP project involved two different assessments over an eleven-month period between June 2000 and April 2001. Each is presented in this working paper in two separate parts, with the first part comprised of the CBFMP *Evaluation Report* of August 2000 and the second part comprised of the CBFMP *Post-Flood Assessment Report* of April 2001. The first evaluation was conducted by Michael Barton with Yok Bunna of Ponlok and the second assessment was conducted by Michael Barton with Touch Thearat of Pact.

The initial evaluation of the CBFMP project was conducted to determine the general effectiveness of the project at the end of its second year implementation. In order to develop community-based solutions in Cambodian villages that are prone to seasonal flooding, the CBFMP project undertook to empower people in local communities and, in turn, provide them with a higher degree of security from natural disasters. Major components of the project included training local village volunteers in Disaster Preparedness concepts and techniques, and having village disaster committees implement participatory processes to identify solutions to reduce the impact of natural hazards to their community. The evaluation of the CBFMP included surveys of Red Cross Volunteers (RCVs), the members of the village disaster committees, and local villagers in fourteen target villages where projects had been completed. These villages were located in three separate districts in three target provinces most prone to seasonal flooding.

In the aftermath of the year 2000 floods, an additional opportunity was provided to make a further determination of the impact of the CBFMP project. Common consensus holds that the severity of the 2000 flood throughout Cambodia was of a level that not witnessed in four to seven decades. Thus, the *Post-Flood Assessment* of the CBFMP project was conducted in the context of an uncommon natural disaster rather than for the normal seasonal flooding that occurs and for which the RCVs had been trained. Generally speaking, the volunteers had neither the means nor the technical experience to cope with the effects of such a high magnitude flood that caused a tremendous amount of damage over a prolonged period of time. Therefore, arriving at indicators of what the RCVs had achieved, and gaining some insight into how community members perceived the actions and conduct of the RCVs under formidable conditions would provide a valuable indication of the overall effectiveness of the project and suggest areas for improvement in the overall training program.

The three target provinces were chosen particularly for their proneness to natural disasters as a result of the 1996 floods in the Mekong River basin. The appropriateness of this selection was borne out by statistics garnered from the 2000 flood that indicated that the three target provinces of Kandal, Kampong Cham, and Prey Veng shouldered a high percentage of the death and destruction brought by the flood (see Table).

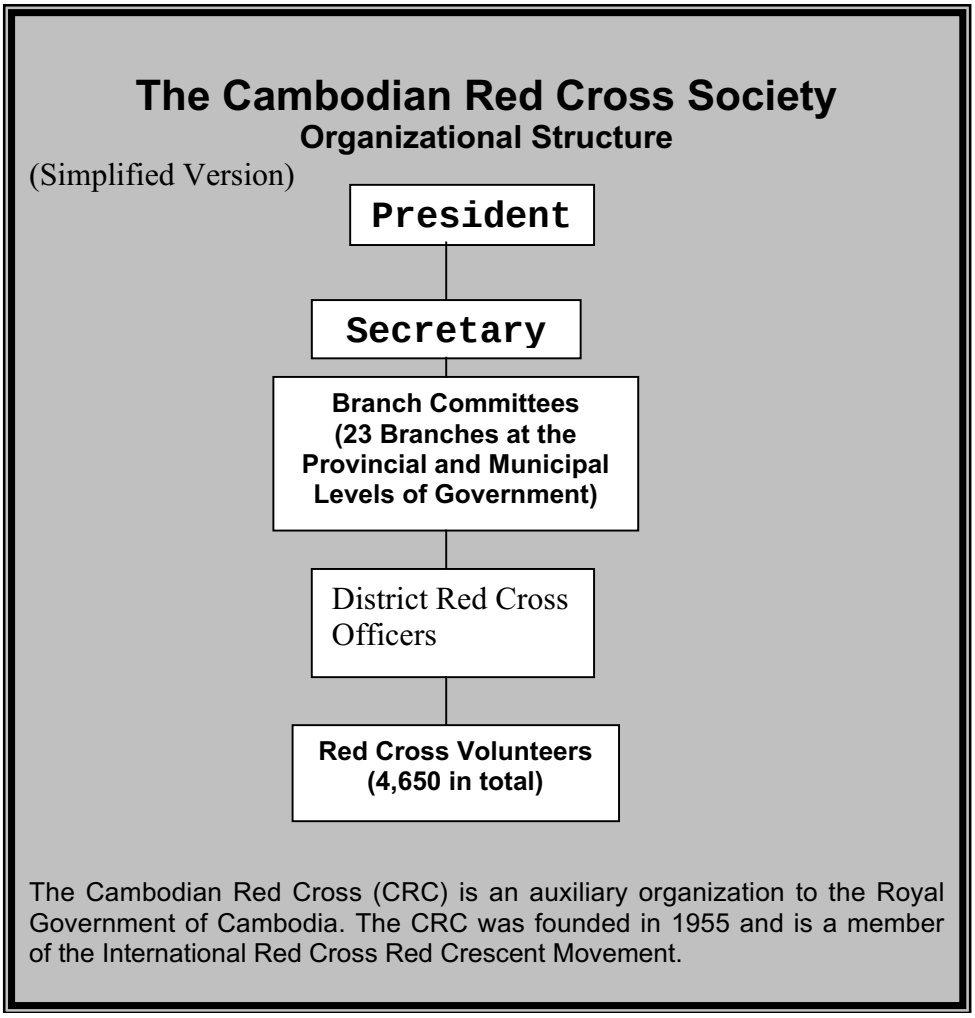
Cambodian Red Cross Statistical Summary of
the Year 2000 Flood

	Country Total	Total of Three Target Provinces	Percentage of Country Total
Flooded Villages	4,623	1,969	42.6%
Affected People	3,639,598	1,780,718	48.9%
Deaths	388	215	58.4%
Rice Crops Destroyed	413,662 ha.	128,512 ha.	31.1%
Other Crops Destroyed	24,621 ha.	17,970 ha.	73.0%
Houses Destroyed	12,903	4,033	31.3%
Wells Contaminated	13,689	11,965	87.4%

With respect to the CBFMP *Evaluation Report*, the results of the surveys generally revealed that the project had a positive impact on the participating communities. Villagers were appreciative of what had been accomplished, and for the most part, the process to find a solution that would contribute to mitigating the impact of the seasonal floods was undertaken using the traditional

organizational structures that were present within the villages. Constraints affecting the project process centered on the inexperience of the RCVs and a lack of resources within the target communities, making the completion of the project solution in each respective community dependent on outside financial support. The lack of internal resources within the target communities also meant that, for many of the target communities, the solution that was eventually pursued was not the one that was initially identified as their priority flood mitigation need. Financial and material constraints had prevented them from undertaking a solution that would address a higher degree of their flood mitigation needs. In the end, however, the RCVs stressed that they had gained confidence in undertaking tasks of this nature and they had also gained the trust of their fellow community members.

The results of the surveys conducted for the CBFMP *Post-Flood Assessment Report* revealed similar findings in terms of an overall positive impact of the actions of the RCVs both before and during the period of the 2000 flood. Villagers noted activities that had not previously been accomplished in their communities in preparing and confronting the flood. It became evident that the RCVs served to motivate members of their respective communities in efforts to cooperate and assist one another. In some instances, misconceptions regarding the roles and responsibilities of the RCVs worked to hinder the effectiveness of the RCVs or lowered the esteem that would have normally been given to them by the local villagers. Additionally, RCVs in some districts voiced concerns over inadequate lines of communication between the RCVs in the local communities and Cambodian Red Cross officers within the organization's hierarchy that they felt reduced their effectiveness.

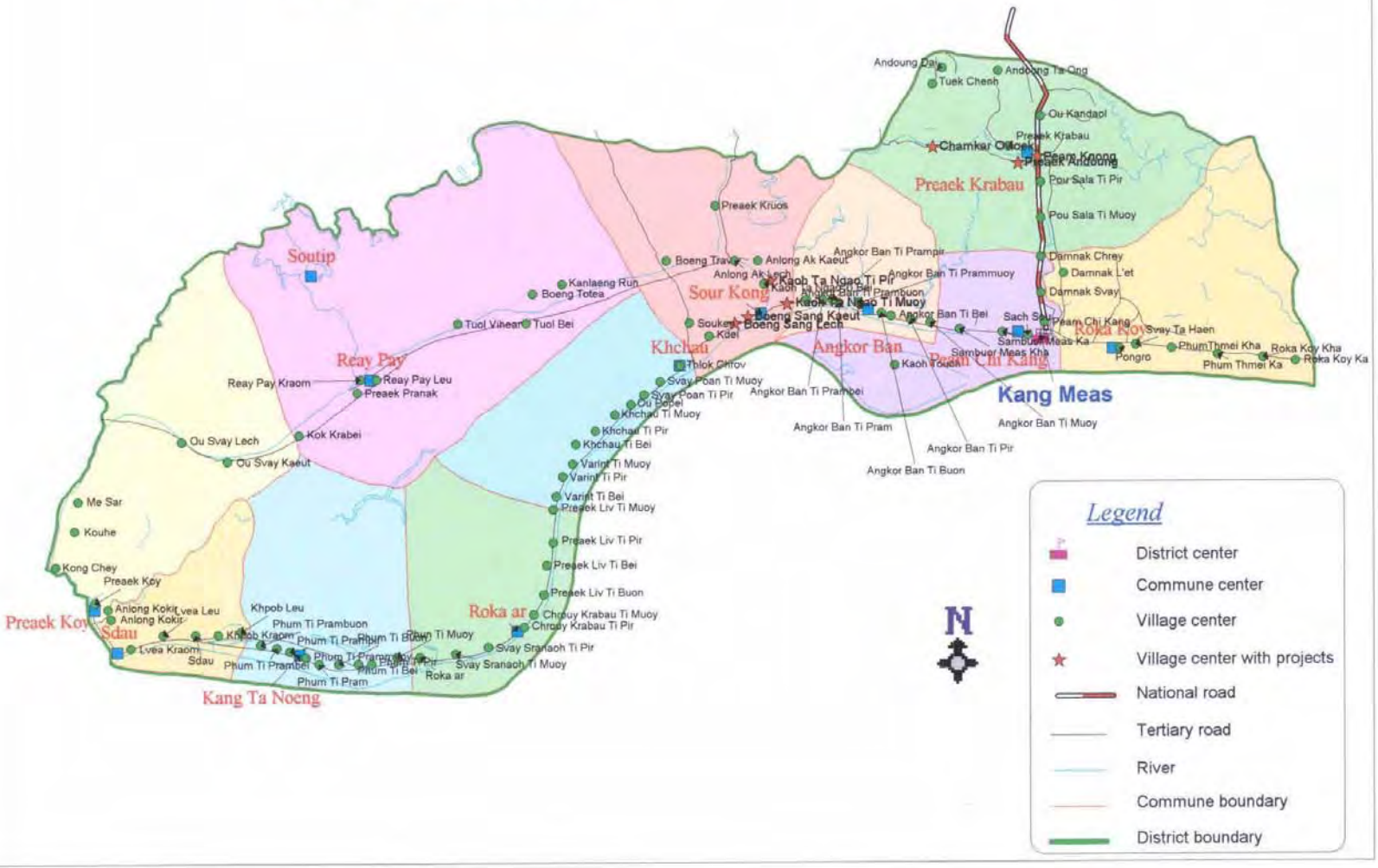


In reviewing both the CBFMP *Evaluation Report* and the *Post-Flood Assessment Report*, a sense of the effectiveness of the CBFMP project process can be made in terms of the impact that has been made in each of the communities that participated in the project. Local villagers have been made aware of the concept of Disaster Preparedness and now have some understanding of how the utilization of this concept can influence the impact of seasonal flooding on their communities. Correspondingly, the RCVs have gained confidence in accepting an important role in their communities and proving themselves in the eyes of the members of their respective communities. More of an appreciation of this achievement can be realized when considering the adverse conditions these volunteers have had to cope with in undertaking their activities. The CBFMP model represents a significant potential resource to Cambodian communities at risk of flooding.

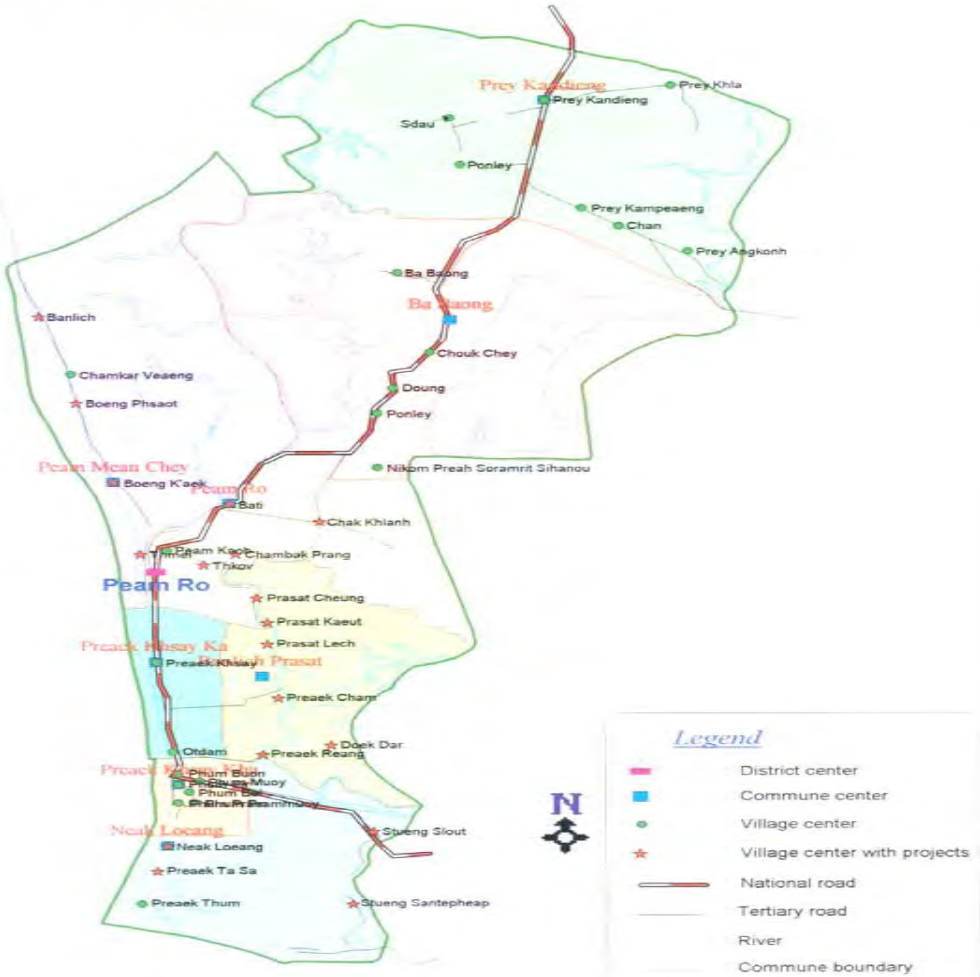
MAP OF CAMBODIA

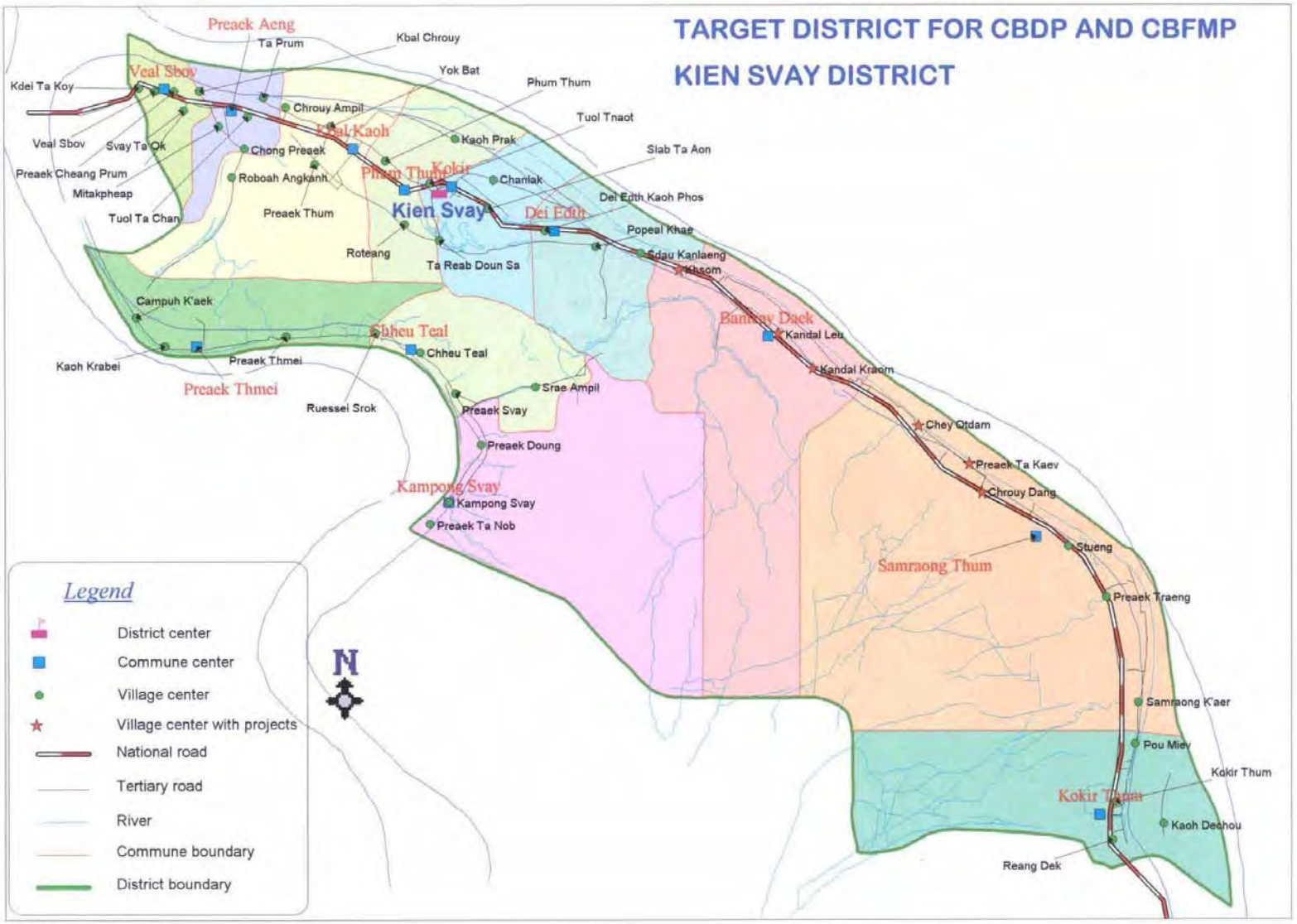
TARGET DISTRICT FOR CBDP AND CBFMP

KANG MEAS DISTRICT



TARGET DISTRICT FOR CBDP AND CBFMP
PEAM RO DISTRICT




TARGET DISTRICT FOR CBDP AND CBFMP
KIEN SVAY DISTRICT
Preaek Aeng
Ta Prum
Kbal Chrouy
Yok Bat
Phum Thum
Tuol Tnaot
Slab Ta Aon
Veal Sbov
Kdei Ta Koy
Veal Sbov
Svay Ta Ok
Preaek Cheang Prum
Mitakpheap
Tuol Ta Chan
Chrouy Ampil
Chong Preaek
Roboah Angkanh
Preaek Thum
Kbal Kaoh
Kaoh Prak
Phum Thum
Kokir
Chanlak
Kien Svay
Dei Edth
Dei Edth Kaoh Phos
Popeal Khae
Sdau Kanlaeng
Akhsom
Roteang
Ta Reab Doun Sa
Campuh K'aek
Kaoh Krabei
Preaek Thmei
Preaek Thmei
Chheu Teal
Chheu Teal
Ruessei Srok
Srae Ampil
Preaek Svay
Preaek Doung
Kampong Svay
Kampong Svay
Preaek Ta Nob
Bantay Daek
Kandal Leu
Kandal Kraom
Chey Otdam
Preaek Ta Kaev
Chrouy Dang
Stueng
Samraong Thum
Preaek Traeng
Samraong K'aer
Pou Miev
Kokir Thum
Kokir Thum
Kaoh Dechou
Reang Dek
Legend
District center
Commune center
Village center
Village center with projects
National road
Tertiary road
River
Commune boundary
District boundary
N

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THAILAND
DANGKREK MOUNTAINS
LAOS
EASTERN HIGHLANDS
POIPET
ANGKOR WAT
SIAM REAP
BATTAMBANG
STUNG TRENG
MEKONG RIVER
TONLÉ SAP
TRAT
PURSAT
TONLÉ SAP RIVER
CARDAMOM MOUNTAINS
PHNOM AORAL (1813 M)
KOMPONG CHAM
UDONG
PHNOM PENH
0 50 km
MOC BAI
HO CHI MINH CITY (SAIGON)
GULF OF THAILAND
KOH KONG ISLAND
KAMPOT
KEP
CHAU DOC
MEKONG DELTA
MYTHO
VIETNAM
STH CHINA SEA

Cambodia

Section One

Evaluation Report of the Community Based Flood Mitigation and Preparedness Project (CBFMP)

Section Two

CBFMP Post Flood Assessment

1. Executive Summary

The floods of the year 2000 in Cambodia were some of the most devastating in recent memory. These floods have been characterized by some as the worst in 40 years and by others as the worst in 70 years. They are notable for their intensity and duration, starting as early as July (one to two months early) and not subsiding until the middle to the end of November. Some communities in the most affected provinces actually experienced two successive floods during this period. Throughout Cambodia, the floods resulted in almost four hundred deaths, a considerable loss of livestock, and extensive damage to infrastructure and personal property. The added consequence of the flooding was increased sickness and disease among the affected population as well as food shortages that could last for extended periods of time.

The floods also followed on the heels of the two-year initiative of the Community-Based Flood Mitigation Preparedness (CBFMP) project initiated by the Asian Disaster Preparedness Center through the Asian Urban Disaster Mitigation Program (AUDMP). The CBFMP project was implemented through a Memorandum of Understanding between Pact Cambodia, the Cambodian Red Cross (CRC), and the International Federation of Red Cross and Red Crescent Societies (the Federation). The CBFMP project was conducted under the Community-Based Disaster Preparedness (CBDP) program of the CRC.[*] Administration of the project was established through a management committee structure and it was designed to train village volunteers in community-based disaster preparedness concepts, methods, and techniques in order to deal with the impact of annual flooding in their communities. Over the two years of the project, over 150 Red Cross Volunteers (RCVs) were trained in three target districts in three provinces.

In a follow-up to the project evaluation report completed in August 2000 (see Barton and Yok, *Evaluation of the Community-Based Flood Mitigation Preparedness Project*, The Cambodian Red Cross), it was decided that the year 2000 floods provided an opportunity to gauge the effectiveness of the program on the country's most vulnerable communities. Although, consideration must be given to the fact that the training provided to the RCVs was for the purpose of dealing with normal flooding situations that occur on an annual basis in these communities and not for catastrophic floods such as that in the year 2000. The significance of such an assessment was also recognized with respect to serving to institutionalize the CBDP process. In doing so, replicability of the program will be enhanced at the community level and within the CRC's training program.

The post-flood assessment process took place over three weeks from mid February to the beginning of March 2001. Interviews were conducted in four villages in Kandal province, five villages in Kampong Cham province, and five villages in Prey Veng province. Besides interviewing the RCVs, interviews were

[*] The acronyms CBDP and CBFMP appear interchangeably throughout this document. The CBDP refers to the program conducted by the CRC and the CBFMP refers to the project initiated by the Asian Disaster Preparedness Center through the AUDMP, and which funded this phase of the CBDP.

conducted with members of the village disaster committee, and local villagers affected by the flood.

The post-flood assessment was conducted for the purpose of gaining an insight into the experience of the RCVs, both with respect to the period leading up to the floods as well as for the duration of the floods. Additionally, the interviews endeavored to identify if aspects of the training program had contributed to the RCVs effectiveness, as well as identify areas where training could be enhanced. Indicators that would provide some determination of the effectiveness of the RCVs in their communities included the flood mitigating effects of actions taken that centered on disaster preparedness activities and examples of community mobilization. Other indicators focused on problems encountered by the RCVs, determining the level of support the RCVs received from the CRC, and suggestions for how their performance could have been improved. A final indication of the effectiveness of the RCVs that was gleaned from the survey data related to community attitudes towards the RCVs. A separate section then summarizes the survey findings into broad categories indicating effectiveness and constraints.

The CBFMP training provided the RCVs with a definite set of skills and the knowledge that enabled them to impart various ideas and concepts to local villagers that related to Disaster Preparedness and flood mitigation solutions. The program in which they have participated has also provided them with a degree of confidence to undertake some initiatives and organized activities within their communities in order to reduce the impact of the seasonal flooding.

While the vast majority of villagers resorted to the usual coping mechanisms upon which they have relied upon year after year, they have recognized the impact that the RCVs had on their community as a whole. Most villagers noted some activities that were unique to their communities that the RCVs initiated in collaboration with local authorities and were useful in mitigating the effects of the flood. Maintaining ongoing communications with the different levels of the Red Cross offices was also important in ensuring the effectiveness of flood mitigation activities the RCVs endeavored.

Differences were apparent from district to district in each of the target provinces. The geographical characteristics of each district determined the impact of the flood, and thus, determine the strategy pursued. Additionally, individual personalities in each district played a significant role with respect to community organization and participation.

In each target community, the RCVs have served as motivating examples for the rest of the community with regard to their attempts to mitigate the effects of seasonal flooding. However, a misconception that the RCVs are responsible for relief and rehabilitation may, in some instances, have lowered the regard with which the members of the community hold the RCVs. Here, additional information is needed to clarify roles and responsibilities. Overall, the RCVs have established a foundation upon which community mobilization efforts can be built and expanded over time.

2. Post-Flood Assessment Mission and Methodology

The post-flood assessment was conducted for the purpose of determining the effectiveness of the trained RCVs in their individual communities after having gone through the experience of the floods of 2000. Coming to some determination of the effectiveness of the RCVs in these communities would then offer an indication of the effectiveness of the training provided under the CBDP program. This assessment also provides an opportunity to gain an indication of the problems and constraints encountered as well as perceptions of the level of support received from the CRC officials during a disaster situation.

The CBFMP project was initiated in 1998 in an effort to develop mechanisms for disaster mitigation and preparedness by the communities themselves. The organizational capacity of the CRC was utilized through its role as the implementing agency, with technical support and training being provided by Pact Cambodia, the Federation and the AUDMP of the Asian Disaster Preparedness Center. The first two phases of the CBFMP project were designed to address the affects of the annual flooding that are experienced in the Cambodian rural communities that are most vulnerable to floodwaters of the Mekong River. The training received by the village volunteers was intended to provide an awareness of disaster preparedness issues and concepts so they could inform the villagers of these issues in their individual communities and discuss specific techniques and initiatives to mitigate the effects of the seasonal floods. With the 2000 floods over, an opportunity presented itself whereby an assessment could be made of the impact and the experience of this major flood in the communities that had volunteers trained in CBDP methods. Additionally, some determination as to the necessity of enhancing certain aspects of the training program could be made as a consequence.

The methodology utilized to undertake this assessment and obtain specific data related to the activities of the RCVs and the mitigating impact of the flood was to conduct a series of semi-structured interviews in designated villages that participated in the CBFMP project. Three sets of survey instruments were designed in order to gain the insights and perspectives of the Red Cross volunteers (see Appendix ‘H’), the village disaster committee (see Appendix ‘I’), and from the villagers themselves (see Appendix ‘J’). Introductory remarks informing each group of interviewees of the purpose of the assessment, as well as introducing the interviewers, accompanied each set of survey instruments.

The survey instruments were developed to include specific indicators in an effort to reveal the extent of the effectiveness of the RCVs in their villages. Indicators within the survey instruments centered on aspects of disaster preparedness initiatives, flood mitigation activities, and community mobilization efforts, as well as particulars of constraints and problems encountered. Additional indicators within the survey instruments referred to how the villagers perceived the role and performance of the RCVs, and how the RCVs themselves feel they are perceived by the villagers in their community. Other indicators refer to the level of support received by CRC officials and suggestions as to how the performance of the RCVs could have been improved.

The fourteen villages where the surveys were conducted were the same villages that took part in the research contributing to the CBFMP evaluation. These designated villages included Phum Khsom, Chhey Udom, Prek Takeo, and Chhroy Dong in Kien Svay District, Kandal province. In Kampong Cham province, the designated villages were Prek Andong, Peam Knong, Boeng Sang Lech, Koh Ta Ngor I, and Boeng Sang Kert in Kang Meas district. In Prey Veng province, the designated villages were Prek Cham, Phum Thmey, Boeng Psauth, Ban Lech, and West Prasath in Peam Ro district. Each of the fourteen villages had also completed a flood-mitigation project in their community. Thus, the end result would be a data gathering process whereby at least 42 sets of surveys would be completed in these communities, with over 220 people being interviewed.

Originally, it was planned that a CRC trainer would accompany the Pact program officer to each of the village survey. Unfortunately, this did not result due to the conflicting training sessions of the CRC trainers. A CRC trainer did accompany the Pact program officer and the managing consultant during the test survey conducted in Phum Khsom, Kandal province on Monday, February 12th. After the Pact Program Officer (Mr. Touch Thearat) completed the survey with the RCVs and with the local villagers an initial assessment of the survey instrument was made. A brief review of the survey instruments was then made and some minor alterations were incorporated into the survey instruments for the remainder of the village surveys.

Additionally, a meeting was held with Mr. Richard Neville, Disaster Preparedness Coordinator for the Federation, Mr. Steven Sharp, Country Representative for Pact Cambodia, and Mr. Michael Barton, Managing Consultant in attendance. This meeting was held in order to discuss the proposed direction that the assessment would take and to clarify the desired output of assessment. The results of this meeting were documented and shared with the Pact Program Officer, Mr. Touch Thearat, in an effort to confirm the direction of the survey and refine the survey instrument itself.

The remainder of the village surveys were conducted over a three week period ending on March 9th. The Pact Program Officer conducted the surveys, with the managing consultant supervising on the first day of interviews in each province.

The methodology employed for this assessment has resulted in a process that has collected data for a qualitative analysis of this program. Therefore, it should be clarified that this survey design was not intended to compile data for quantitative analysis purposes.

3. Survey Findings

The data gained from the surveys conducted in the fourteen target villages has been divided into seven indicative groupings. These groupings provide an overview of the impact of the CBFMP training in terms of the perceived mitigating effects of the activities of the RCVs, and the activities conducted by the RCVs to prepare and mobilize their respective communities. Indicative

groupings that provide an insight into factors that influenced the effectiveness of the RCVs include:

- general problems encountered;
- the perceived adequacy of support received from the CRC;
- suggestions for improvement, and;
- community attitudes towards and impressions of the RCVs.

3.1 Mitigating the Impact of the Flood

Determinations regarding the mitigating effects of the RCVs activities with respect to the 2000 flood were gained from the survey responses of the RCVs themselves, as well as from the village disaster committee and local villagers. Inquiries to this end focused on the activities in the communities that were initiated by, or in conjunction with, the RCVs during the period of flooding that could be attributed to the training they received. Additionally, general impressions were derived from the village disaster committee and the villagers as to whether these people felt that the impact of the flood would have been different without the activities of the RCVs. The village disaster committee and the villagers were also asked what they could identify as unique activities in the community that were not previously done even under normal flooding conditions in order to reduce the impact of the flood.

- The Volunteers Responses

For the volunteers in each community, they expressed that the training they received helped them on several levels in terms of coping with the recent flooding and for providing some assistance to their community. In one respect, the training was viewed as a tool that gave RCVs the confidence to discuss Disaster Preparedness issues with villagers in an effort to initiate preparedness activities and raise general consciousness of the concept of Disaster Preparedness within the community. There appeared to be a consensus among the RCVs in each province that the training was adequate in terms of providing them with the knowledge and skills in prevention and preparedness in order to help them in their role in preparing the people in their community. However, a respondent in Prek Cham village in Prey Veng explained that even though he thought that the training was not completely adequate, the Disaster Preparedness skills the RCVs attained still allowed the community to be better prepared than in previous years. In this respect, the RCVs recognized and appreciated the practicality of the training they received in terms of placing their respective communities in conditions of preparedness.

Some RCVs noted that they had not received the complete training program when it was conducted. A total of five RCVs in two villages in Prey Veng advised the surveyor that they had only received training in Module III of the program. The RCVs who had attended the Module I and II sessions of the training program were replaced by the current RCVs at the discretion of the District Red Cross officer.

The RCVs related that they were active in providing information on Disaster Preparedness to members of their respective communities in an effort to

mitigate the effects of the flood. This was an activity that they noted was never done before. Other specific activities undertaken by the RCVs in order to reduce the impact of the flood was to obtain sandbags, create an early warning system by keeping track of the water levels, and listening to the FM radio to hear the forecasted flood levels.

More circuitously, RCVs cited their efforts in completing damage assessments and need assessments that were reported to the District Red Cross office, as well as participating in Red Cross relief distribution as contributing to mitigating the effects of the flood.

The RCV's activities were commonly undertaken in collaboration with the local authorities from the village chief level to the commune chief level. Other local organizational structures identified by the RCVs as important in terms of successfully fulfilling their duties included Wat Committees and village group chiefs who are responsible for up to 18 families in the village. Utilizing such local organizational structures was viewed as the most effective way to mobilize the community and mitigate the impact of the flood.

Factors that hampered the ability of the RCVs to better mitigate the impact of the flood was expressed by volunteers in Prey Veng who said that they lacked training in relief (except with respect to CBFA). This was likely to have been seen more in terms of how they perceived it had reflected on their performance in the eyes of their fellow villagers.

– Responses of the Village Disaster Committee and Local Villagers

The responses from the Village Disaster Committee and the villagers reflected their perceptions on how the RCVs' activities helped to mitigate the effects of the flood in terms of specific actions and the provision of information and relief. Actions of the RCVs were identified with respect to using boats to monitor the damage, making assessments of needs and preparing reports to the District Red Cross officials. Other actions centered on obtaining sandbags in the districts in Kampong Cham and Kandal. In Kampong Cham, sandbags were placed in three locations in Prek Andong village alone. RCVs made requests for sandbags from the District Red Cross officer.

"Disaster Preparedness is better understood now and makes it easier to get support from villagers." - Village Disaster Committee member, Chhey Udom, Kandal

The RCVs' activities were normally conducted in collaboration with the village disaster committee. This included providing information on Disaster Preparedness such as how to protect their livestock and prepare food for them, how to inhibit the spread of disease, and the need to move houses from along the Mekong. In Phum Khsom in Kandal province, a member of the village disaster committee commented that the RCVs assisted in moving 27 families to the high road built by H.E. Chea Sim. Additionally, village disaster committee members and villagers in Prey Veng and Kandal reported that the RCVs provided

"We did the same as before, a new activity was to move houses from along the Mekong River."- villager, Boeng Sang Kert, Kampong Cham

Chloramine to purify their water supply. Also, in Prey Veng, the RCVs arranged to have those villagers with boats help evacuate the poorer villagers, although these villagers were required to pay for the fuel.

Although the villagers appear to have willingly participated in activities initiated by the RCVs, their comments are usually framed within qualifying remarks related to individual coping mechanisms. A villager from Prek Takeo in Kandal province expressed this in relation to the magnitude and force of the flood where, “the water rose fast…everyone relied on their own strategies.” However, there was a general recognition among the majority of villagers that the RCVs worked hard to do the best they could under difficult conditions. Nonetheless, their efforts were deemed, by and large, to have had a mitigating effect on one of the worst floods in recent memory. While the villagers relied largely on their normal coping strategies, they also identified specific actions of the RCVs that were not done during previous floods. Specifically, providing preparedness information, moving houses along the Mekong River, filling sandbags, as well as other organized activities.

Flood damage to project road in West Prasath (Prasath Lek), in Prey Veng.

3.2 Community Preparedness

Indications of preparedness in the villages were gained from inquiries of the three sets of respondents in each community with respect to actions undertaken before the flood in order to prepare their community. Inquiries were also made of the village disaster committee members and the villagers as to whether or not there was a disaster preparedness plan in their community, or failing this, was there an organized set of activities intended to prepare the community for the flood.

– The Volunteers Responses

The RCVs took the opportunity presented by community gatherings at special events or traditional ceremonies to advise people of specific Disaster Preparedness actions they needed to consider. Specifically, the RCVs advised the villagers to be ready to evacuate to higher ground, or to advise people of possible dangerous situations. These dangerous situations centered on vulnerable people living on or near riverbanks and children being near high or fast moving water. In one example, a total of ten houses that were located along the Mekong River in Koh Ta Ngor I village in Kampong Cham were dismantled and moved on the instructions of the RCVs who also assisted in the task. The RCVs also announced particular planned activities requiring the villagers' participation. Addressing the villagers at community events also provided the opportunity to get ideas and inputs from community members. Additionally, the RCVs facilitated village meetings with the cooperation of the village chief and the village disaster committee. These meetings served as venues to discuss preparedness actions and measures that would mitigate the effects of the flood, as well as to assign responsibilities and duties to villagers.

The filling of sandbags by members of the community of the community was a major activity in the target districts of Kampong Cham and Kandal provinces. Sandbags were either placed along roadways or along riverbanks. The RCVs in Boeng Sang Lech in Kampong Cham, together with the village disaster committee, actually bought sandbags on credit in order to have a sufficient amount on hand. The three villages in Kang Meas district in Kampong Cham that had built a berm on their main access road as their flood mitigation project made a concerted effort to protect what they had built. More dirt was added to the road berm and this was reinforced with sticks. Unfortunately, the strength of the floodwaters washed away their efforts. In Prey Veng and Kampong Cham target districts, boats from within the communities here were prepared for the time that people would have to be evacuated. Villagers with boats were also advised to assist poorer villagers during the evacuation period.

Prek Andong Village, Kang Meas District, Kampong Cham

Through the organizational efforts of the RCVs and the District Red Cross Officer, the villagers worked together to prepare sandbags to be placed in three strategic locations around the community. For one roadway, sandbags were filled and placed along the roadside for ten days throughout the highest flooding period. The protective sandbag structure that resulted was 200 meters long, one meter high, and two sandbags wide. Approximately 200 people were deployed in each of the three locations where sandbags were placed for a total of about 600 people active in the Disaster Preparedness activities in this village.

Respondents from each of the target districts related that the RCVs called the villagers together for a meeting in order to provide Disaster Preparedness information, or did this at a Wat ceremony. The information provided by the RCVs focused on how and what to prepare for the flood period. These respondents confirmed that the RCVs discussed issues from water sanitation to preparing boats and stockpiling food for livestock, as well as advising those living along the riverside to move their houses. Other preparation activities in

which the majority of villagers acknowledged that they participated actively along side the RCVs included filling sandbags (1000 sandbags prepared in Boeng Sang Kert, Kampong Cham) and efforts to protect the community flood mitigation project.

A community's access to safe and secure high ground logically reduced the level of preparedness required. A villager in Phum Khsom in Kandal explained, "villagers [here] live close to the high road built by H.E. Chea Sim and can move there easily. We did not need a lot of preparation."

3.3 Community Mobilization

The RCVs in each community were asked specifically what procedures they employed in order to mobilize members of the community to mitigate the effects of year 2000 flood. They were also asked what community mobilization efforts were directed towards protecting their community flood mitigation project. Furthermore, the surveyor sought to gain indications of community mobilization for making repairs to the project in the aftermath of the flood if it was necessary to do so.

Some corroboration of the mobilization efforts indicated by the RCVs was then sought from the village disaster committee members and local villagers.

Community mobilization was described by the RCVs in terms of organizing the members of the community into a workforce that was generally recruited through the efforts of the village Group Chiefs. In Kandal and Kompong Cham, as noted previously, the labor contributed by the villagers was utilized for filling sandbags for the most part. Labor was organized on a rotational basis from family to family and village groups were responsible for a specific area, both in terms of filling sandbags and evacuation. In Peam Khnong in Kampong Cham, the RCVs commented that their mobilization efforts were significantly aided by the strong leadership of the District Red Cross officer.

There appeared to be less community mobilization in the villages in Prey Veng in terms of an organized workforce. There, mobilization efforts were described by the RCVs with respect to organizing people who had boats to assist other villagers (usually poorer) in evacuating.

With respect to mobilization efforts to protect or repair the community's flood mitigation project, villagers were either asked to take responsibility for the section of road in front of their homes or organized into a village workforce. Sections of road where there were no homes adjacent to it could be left unrepaired if fundraising or additional mobilization is not done after the current harvest season is over.

Responses from the village disaster committee members and local villagers with respect to community mobilization largely reflected what had been described by the RCVs. Activities were organized in coordination with local authorities at the commune and village level

"The RCVs provided an example to the villagers to encourage people to work together."
– villager,
Chhey Udom, Kandal

(i.e. Group Chief responsible for 17 families). Announcements were made over loud speakers, or the RCVs went house to house in order to advise people of any planned flood mitigation activities. Individual families or groups of families were given certain responsibilities for an area in the community or a specific task. A village disaster committee member related that, "villagers were assigned responsibilities to protect the community by the RCVs, and the villagers followed their guidance and instructions."

In the target districts in Prey Veng, mobilization efforts during the flood were more centered on organizing the evacuation of people, or in villages that had built a bridge, moving debris in the water channel to prevent damage to the bridge.* Mobilization activities after the flood focused on completing repairs to the community's flood mitigation project. Flood damage to 80 meters of the main access road into Prek Cham, for example, was completed with the participation of villagers, monks, and students, with only about 20 meters remaining to be repaired.

3.4 Problems Encountered by the RCVs

Inquiries were directed to the RCVs regarding the problems they encountered that acted to prevent them from performing more effectively. These problems could have originated from efforts to mobilize members of the community, or alternatively, problems for which they were unprepared or did not have the skills to tackle were also elicited including problems emanating from general circumstances. The problems described reflected experiences before, during and after the recent floods.

Some RCVs acknowledged that they had problems mobilizing members of the community because of the uncooperative behavior of some villagers. Although, the RCVs in each of the target districts made it clear that these people were in the minority. Villagers who had refused to participate at first usually changed their perspective either after explaining the necessity to work together, or by them witnessing the benefits gained by cooperating. Similar to problems of this nature were instances where the RCVs felt that their initiatives were not given the level of legitimacy in the minds of the villagers that was accorded to initiatives of people like the village chief. In Boeng Sang Lech in Kampong Cham, an RCV commented that "we need to depend on the local authority because they are more influential." This sentiment was echoed by an RCV in Ban Lech, Prey Veng who commented that, "some villagers didn't follow the advice of the RCVs and stayed in their houses even as the floodwaters rose." Another factor noted by the RCVs that contributed to what may have appeared to be uncooperative behavior among villagers was the fact that people were too busy protecting their own property to assist the community.

The RCVs in Kandal province also heard complaints from villagers regarding relief distribution after the peak of the flood. An RCV in Chhey Udom noted that

* In initial attempts to gain the support of donor agencies, a major concern of the donors was sustainability in terms of maintenance of the physical infrastructure that would result. The villagers here have demonstrated that they have genuinely taken ownership of the flood-mitigation solution by either ensuring the security of the structure or making repairs to it in the aftermath of flooding.

some people complained about which people were receiving relief first and who was receiving relief later. Other problems centered on difficulties experienced by RCVs in preparing registration lists for relief distribution. The Kandal RCVs had complaints themselves related to relief distribution processes in their communities. They informed the surveyor that the relief distribution effort took a great deal of time, as in some instances it took place on ten different occasions.

Time commitments created difficulties for RCVs in the other target provinces as well. RCVs in Kampong Cham and Prey Veng advised that their RCV duties meant that they did not have time to prepare their own family, or that fulfilling their volunteer duties was compromised somewhat by the fact that they also had to cope with the flood.

Other problems experienced by the RCVs during last year's floods centered on dealing with vulnerable segments of the population, facing shortages in certain items, communication problems, and the nature of the 2000 flood itself. Vulnerable segments of the population that created difficulties for the RCVs during the evacuation period included older people, pregnant women (a woman in Kandal died due to complications giving birth to twins at the time of the flood), sick and disabled people, and widowed parents with many children. The evacuation of livestock and the care of sick animals was another problem. A dangerous situation created by the evacuation of villagers was identified by RCVs in Prek Cham in Prey Veng with respect to the presence of children on or near the National Road when their families evacuated to that location.

Problems were also created by shortages of food and certain materials. Food shortages were noted by RCVs in two villages in particular in Kang Meas district in Kampong Cham. Material shortages were identified with regard to having enough sandbags and soil to fill them. Medicine was another shortage noted in Prey Veng when parents asked for assistance for sick children. Problems related to communications resulted when floodwaters rose and prevented the RCVs from being able to go from house to house to advise and inform the villagers. RCVs in Prek Cham in Prey Veng advised that they had to spend their own money on transportation in order to carry out their duties, while RCVs in Koh Ta Ngor I said that they were unable to inform or assist villagers in more remote areas. The lack of boats or other modes of transportation inhibited or prevented RCVs from disseminating information during the period of the flood, as well as proper monitoring of flood conditions.

The specific characteristics of the 2000 flood also created obvious difficulties for the RCVs when they attempted to fulfill their duties. RCVs in Kampong Cham indicated that they were just unprepared for the second flood that hit their community. Other characteristics of the 2000 flood that created additional problems for the RCVs included fast currents and strong winds, and the speed at which the water rose.

3.5 Cambodian Red Cross Support

Indications of the adequacy of the degree of support received by the CRC were elicited from the RCVs in each of the target communities. Responses from the

RCVs revealed their impressions of the adequacy of the support that the CRC provided them in preparation for the 2000 flood, as well as during and after the flood. Their responses provided indications of support from CRC staff and officials at different levels.

Overall, the RCVs in each target province indicated that they were pleased with the support received and that it was helpful in the course of their duties. More indications of inadequate levels of support came predominantly from RCVs in Prey Veng. But here, any criticism was balanced by a recognition that circumstances prevented the CRC staff from providing more assistance. The RCVs in Prek Cham village, for example, stated that they had little support from the District Red Cross and relied instead on their own efforts and resources. However, they reasoned that the lack of CRC support was probably due to a combination of budget constraints and the fact that CRC officials were busy with the flooding in their own area. A RCV in Phum Thmey noted that "they did their best to support us," and a RCV in Prasath Lech confided that while the CRC's support was not adequate, this was so "because the National Road was cut and they [CRC officers] are also affected by the flood."

"We had very little support from the District Red Cross. We did everything on our own. They only came and visited during the flood with visitors or a delegation from Phnom Penh." – RCV, Prek Cham, Prey Veng

RCVs in both Kandal and Kampong Cham gave more positive indications of the adequacy of support from the CRC. Although, the expressions of adequacy of CRC support were also balanced by qualifying comments. In Kandal province, RCVs in Prek Takeo explained that although the support was adequate at the district level, more was needed from the provincial and headquarters levels. In Chhey Udom in Kandal, the RCVs felt that the support they received from the CRC was countered by their own inadequacies in terms of knowledge and skills. Correspondingly, a RCV in Phum Khsom, Kandal, indicated his satisfaction with the support provided by the CRC by stating that, "they provided good instructions and ideas and provided encouragement to the RCVs."

The RCVs in Kampong Cham were most expressive in their praise for the District Red Cross officer, Mr. Kong. They were appreciative of his efforts in making their tasks easier with respect to providing resources (i.e. sandbags), as well as for his support and leadership. RCVs in Prek Andong also noted that the provincial staff came and reminded them of preparedness activities and gave instructions and ideas.

"Every time there was a problem, Mr. Kong came and provided support and encouraged us to do the work needed." – RCV, Koh Ta Ngor I, K. Cham

3.6 Suggestions for Improvement

Inquiries seeking suggestions as to how to improve disaster preparedness and flood mitigation in each of the target communities were sought from the three sets of respondents in an effort to gain a wide range of perspectives. The RCVs were also asked what other training they would like to have included in any future CRC training courses that would assist them in their duties. In contrast, the village disaster committee and local villagers were specifically asked what

they thought the RCVs in their community could have done better both before and during the flood in order to reduce its impact.

- The Volunteers Responses

The volunteers presented a fairly broad range of suggestions for improving preparedness and mitigating the impact of flooding. RCVs in Prey Veng and Kandal noted aspects of communications that was not mentioned by RCVs in Kampong Cham. RCVs in Prey Veng stated that a wider dissemination of information was needed in order to reach villagers living in remote areas. In Kandal, the RCVs focused on communication factors for improving the response time that is taken to address the community needs that were identified by RCVs. They also noted the need to improve communication in the opposite direction with regard to receiving instructions and directions from Red Cross headquarters and at the provincial level. In Phum Khsom, Kandal, RCVs acknowledged that it would assist their activities if there were a written disaster plan and if more meetings were held with villagers in order to discuss health and sanitation issues. In addition, the RCVs in this village stated that they need to make more use of key people in the community (i.e. *the ajar* – assistant clergy) to make people aware of Disaster Preparedness.

RCVs in each of the target provinces suggested that raising the main access road or finding a solution to build a safe hill or more water wells would improve the situation of their village during flooding. Other suggestions related to stockpiling food, rice seed, sandbags, and first-aid supplies.

Suggestions by the RCVs regarding additional training focused for the most part on refresher training on CBDP (Community-Based Disaster Preparedness) and CBFA (Community-Based First Aid). Most RCVs also noted that their training was a long time ago and it was of a short duration. Other training suggestions were with respect to community organization and community participation techniques and fundraising methods. Training on water sanitation was also suggested by RCVs in both Kampong Cham and Prey Veng, as a shortage of water wells was a major concern in these villages.

- Responses of the Village Disaster Committee and Local Villagers

The village disaster committee members and local villagers in the target communities also gave a variety of suggestions for the RCVs to improve efforts at reducing the impact of seasonal floods, and these suggestions largely reflected what had been mentioned by the RCVs. Improvements in communication centered on providing more information house to house and to remote villagers, and reducing the time that flood situation reports take to go through the Red Cross hierarchy. A committee member in Chhroy Dong in Kandal suggested that the CRC leadership announce the RCVs roles and activities during ceremonies and special events in the village. Correspondingly, a committee member in Prek Andong in Kampong Cham recommended that the RCVs maintain good relations with the Red Cross leadership for keeping lines of communication open.

Suggestions were also made to improve the capacity of the RCVs with respect to increasing their skills and knowledge to provide them with more solutions for flood mitigation initiatives and Disaster Preparedness. Similarly, a committee member in Chhey Udom suggested that the RCVs need more support from Red Cross headquarters in terms of giving directions and instructions.

"Give the RCVs more skills, some are still young and have less experience than village leaders."
–villager, Chhey Udom, Kandal

The remainder of the suggestions focused on needs to increase stockpiles, water sanitation, or the number of boats. Other responses were more fatalistic or pragmatic in nature, such as A villager in Koh Ta Ngor I in Kampong Cham that responded that, "I have no suggestions because the flood was too big and strong." Yet other responses signaled satisfaction with the RCVs, such the villager in Boeng Sang Lech, Kampong Cham, whose only suggestion was, "just that the RCVs continue their good work."

3.7 Community Attitudes Towards the RCVs

Indications of community attitudes to the RCVs were gleaned from the array of questions asked to the village disaster committee and local villagers. A broad spectrum of views were gained from the survey data that ranged from reflections of the self-reliance of individual communities with respect to coping with seasonal flooding to expressions of sincere gratitude for the efforts and initiatives of the RCVs.

In a number of villages, people had some difficulty identifying the RCV's actions or the RCVs personally. There was some confusion with regard to what actions were taken by local authorities as opposed to being initiated by the RCVs. This confusion was compounded by instances where RCVs were also in positions of local authority. Recognition of the RCVs in the community is more pronounced with regard to the times when they make announcements during traditional ceremonies or with respect to the flood mitigation project.

Attitudes of indifference to the initiatives of the RCVs appeared to be more prevalent in Kandal province compared to the other target provinces. The responses from Kandal, however, tended to reflect attitudes of self-reliance in coping with annual flooding as opposed to any resentment or being unappreciative of the activities of the RCVs. Similar comments to the effect that people already "know what to do" were also expressed in Kampong Cham and Prey Veng, but to a lesser extent. Nonetheless, the attitudes of indifference in Kandal such as from a villager from Prek Takeo who said that, "the RCVs did not have a great impact as the villagers depended on their own initiatives" were balanced by comments that acknowledged the contributions of the RCVs. Other comments indicated that people recognized that the RCVs were active in mobilizing the community, provided ideas and information, and perhaps most importantly, provided an example that encouraged people to work together.

Responses from Kampong Cham and Prey Veng tended to put more of an emphasis on the effectiveness of the RCVs that resulted out of their hard work and advice. People recognized the benefits gained by the community through the ideas and inputs of the RCVs. A villager in Peam Knong in Kampong Cham

noted that, "there would have been more damage in the community without the important role played by the RCVs in protecting the community." Others claimed that the community's flood mitigation project would have been destroyed or an access road would have been cut-off without the actions of the RCVs. The community organizing and mobilization effects of the RCVs were recognized by a villager in Boeng Psauth, in Prey Veng who conceded that, "it was more difficult [before] to do such community activities without the RCVs."

A number of villagers commented that they had never done such activities before the presence of the RCVs in their communities. The value of preparedness activities were also noted by a villager in Ko Ta Ngor I in Kampong Cham who thought that, "villagers might have waited until the water arrived before acting, or to move their houses along the river" if the RCVs had not been present. Other comments referred to the hard work of the RCVs (to the extent of compromising family commitments) in the face of daunting circumstances. People recognized that the magnitude of the flood was beyond the means and resources of the RCVs in most instances. In several villages in Kampong Cham, the strength of the flood destroyed the flood mitigation project despite the preventative efforts that were taken.

"The RCVs did their best both before and after the flood, but the flood was so big that no one could control it."
-committee member, West Prasath, Prey Veng

More general attitudes as to the duties and responsibilities of the RCVs were also perceived by the RCVs themselves. RCVs in a number of communities indicated that people perceived their roles in terms of preparing damage reports and needs assessments, providing relief, and giving medical assistance besides providing information and resources such as sandbags.

Red Cross Volunteers in Kang Meas District, Kampong Cham Assist in flood relief.

4. RCV Effectiveness and Constraints

This section will serve to summarize the observations outlined in the previous section into two broad categories: effectiveness and constraints. Thus, determinations of the effectiveness in mitigation the impact of the 2000 flood

made from actual activities of the RCVs as well as the perceptions of villagers with respect to the impact the RCVs had in relation to reducing the effects of the flood. The constraints will be summarized according to the actual problems experienced by the RCVs and from the observations and perceptions of the village disaster committee members and the villagers themselves.

Attempting to arrive at some determination of the effectiveness of the RCVs in mitigating the impact of flooding in their respective communities within the context of the 2000 floods is a challenging undertaking. This is especially so considering that it is the first test of the RCVs under a major flooding situation and the analysis is dependent upon general observations and perceptions. While the determinations of effectiveness might not be definitive, indications of the effect that the RCVs had become apparent if specific actions and general perceptions are considered.

The majority of villagers surveyed made references to their usual coping mechanisms in the face of flooding that they have become accustomed to dealing with on a seasonal basis. However, in underlining the fact that they have to depend on a high level of self-reliance living in flood prone areas, the villagers were also able to point out the contributions made by the RCVs. Comments in this respect made reference to the fact that either no one within the community had previously done the particular activities initiated by the RCVs, or more generally in terms of no one ever helping their community before.

By providing information on Disaster Preparedness, the RCVs injected ideas and inputs into the target communities that evolved into specific actions. These actions, included monitoring flood conditions in order to provide an early warning system and undertaking preparedness initiatives before the flood.

Making their communities better prepared by advising people of dangerous situations with regard to their families and regarding their personal property and belongings served to instigate action. The initiatives of the RCVs were made more effective by utilizing the recognized authorities in the community and using the community organizational structures that were already in place. In doing so, they were able to assign specific duties and responsibilities to villagers on either an individual basis or in collective groups.

In a number of target communities, the actions initiated by the RCVs were effective in protecting the flood mitigation project from floodwaters. Alternatively, if the flood mitigation project was damaged, the RCVs were able to mobilize the community in order to make the necessary repairs. The resulting effect on the local villagers was that they were able to realize some positive impacts that contributed to their own coping strategies. Assisting in moving houses from vulnerable locations, having a sufficient amount of sandbags prepared, and organizing boats to evacuate people all demonstrated the effectiveness of the RCVs by the people in the community who were affected. Most villagers recognized that the RCVs “did their best” even though their efforts might have been overwhelmed by characteristics of the 2000 flood. Under these circumstances the RCVs gain added respect among members of their

respective community and provided an important example for the community as a whole.

The magnitude of the 2000 flood has already been noted as a significant constraint to the efforts of the RCVs. Other factors that contributed to hindering the effectiveness of the RCVs center on communications, resources, villager attitudes, and general skills and knowledge.

Breakdowns in communication that prevented the transfer of information at either the local level, or within a line of communication to the district, provincial, and headquarters with respect to the Red Cross organizational structure had a predictable negative impact on the effectiveness of the RCVs. The lack of communication at the local level prevented a thorough dissemination of Disaster Preparedness information or flood conditions and forecasts. Similarly, if lines of communication within the Red Cross hierarchy were broken, information on local flood conditions and needs was inadequate. Just as importantly, the effect of strong leadership within the Red Cross at the district level was made evident in Kang Meas district in Kampong Cham. The strong leadership of the District Red Cross officer was recognized by each target village there and contributed to the effective mobilization of members of the community. The RCVs in Kandal and Prey Veng did not have this level of support for one reason or another.

Constraints centering on factors of a lack of resources were identified in one respect in terms of not having a means of transportation in order to monitor the flood or to go house to house in order to inform villagers on preparedness. The lack of other resources was described in terms of not having the instruments to do accurate measurements of floodwaters, not having enough sandbags, or even not having a flashlight. With respect to poor villagers, a lack of financial resources prevented them from undertaking preparedness measures that they were instructed to do.

Other constraints that can work to reduce the effectiveness of the RCVs in their communities center on attitudes of community members towards the RCVs. While local villagers do not necessarily have any animosity towards the RCVs, they tend to only recognize the authority of local people who are in positions of a chief at the village, the commune, or the district levels. Thus, there are instances where the efforts of the RCVs will be compromised by the fact that they do not hold any positions of local authority. However, the situation is complicated even in instances where a local authority figure is also a RCV. In such instances, the villagers will usually not identify the person as an RCV first, but rather by his position as a local authority figure. On the other hand, villagers who directly hamper the RCVs activities by being uncooperative are in the minority.

Lastly, a significant constraint influencing the effectiveness of the RCVs is with respect to the general capacity of the RCVs. The fact that the RCVs were not trained specifically in aspects of relief could have determined how local villagers perceived their effectiveness during the relief distribution process. Other aspects of capacity centered on not possessing the necessary skills in order to perform effectively emerge largely because of factors related to inexperience. The 2000 flood was the first major test for the RCVs and there is no doubt that it

was beyond anything that they had been trained for. Correspondingly, the lack of experience inherent with majority of the RCVs in the target communities has meant that they are new to concepts that require skills in community organization and mobilization, as well as in leadership.

Flood barrier built from sandbags and bamboo sticks in Kang Meas district, Kampong Cham, with the assistance of the District Red Cross officer.

5. Recommendations to Enhance RCVs' Capacity

Suggestions for improvements that focused on aspects of training and capacity were made by the RCVs and members of the different communities and noted in section 3.6. These suggestions centered on refresher training in CBDP and CBFA, as well as increased knowledge and skills in community organization and participation. From these insights, and from a general overview of the responses of the interviewees, some broad recommendations that would serve to enhance the capacity of the RCVs can be made.

The time that has passed since the RCVs completed the CBDP training modules would warrant a refresher course. This course would provide an opportunity for the RCVs to review what was covered in the past and provide updates on aspects of CBDP. Additional enhancement of the capacity of the RCVs would be attained by providing them with training in PRA (Participatory Rural Appraisal) techniques. Such training would provide the RCVs with skills that would assist them in achieving effective community organization and participation.

More generally, the RCVs need instruction on how to update hazard maps for seasonal floods of various magnitudes including abnormally destructive floods. The RCVs need to be more aware of why it is important to update their respective hazard maps in this manner in order to enhance the preparedness of their communities. Other general considerations to improve the capacity of the RCVs would involve increasing the RCVs' skills in recognizing the more vulnerable segments of the population and planning actions to ensure their safety. Correspondingly, the RCVs need more training on how to maintain better records of the floods in their communities. This will be important in establishing a historical record of seasonal flooding over time.

Additionally, efforts need to be made to ensure that strong and definitive lines of communication are maintained between the RCVs and the different levels within the CRC hierarchy, but especially with the District Red Cross officers. These efforts will help to improve the relationships between the RCVs and the CRC hierarchy where they now appear weak.

By focusing on these key areas of capacity building for the RCVs, a more effective volunteer force for disaster preparedness will be developed in the target communities. In addition, the benefits gained by the RCVs in enhancing their capacity and effectiveness will go a long way to increasing their confidence, as well as the esteem of the villagers in their communities.

6. Conclusion

There is no question that the RCVs in the target communities had to perform their duties under extreme circumstances as a result of the magnitude of the 2000 flood. For the purpose of the CBDP program, the term "disaster" has been generically defined as referring to a condition that exceeds the skills and means of people to maintain their normal existence and/or do not have a means to recover from what they have experienced. The 2000 floods in Cambodia were more of a "disaster" for some families in the target communities than for others. Those families with more resources, whether in terms of having a boat to use in evacuation, having their own safe hill or easy accessibility to high ground, having higher and more stable houses, or more financial resources – faired better.

The degree of disaster then becomes relative to the individual family concerned, as each family's needs are different. By and large, people in the target communities relied on the coping strategies they have employed for the regular occurrence of the seasonal floods. Although some concrete conclusions can be drawn that the training that was received by the RCVs helped to provide additional assistance to people while they were in the process of deploying their normative coping mechanisms. The CBFMP training was not aimed at mitigating catastrophic floods such as that which occurred in 2000. The program was designed to address the seasonal flooding situation, and in this respect, the RCVs went beyond the expectations of what they had been trained to do.

By making people more aware of the concept of Disaster Preparedness, villagers have a better understanding of procedures and methods to mitigate the impact of seasonal flooding. A result of this increased awareness is that the introduction of the CBFMP program in the target communities helped to engender a collective spirit in these communities that served to initiate proactive measures to protect the community before floodwaters reached their peak. In terms of the level of community solidarity, it is more difficult to ascertain the extent to which the program has sufficiently instigated the elements of village solidarity that are necessary for large-scale community mobilization to coalesce in an effective manner. An elder in Prek Cham, Prey Veng commented that, "solidarity is the same as before…even before the Pol Pot time", while people in other villagers have noted that the program has caused people to work together more. However, the examples of community mobilization that did take place provide an indication of some degree of community solidarity forming.

Such differences in the sentiments expressed by villagers underlines the fact that different dynamics were present in each of the target districts that either had a positive or negative influence on the RCV's activities. Firstly, and most obvious, the geography within each district influenced the impact of the flood and the level of preparedness required and the actions taken. The presence of other physical features in the community also had an important influence on the impact of the flood. The circumstances of Phum Khsom in Kandal serves as an example of how the presence of sufficient amount of high ground (a road built by H.E. Chea Sim) significantly reduced the impact of the flood and the corresponding level of preparedness required.

Another important dynamic in the target districts revolved around the personalities of the Red Cross officers in each district and the lines of communication within the Red Cross hierarchy. Only one of the three districts was unanimous in indicating that there was a sufficient level of support that resulted in encouraging community mobilization efforts. Yet another important dynamic in the villages was the social chemistry present between the RCVs and the local authorities. While having local authority figures also acting as RCVs in a village caused some confusion when villagers tried to identify who were the community's RCVs, it served to legitimize the RCV's activities.

Inevitably, constraints will remain for the RCVs that will inhibit their effectiveness in mitigating the impact of seasonal floods. However, there are also indications that the RCVs have proven themselves in terms of a basic level of skills and knowledge that has had a positive contribution to easing the pressures on their respective communities brought on by this natural phenomenon. The community's perception of their effectiveness will undoubtedly be hampered by people's notion that the RCVs are also responsible for relief and general rehabilitation. Even with the Cambodian Red Cross giving relief to only the most vulnerable villagers, in contrast to the government's policy to give to everyone despite individual needs, has put the RCVs in a compromising position vis a vis members of their respective communities. Although, Valerie Dourdin, the Disaster Preparedness Delegate for the Federation points out that the success of the government relief effort relied heavily on the RCVs in the CRC's capacity as an "auxiliary" agency of the Cambodian government.

On balance, one can conclude that the commitment and dedication the RCVs demonstrated in each of the target communities served as an inspiring example under difficult circumstances. The long term impact of the CBFMP training and the presence of the RCVs in these communities may be too soon to determine with any certainty. It would appear that community mobilization is an integral factor in maximizing flood mitigation efforts in the villages. The preliminary steps have been made in this regard and the indications are that the RCVs have gained the confidence of community members in the performance of their duties. Maintaining lines of communication at all levels can only enhance the dissemination of pertinent information and the clarification of roles and responsibilities. This will also serve to enhance the level of confidence people have in the RCVs, as well as increase the self-confidence of the RCVs themselves.

A comparison of the concluding remarks made here to those made for the CBFMP Evaluation Report completed in August 2000 provides for some overall observations of the CBFMP program in these communities. The CBFMP Evaluation Report focused on activities surrounding the completion of flood-mitigation solutions in each target community, while the post-flood assessment focuses on activities in the target communities that served to mitigate the impact of the 2000 flood. Both events depended heavily on the training received by the RCVs. Therefore, while the focus of each report was different, some scrutiny can be made with regard to the underlying characteristics within the target communities and the effect of the RCVs' actions.

In both cases, constraints to the effectiveness of the RCVs centered on material resources within the community itself and the RCVs' capacity levels. A lack of material resources and capacity served to create an attitude of dependence on outside resources. The people in these communities know what they need to reduce the impact of the flood, however, they lack the means to achieve the desired objectives. Other factors that worked to reduce the effectiveness of the RCVs can be attributed to misconceptions among the villagers as to the RCVs' roles and responsibilities. In the process of completing the flood-mitigation solution, there was a danger that the RCVs were perceived as a vehicle by which the community could source outside funds. With respect to dealing with the effect of the 2000 flood, the RCVs were often viewed as a source of relief and/or rehabilitation.

In contrast to these inhibiting factors to the RCVs' effectiveness, a number of positive aspects were noted that were common to each of the reports. Utilization of the inherent community organizational structure provided a mechanism to encourage cooperation and participation among the villagers. The result of which was an increased sense of community solidarity in most cases. A side effect of this was that it legitimized the role and actions of the RCVs, which had a significant impact on the success of the eventual outcome of the RCVs' initiatives. This allowed for a degree of competence to be established with respect to the RCVs that will further encourage trust and will, in turn, help in community mobilization efforts and encourage participation. Finally, in both cases, alternative coping strategies were presented that, even where projects were severely damaged by the flood, will be recognized by the participants as having long-lasting value.

The flood mitigation project road in Prek Cham, Prey Veng has been repaired to pre-flood conditions.

Appendices

Appendix "A"
Itinerary for the Community Based Disaster Mitigation Assessment

Friday, June 23rd, 2000 – Meet with volunteer trainers at CRC headquarters 4:00PM.

WEEK #1

Monday, June 26th, 2000 –
Meet at Pact office, review documents and complete draft of survey instrument, and make a final decision on project sites to be visited. Advise CRC to coordinate travel and visit logistics.
Translate survey instrument into Khmer.

Tuesday, June 27th, 2000 –
Travel to 5 project sites in Kandal. (Stay overnight in Neak Loumg)

Wednesday, June 28th, 2000 –
Travel to 5 project sites in Prey Veng. Return to Phnom Penh.

Thursday, June 29th, 2000 –
Travel to 5 project sites in Kampong Cham. Return to Phnom Penh.

Friday, June 30th, 2000 –
Consider any changes to survey instrument. If changed, translate changes to Khmer.

Saturday, July 1st, 2000 –
Conduct test survey in Kandal province.

WEEK #2

Monday, July 3rd to Friday, July 7th, 2000 –
Travel to Kampong Cham to conduct survey of 5 selected project sites.

WEEK #3

Monday, July 10th to Friday, July 15th, 2000 –
Travel to Prey Veng to conduct survey of 5 selected project sites.

WEEK #4

Monday July 17th to Friday, July 21st, 2000 –
Travel to Kandal to conduct survey of 5 selected project sites.

WEEK #5 and Week #6

Monday, July 24th to Saturday, August 5th, 2000 –
Compiling and analyzing research data collected, writing case studies, translation of research data from Khmer to English. Completing final draft of report.

Appendix "B"

CBFMP Project Document List

1. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
   - Final Proposal, February 18, 1998
   - Submitted by – The Cambodian Red Cross and The International Federation of Red Cross and Red Crescent Societies

2. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
   - Project Summary

3. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
   - Monthly Reports

4. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
   - Quarterly Reports

5. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
   - Status of Project May 1999 to January 2000

6. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
   - Prey Veng Flood Mitigation Projects – Site Visits, March 13-14, 2000

7. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
   - Process Documentation

8. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
   - Community-Based Initiatives in Disaster Management

9. **Criteria Selection of RCVs For CBDP & CBFMP**

10. **Cambodia Community-Based Flood Mitigation and Preparedness Project**
    - List of Project Outputs

11. **Training Activities and Accomplishments**

12. **Group Meeting Activities**

13. **Site Visit Activities**

14. **Funding Information Sheet (CBFMP Phase I)**

15. **Memorandum of Understanding**
    - between ADPC, Pact Cambodia, the Federation, and the CRC

Appendix "C"

Community Based Disaster Mitigation Assessment and Lessons Learned Terms of Reference

Objective

The Management Committee of the Cambodia Community-Based Flood Mitigation and Preparedness Project (CBFMP) proposes to conduct a research assessment of the experience of CBFMP project implementation in the three target provinces of Kandal, Prey Veng and Kampong Cham. The assessment will identify lessons learned and develop replication case studies.

The objectives of this assessment and lessons learned are to:

- Document the progress of community activities including its constraints and successes,
- Develop representative, written case studies of the progress of CBFMP activities to be repeated or replicated in other areas.

The purpose of the study is to identify lessons learned from the CBFMP process, including but not limited to:

- Strengths and weaknesses of the training, in course content, participant understanding, preparation for leadership,
- Effectiveness of CRC Branch and Headquarters support,
- Community understanding and involvement in flood mitigation activities,
- Facilitating the enhancement or adaptation of traditional coping strategies.

Background

The CBFMP is training 150 Red Cross Volunteers to organize community projects to reduce the impact of flooding in their communities. The project is jointly implemented by the Management Committee, which comprises Pact, the Cambodian Red Cross (CRC), and The Federation of Red Cross and Red Crescent Societies (Federation).

The primary natural disasters in Cambodia are floods, droughts, and forest fires. Cambodia is the particularly susceptible to flooding along two major watersheds, the Mekong River and Tonle Sap. In years of extreme flooding, the high waters can wash away dams, dikes and distribution structures, destroy crops and livestock, damage homes, wats, schools, clinics, roads and other community infrastructure and even cause loss of human life.

In 1996 CRC identified the seven most flood prone provinces for particular emphasis of a new program, Community-Based Disaster Preparedness (CBDP). In 1998, the Asian Disaster Preparedness Center (ADPC) provided funding for the 18-month CBFMP project. For the purposes of CBFMP, CRC selected three provinces for demonstration projects in CBDP. The three provinces are

contiguous along the central Mekong: Kampong Cham, Prey Veng and Kandal, which surrounds Phnom Penh.

Phase I of CBFMP training has already been completed by CRC trainers and coordinators in the CRC Disaster Management Department (DMD). There were 25 RCVs in each province who attended 18 days training in RC principles, disaster management and community organizing. After completion of training, RCVs returned to their communities to identify the possible solutions for mitigation activity in the village. There were 24 solutions prepared by communities in each province including roads, bridge repairing, dam building, and canals. Of the 24, there are 6 from Kandal, 11 from Prey Veng and 7 from Kampong Cham.

Consultant Tasks

The consultant shall report to the Pact Country Representative and consult regularly with the Management Committee of the CBFMP project in Cambodia. The consultant shall perform the following tasks:

1. Supervise and support Cambodian field researcher(s).
2. Meet with CRC/DMD and CRC Branch Staff, review reports from site visits. Identify a representative sample of community projects (five in each province).
3. Develop a survey instrument in consultation with the Management Committee.
4. Conduct a research assessment and analyze the results of data collection of the CBFMP process.
5. Document and identify lessons learned from the communities in the three provinces
6. Identify case study examples including positive and negative outcomes. Present the report to the Management Committee.
7. Prepare a written report of activities taken and case studies.

The Field Researcher(s) will perform the following tasks:

1. Work under the general direction of the Consultant.
2. Participate in the development of the survey instrument and field testing.
3. Conduct survey interviews in the target communities.
4. Translate survey results into English.
5. Contribute to analysis of survey results.

Level of Effort

The consultant shall consist of 1 Manager and up to 3 Researchers. The Manager shall provide five days for preparation, ten days supervision and analysis, and five days for report writing. The Researcher(s) shall conduct the research assessment and lessons learnt for 40 days in the province under the assignment of his/her manager.

Time Frame

The consultants shall conduct the work from June 1 to August 31 2000.

Deliverables

- Preliminary written report of data collection from the communities.
- Documentation and case studies.
- Written report of activities taken during research. Presentation of findings.
- Final Report in English.

Appendix "D"

Questionnaire – CRC Volunteers

1. How were you selected to participate in the training program?

2. Have you been involved in any other training programs? If yes, what training did you receive?

3. Are you on any other committees in your village, commune or district?

4. Do you hold any position of authority in your village, commune or district? (i.e. chief, sub-chief)

5. How many modules (sections) of the CBFMP training program did you participate?
   Did you receive a certificate?

6. How did the training program help you assist the members of your community in the flood mitigation project?

7. In what ways do you think the training program could have been improved?

8. Were you eager to participate in the CRC training program? Did the training process take you away from what you consider to be more important things?

9. What problems did you encounter when trying to start and complete the project in your community? How did you address the problems and overcome them?

10. What changes would you suggest to the CRC program to help avoid similar problems from occurring in future community projects?

11. Do you feel the level of support from the CRC head office was sufficient to enable you to undertake the tasks involved in this project? If no, why was it not sufficient and in what ways could CRC head office support have been improved?

12. What benefit do you think you received personally from being involved in this project? (i.e. skills, knowledge, confidence, reduced problems of flooding)

Appendix "E"

Introduction to Survey Participants – Village Project Committee

The purpose of having this meeting is to have a discussion that will allow us to get your point of view on the process of the Cambodian Red Cross program in your village that resulted in the completion of your flood mitigation solution.

We are interested in your comments and opinions regarding the process in which you have recently participated. We would like to know what in this process you can identify that was good, and what was bad. We would also interested in any suggestions that you have regarding possible improvements to this process. We would also like to know what you have learned by participating in the process.

Neither Mr. Bunna nor Mr. Michael are members of the staff of the CRC or Pact Cambodia. We are independent researchers who will review what participants tell us after we visit a total of 15 projects in 3 provinces. Upon completing the research we will compile a report for the CRC and Pact Cambodia that will outline strengths and weaknesses in the process just completed. In doing so, these organizations will be able to continue working in rural communities like yours in order to achieve successful results building on the strong points and making improvements where needed.

Questionnaire – Village Project Committee

1. What were the main steps taken in your community in order to **decide** to propose the (bridge, road, dam, etc.) project, then to **start** and **complete** the project?

2. Did **local villagers** who were not on the disaster committee **make suggestions** regarding the proposed project? If yes, what were they and were these suggestions included in the proposal?
   Did a **majority** of people (over 50%) in the community agree with the decision to propose this project?

3. How many **people** (number of people if possible) in your village **participated** in the project in terms of either providing labor, or materials, or money?

4. Do you think it was the **best solution** proposed for the community, or would other solutions have been more useful? If it was the best solution, why?
   If other solutions had been more useful, what would they have been? Why were they not proposed?

5. What factors **prevented** the community from doing this project before the CRC program was introduced to your community?

6. How was the **"hazard-mapping"** process used in your community?

7. What **problems** did your community encounter in deciding upon, starting and completing your community "solution"? How did you solve them?

8. What are the **lessons you have learned** from the process of completing this community project? Are there some suggestions that you could make to other communities wanting to do a similar flood mitigation project?

9. What would you do differently in terms of deciding on a project, starting and completing any **future** flood mitigation projects?

10. **In the past**, when you had a flood situation what did the community traditionally do to use local resources in order to protect the village or prevent damage?

11. What was done differently to start and complete this project compared to the **traditional** way decisions are made regarding the start and completion of community projects (i.e. Wats, schools, roads, etc.)?

12. Do you think the **contributions** of community members in terms of materials and labor (excluding money) was the maximum that could be expected, or do you think that more could have been contributed? Why?

13. Do you think that the amount of **money** contributed by community members was the maximum that could be expected, or do you think that more could have been donated? Why?

14. List the **priority of needs** of your community with respect to activities/solutions required to reduce the affects of flooding. Rank in order of priority (i.e. #1, #2, and #3).

15. Is your community going to start **another** project to help protect the community from the **affects of flooding**? If yes, what project is your community planning and what steps will you take to start and complete the project?
    If no, why not?

16. Is your community going to start any other project that is **not** related to the affects of flooding?
    If yes, what is the project and will you use the same process in starting and completing it as was used in the (bridge, dam, road, etc.) project?
    If no, why not?

17. Do you feel you **personally** gained skills, knowledge, or benefited from the results of the project?

Appendix "F"

Introduction to Survey of Villagers

The purpose of having this meeting is to have a discussion that will allow us to get your point of view on the recent activities in your village that resulted in the completion of your flood mitigation solution.

We are interested in your comments and opinions regarding the activities that were involved in completing your village solution in which you have may have participated in or observed. We would like to know what in these activities you can identify that were good, and what were bad. We would also interested in any suggestions that you have regarding possible improvements to the activities that took place. If you participated in these activities, we would also like to know what you have learned by participating.

Neither Mr. Bunna nor Mr. Michael are members of the staff of any of the organizations that were involved in these activities. We are independent researchers who will review what participants tell us after we visit a total of 15 projects in 3 provinces. Upon completing the research we will compile a report that will outline strengths and weaknesses in the process just completed. In doing so, the organizations involved in these activities will be able to continue working in rural communities like yours in order to achieve successful results building on the strong points and making improvements where needed.

Villager Questionnaire

1. Are you aware of the village disaster committee? Are you aware of the flood mitigation project coordinated by this committee? What was the project?

2. Did you take part in this (bridge, road, dam, etc.) project?
   If yes, did you contribute physical labor, or did you contribute materials, or did contribute money? If yes, how much of each?

3. Did you agree with the decision to go ahead with the (bridge, road, dam, etc.) project? Why, or why not?

4. Do you think the village disaster committee coordinated starting and completing of the project in a proper way?

5. When was the last flood in your village/community? What activities/projects did the villagers do to protect the community against damage by the flood?

6. Was the process in which the (bridge, road, dam, etc.) project was completed different from other community project activities done in the past?

7. Where there any problems that occurred when starting and completing the (bridge, road, dam, etc.) project? How were the problems solved?

8. What would you suggest to avoid similar problems in any future community project?

9. Overall, do you think that the project that was completed was an improvement that was good for the community? If yes, why? If no, why not?

10. What other community projects are needed to help reduce the affects of flooding?

Appendix 'G' – Terms of Reference

Community Based Flood Mitigation and Preparedness Project
Post-Flood Assessment

Background:

Pact began implementation of the Community Based Flood Mitigation and Preparedness Project (CBFMP) in September 1998 in partnership with the Cambodian Red Cross (CRC) and the Federation of Red Cross and Red Crescent Societies (the Federation) through a Management Committee structure. Over 150 Red Cross Volunteers (RCVs) were trained in community-based disaster preparedness. The focus of the training was on measures to deal with annual flooding impacts.

In July and August 2000, Ponlok conducted a "Lessons Learned" assessment among 14 communities in the three target provinces of Kampong Cham, Kandal and Prey Veng. At the time the assessment began, Cambodia was affected by early rains and rising waters which continued into October, resulting in the worst flooding in 40-70 years. The three target provinces sustained the heaviest impact in terms of households affected and other damage.

Anecdotal information suggested that the RCVs were performing well, using their training to organize people to minimize the flood's impact and attending to the most vulnerable members of their communities. Given the magnitude of the year 2000 floods, it is important to revisit the volunteers and their communities to determine what was the experience of the flood, how the volunteers performed, what was the result of preparedness and mitigation strategies, what recommendations RCVs have for the training and institutional support received from the national and provincial CRC structure.

Objective:

To assess the impact and experience of a major flooding event on volunteers trained in community-based disaster-preparedness and identify areas to enhance training and follow-up support in future implementation of the program.

Process/Methodology:

The Consultant will work under the general direction of the Pact Country Representative. The Consultant will review the results of the "Lessons Learned" assessment and seek guidance from Management Committee regarding issues to be included in the follow-up assessment. The Consultant will then develop draft survey instruments for obtaining insights and observations about the flood experience from RCVs, Disaster Committee members and community members at large. The surveys will be designed to elicit quantifiable assessments of volunteer performance and preparedness and mitigation strategies. When the surveys are finalized, the Consultant will direct the field research, which will be conducted by the Pact Disaster Program Officer. The consultant will review and

analyze the research results and prepare a draft report for review by the Management Committee. Comments will then be incorporated in a final report.

Consultant Tasks:

- Solicit input from the Management Committee and prepare draft survey instruments
- Oversee field researcher in implementation of survey
- Prepare report outline for review by Management Committee
- Analyze survey results and prepare draft report
- Incorporate comments on draft report into final

Level of Effort: 10 Days

Illustrative Level of Effort

- Background research and consultation 1d
- Survey Instrument design 2d
- Survey oversight 3d
- Draft report 2d
- Final report 2d

Time Frame:

January – February 2001

Deliverables:

- Survey Instrument
- Draft Assessment Report
- Final Report with electronic copy (Microsoft Word) on 3.5"diskette

Appendix 'H' – Post-Flood Assessment RCV Questionnaire

We have asked you to meet with us to discuss your experiences with respect to the recent floods in your community. In particular, we are interested in learning about how the training that you received from the Cambodian Red Cross (CRC) provided you with skills and knowledge that enabled you to assist your community during the period of this disaster.

We would like to hear your comments and opinions on this matter in order to get some idea of how effective the training was in helping you to take action over the flood period. From our discussion here we hope to learn which parts of the training program were most helpful and which parts could be improved.

The information we receive when our research is completed in fourteen villages in the three provinces of Kandal, Prey Veng, and Kampong Cham, will be included in a report. This information will be used by the CRC to make decisions on making improvements to the CRC CBDP training program where necessary. This is being done to improve disaster response in your community in the future.

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1. What were the characteristics of the recent floods and what was the impact on your community? When did it start and how long did it last? How high were the floodwaters and what damage was done? What was different about this flood compared to other floods?

2. Did the training that you received from the CRC prepare you adequately for reducing the impact of the recent floods on your community? In what ways was the impact of the flood reduced? Do you think that the impact of the flood would have been worse without the CRC training?

3. Knowing that the flood was coming to your community, what did your group of CRCVs do to prepare the community for possible disaster?

4. In Module II of the CRC training program, you were asked to identify the vulnerabilities in your community with respect to being susceptible to disaster. Were the vulnerabilities experienced by your community during the recent floods the same ones that you had identified in the training course? Were there other community vulnerabilities experienced during the recent floods that were not identified before?

5. Did members of the community look to the CRCVs to provide a plan of action at the time of the flood? Did your community already have a flood disaster plan prepared?

6. What procedures did you take to mobilize the members of the community during the flood? What problems did you experience with respect to mobilizing the members of the community to take action?

7. What other problems did you experience at the time of the flood in terms of carrying out your duties as a CRCV?

8. Do you feel that the support that you received from the CRC staff (district and national) during the flood was adequate in order for you to carry out your duties as a CRCV?

9. How do you feel that you could have been better prepared as a CRCV for the floods that occurred?

10. What other training do you feel should be included in future CRC training courses that would help assist you when future disasters occur in your community?

11. Were repairs to your community's flood mitigation project (road, bridge, culverts, etc.) necessary after the floods receded? Were any preventative measures taken before the flood to protect the project? Was the community mobilized to repair any damage that resulted from the flood? Have any necessary repairs been completed? If not, is there a plan to complete the repairs?

Appendix 'I' – Post-Flood Assessment Village Disaster Committee Questionnaire

We have asked you to meet with us to discuss your experiences with respect to the recent floods in your community. In particular, we are interested in learning about your experience with the activities of the CRCVs in your community during the period of this disaster.

We would like to hear your comments and opinions on this matter in order to get some idea of how effective the CRCVs were in helping you to take action over the flood period. From our discussion here we hope to learn which activities of the CRCVs were most helpful and which activities could be improved.

The information we receive when our research is completed in fourteen villages in the three provinces of Kandal, Prey Veng, and Kampong Cham, will be included in a report. This information will be used by the CRC to make decisions on making improvements to the CRC CBDP training program where necessary. This is being done to improve disaster response in your community in the future.

We are not referring to flood relief efforts of the government, the CRC, or other agencies. We are only focusing on activities of the CRCVs in your community.

(Start with a general discussion about the flood.)

1. **Before** the floods arrived, what did the CRCVs do to help prepare your community?

2. **During** the recent floods, what did the CRCVs do that helped reduce the impact of the floods?

3. What do you think that the CRCVs could have **done better** both before and during the floods to reduce the impact of the flooding on your community?

4. What was different about this flood compared to other floods (i.e. water levels, duration, damage, etc.)?

5. Did the community have a disaster plan prepared before the flood? If yes, do you think it was an appropriate plan and was it carried out properly and orderly?

6. Did you use traditional strategies (the same strategies used during previous floods) to cope with the flood before and after it occurred? Were any activities and strategies to cope with the recent floods different from what the community did during previous floods? If yes, what were these different activities and strategies?

7. Did the CRCVs mobilize members of the community effectively to **prepare** for the flood, as well as mobilize the community effectively **during** the flood? In

particular, did their actions appear to be well organized and did people look to them for guidance and instructions? Did people follow their instructions?

8. Do you think that the impact of the recent floods on your community would have been worse if the CRCVs had not been present and active?

9. Were repairs to your community's flood mitigation project (road, bridge, culverts, etc.) necessary after the floods receded? Were any preventative measures taken before the flood to protect the project? Was the community mobilized to repair any damage? Have any necessary repairs been completed? If not, is there a plan to complete the repairs?

Appendix 'J' – Post-Flood Assessment Villager Questionnaire

We have asked you to meet with us to discuss your experiences with respect to the recent floods in your community. In particular, we are interested in learning about your experience with the activities of the RCVs in your community during the period of this disaster.

We would like to hear your comments and opinions on this matter in order to get some idea of how effective the RCVs were in helping you to take action over the flood period. From our discussion here we hope to learn which activities of the RCVs were most helpful and which activities could be improved.

The information we receive when our research is completed in fourteen villages in the three provinces of Kandal, Prey Veng, and Kampong Cham, will be included in a report. This information will be used by the CRC to make decisions on making improvements to the CRC CBDP training program where necessary. This is being done to improve disaster response in your community in the future.

We are not referring to relief efforts of the government, the CRC, or other agencies. We are only focusing on activities of the RCVs.

(Start with a general discussion about the flood.)

1. **Before** the floods arrived, what did the RCVs do to help prepare your community?

2. **During** the recent floods, what did the RCVs do that helped reduce the impact of the floods?

3. What do you think that the RCVs could have **done better** both before and during the floods to reduce the impact of the flooding on your community? (If there is no knowledge of the activities of the RCVs – what would you suggest that the RCVs should do to reduce the impact of floods when they occur?

4. Are you aware if the community has a disaster plan prepared before the flood? If yes, do you think it was an appropriate plan and was it carried out properly and orderly?

5. Did the community, or you yourself, do anything differently (as opposed to traditional coping strategies) to prepare or to cope with this flood compared to other floods? If yes, what did you do differently?

6. Did the CRCVs mobilize members of the community to **prepare** for the flood, as well as mobilizing the community **during** the flood? If yes, how did they mobilize the community?

7. Do you think that the impact of the recent floods on your community would have been worse if the CRCVs had not been present and active?

8. Were repairs to your community's flood mitigation project (road, bridge, culverts, etc.) necessary after the floods receded? Were any preventative measures taken before the flood to protect the project? Was the community mobilized to repair any damage? Have any necessary repairs been completed? If not, is there a plan to complete the repairs?

Project Contact

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The **Asian Urban Disaster Mitigation Program (AUDMP)**, launched in 1995, is the largest regional program of ADPC. The program, with core funding from the Office of Foreign Disaster Assistance of the United States Agency for International Development, will ultimately work in ten or more countries of the region. The program was designed to make cities safer from disasters. The goal of the AUDMP is to reduce the disaster vulnerability of urban populations, infrastructure, critical facilities and shelter in targeted cities in Asia, and to promote replication and adaptation of successful mitigation measures throughout the region. Towards this end, the program develops and supports national demonstration projects, information dissemination and networking activities, and policy seminars and professional training in the target countries of Bangladesh, Cambodia, India, Indonesia, Lao PDR, Nepal, Philippines, Sri Lanka, Thailand and Vietnam.

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The **Asian Disaster Preparedness Center (ADPC)** is a regional resource center dedicated to disaster reduction for safer communities and sustainable development in Asia and the Pacific. Established in 1986 in Bangkok, Thailand, ADPC is recognized as an important focal point for promoting disaster awareness and developing capabilities to foster institutionalized disaster management and mitigation policies.

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