Innovative Approaches to Engaging Communities in Participatory Dialogues that Enhance Community Disaster Preparedness

SELINA MAENZANISE[1] AND LISETTE BRAMAN, WITH SUPPORT FROM ARC ISD TECHNICAL STAFF
AMERICAN RED CROSS

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INTRODUCTION

The Caprivi Region, situated in northeastern Namibia, is bordered by the Zambezi River and the Kwando-Linyandi-Chobe river system, and dissected by the Okavango River; together with their respective tributaries, these rivers cause flooding in the low-lying plains of the region. The Kwando and Zambezi rivers bring water from Angola and Zambia, and are interconnected by a complex system involving the Linyanti and Chobe Rivers, as well as Lake Liambezi. Productive aquifers characterize the region, which receives over 550 mm precipitation annually, with low variability and relatively low evaporation levels.

In recent years, annual flooding has devastated the livelihoods of communities living near the Zambezi River and its tributaries. Riverine flooding increases food insecurity, soil erosion, pest infestation, and the incidence of water-borne diseases. In order to minimize vulnerability and enhance preparedness, the Namibia Red Cross Society (NRCS), among other National Societies with flood-prone communities in the Zambezi River Basin, is working in partnership with the American Red Cross (ARC) to implement a regional disaster risk reduction (DRR) program called Building Resilient African Communities (BRACES).

The program's key objectives are twofold. Firstly, it aims to enhance the disaster management capacity of the local Red Cross at the national and branch level. Secondly, it aims to support vulnerable communities living within the Zambezi River basin to implement community-based DRR (CBDRR) activities and become stronger and more resilient to the impacts of potential disasters, primarily floods. These activities are meant to improve community awareness and build community resilience to the risks associated with flooding through trainings and organized planning that uses local capacities to prepare and mitigate risks.

In its beginning phase, BRACES, like other CBDRR programs, seeks to identify communities' existing vulnerabilities and capacities, which it does through a Vulnerability and Capacity Assessment (VCA), engaging them through a participatory process to ultimately develop and implement context-specific Community Action Plans (CAPs). The VCA is an extensive process, requiring significant time from the community as well as a highly skilled facilitator to lead to effective results. The VCA is so comprehensive that it can often lead to a mismatch between community expectations and what the Red Cross can provide. In pursuit of more efficient ways engage communities in a focused dialogue that leads to action on disaster preparedness and risk reduction, the ARC began collaborating with the Prototyping, Evaluation, Teaching and Learning Lab (PETLab) at Parsons New School for Design (New York, USA) and the Red Cross/Red Crescent Climate Centre (RCCC) to develop new approaches – namely participatory games.

Games have a rich history in Africa, as in other parts of the world[2] They provoke individuals' thought processes and provide players with an opportunity for fully engaged experiential learning. Participants can see the consequences of their decisions play out in the span of a few minutes or hours and in an environment where it is safe to fail, so that learning can translate into more informed decisions in real-life. Games also have the ability to impart fundamental understanding of complex concepts: It was a game that built the necessary understanding and trust among illiterate farmers in Ethiopia that facilitated their participation in Oxfam's now highly successful and expanding rainfall-based index insurance program.[3]

[2] Gerdes, P (1994). On mathematics in the history of Sub-Saharan Africa. Historia Mathematica 21 (3):345–376

[3] Patt, A.G., Suarez, P. and Hess, U. (2010). How much do smallholder farmers understand and want insurance? Evidence from Africa. Global Environmental Change 20 (1): 153-161.

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Games can even be utilized as a potential climate service, as they have been developed to help communities, disaster managers and donors understand the risks and advantages of taking action (or not taking action) based on probabilistic seasonal forecasts and changing climate risks due to climate variability and global climate change.[4] They have the potential to impart knowledge and understanding in a manner that is much more profound, widespread, and long-lasting than could be achieved via a power-point or lecture.[5]

Within the Red Cross and Red Crescent Movement, the ARC is exploring the potential of games to be developed and packaged as replicable tools that bring life-saving learning and dialogue between vulnerable communities and local Red Cross staff to regions around the world. This review looks at the game Ready, one of the first products from this initial exploratory effort between the ARC, PETLab and RCCC, and focuses specifically on the first community pilot or "play-test" of Ready, which took place in Namibia in June 2012.

SOCIOECONOMIC BACKGROUND

Under the BRACES project, the ARC is supporting the National Red Cross Societies of Namibia, among other countries in Southern Africa. Project communities in the region are generally sparse rural populations that National Societies identified through initial assessments as having great potential to benefit from support to prepare for and mitigate the risks of annual floods. The beneficiaries' main livelihoods consist of fishing, subsistence farming, and livestock rearing; they are greatly dependent on water supply from nearby rivers.

TARGET AUDIENCE

The games were play-tested in one BRACES project community, Lisikili, and one non-BRACES project community, Isize, both of which are located in the Caprivi Region of Namibia. In both cases, the NRCS Project Officer responsible for disaster management called a community meeting during which interested persons were invited to play the game.

Participants who showed up for the game were primarily young adult females and their children, revealing that new strategies may be necessary to obtain more balanced participation from men and the elderly. Within the communities where games were implemented, NRCS indicated that the local staff may have to re-package the games as "role-playing activities" or "simulations" in order to attract the interest of the elderly community members, who are often decision makers of the household, to overcome the stigma that they primarily a youth-oriented pastime.

CLIMATE AND CONTEXTUAL INFORMATION

Rainfall in Southern Africa is highly variable from year to year, often very dry during El Niño events and wet during La Niña events. Additionally, the region experiences a high degree of decadal rainfall variability, alternating between one or more dry decades and one or more wet decades. Recently the region has been experiencing a wet period, in terms of both its decadal variability and its inter-annual variability, attributed to recent La Niña events. There is uncertainty among models as to whether Southern Africa will become drier or wetter overall due to global climate change. However, climate models do seem to agree that, in the long-term, rainfall event in the region are likely to be more intense when the do occur.

In Namibia's Caprivi Region, rainfall often occurs upstream, and the downstream communities recognize the signs of imminent flooding[6] by watching as the river begins to rise slowly, over the course of weeks. Eventually, the water reaches the villages and leaves communities inundated for months at a time, disrupting livelihoods and preventing people from staying in their homes.

IMPLEMENTATION

PROCESSES AND MECHANISMS

Ready was created by PETLab game-design students, who sought to capture the complexities of disaster preparedness and response using a simplified version of reality. The game requires players to make decisions under time constraints (as usually happens in a disaster situation), prioritizing and planning different options; the game design also stresses the importance of early action.

Ready is played with two competing teams of about six players each. Game-play is voluntary, and each community member or interested stakeholder is free to participate either in the game or as an observer and in the post-game discussions. Game participants sit in any arrangement that allows maximum interaction among team members, preferably a circle.

Photo credit: Catalina Cortazar Valdes (2012)

The facilitator presents the game scenario. In Lisikili and Isize, areas both prone to annual flooding, the scenario was: "The river is rising and will reach your village within a week. What will you do to make sure your household is prepared?" It is important to note that the game scenario can be adapted to any hazard situation relevant to the community, such as fire, drought, or earthquake.

[4] Suarez, P., Mendler de Suarez, J., Koelle, B. and Boykoff, M. (forthcoming). Serious Fun: Scaling Up Community Based Adaptation through experiential learning. In: Ayers, J., Huq, S., Reid, H., Rahman, A. and Schipper, L. (eds.) Scaling up Community-based adaptation. London, Earthscan.

[5] For a comprehensive description of challenges and opportunities in organizational capacity for game-based participatory processes, see Mendler de Suarez, J., Suarez, P. and Bachofen, C. (forthcoming). Games for a New Climate. Boston University Frederick S. Pardee Center for the Study of the Longer-Range Future. Boston, USA.

[6] Conversation with Simon Mason, Research Scientist at the International Research Institute for Climate and Society (IRI) at Columbia University's Earth Institute, January 2012.

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The game proceeds as follows:

i. The teams are given 10 minutes to come up with as many preparatory actions as they can for what their household would do in the situation presented to them. Next, teams are asked to collectively decide which actions they would choose if they only had time to do eight of those actions and to indicate these individually on eight separate sheets of paper. Actions can either be written down or depicted through art, determined by the reading/writing level of the players.
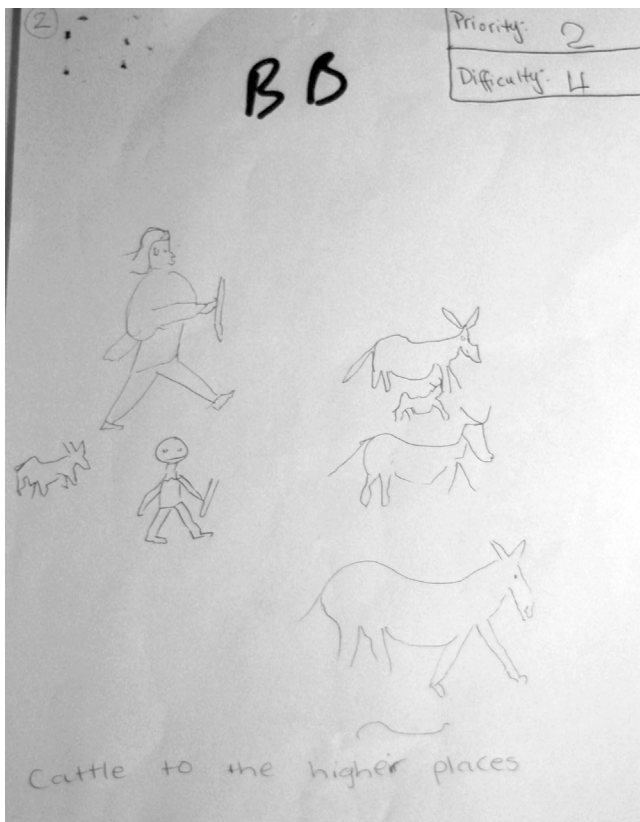
A depiction of a priority action in Lisikil, Nambia

Teams are then asked to assign a level of difficulty to each of these tasks. To do so, each team is given 20 dice to distribute among their eight actions. Difficulty is indicated by how many dice are assigned to a task. Each task must have at least one die, but more difficult actions might be assigned four or five dice. The number of dice assigned is recorded in the corner of each paper. Papers are also labelled as Team A or Team B so that participants will recognize their team's actions.

Photo credit: Catalina Cortazar Valdes (2012)

ii. The facilitator then collects the pieces of paper with the dice on top of them and places them around the play space or community. If the community is small, its action items can be placed near their appropriate locations. For example: "get water" would be placed near a bore hole. In most situations, though, actions will be placed around an open space.

iii. The teams are given 60 seconds to find and complete their team's actions. In order to complete an action, participants must roll each die until it turns up as a one. So the more difficult an action, the more dice it has been assigned, and the longer it takes to complete by rolling a one for each die. More than one person can be working on rolling to complete an action at the same time and participants are given an opportunity to strategize beforehand in case they want to go in pairs or small teams to complete difficult tasks faster.

Photo credit: Catalina Cortazar Valdes (2012)

iv. Upon completing an action, the individual picks up the paper and dice and carries on to other actions. Game-play ends when the sixty seconds are up. Uncompleted actions stay on the ground.

When the time is up, all the players in a team bring their dice together, and the team gets one point per die they collected. The team with the most dice wins the game. The facilitator then leads the community in a discussion. For the Red Cross, his is ultimately the game's objective: a focused and participatory dialogue with the community on their disaster risk. Care needs to be taken to ensure that strategic questions are asked. Examples of initial questions, which are likely to be refined in the future, include:

i. Choose an action that you completed and tell us what it was. Did the other team have the same action? Why or why not?
ii. How did you choose your actions?
iii. What was your top priority?
iv. How did you prioritize your actions?
v. How difficult would that action be to accomplish? Why?
vi. Of all these actions what did you do the last time a flood came?
vii. What did you not do?
viii. What assets, property, or valuables would you have lost by not completing certain actions?
ix. Now that you've identified what actions are important to take, are there some that you'd want to do sooner, such as during the month when the rains start upstream, or as soon as a rise in the water level is detected?

Through the game and discussion, the intention is that the community has a shared experience in which they've begun to evaluate:

• Their level of preparedness
• What they can do in the future to reduce their risk and increase their preparedness
• When it makes sense to do certain actions
• Who needs to be involved
• The barriers to each action that need to be addressed

STAKEHOLDER INVOLVEMENT

The RCCC initially joined efforts with Parsons in 2009 with the intention of helping Red Cross/Red Crescent staff, volunteers, and communities to begin thinking about linking appropriate action to probabilistic climate forecasts and understanding how risks are changing due to climate variability and change.[7] ARC became interested in games and their potential to start participatory and focused dialogues on disaster risk reduction in communities and funded the RCCC to work with a PETLab class during the spring semester of 2012. The class' task was to come up with the first in a series of games that would spark such dialogues and complement tools contained in the VCA toolkit.

Game designers improve their games by play-testing them, to see how people respond, where they get confused, and which rules need to be revised. Play-testing the game with the actual communities they were intended for was thus a very important step for both the game designers as well as for ARC, to assess how well the games were initiating community dialogue that would catalyze their engagement and focus in a longer-term DRR planning process.

While the ARC's International Services Department (ISD) works in regions throughout the world, the BRACES program was at an ideal point to test the games, because VCA's had most recently been conducted and project implementation activities had not yet started. With a strong local Red Cross staff in Namibia receptive to testing out the games, two communities were chosen – one a BRACES project community and one community where the local NRCS branch had contacts but was not implementing BRACES. Having two communities was important so that revisions to the game could be made after the first play-test, and tested the following day with a new set of players.

FUNDING MECHANISMS

Development of games produced by PETLab during the 2012 spring semester, including Ready and its pilot test, were funded by the American Red Cross. This was performed at relatively low cost due to the fact that the game designers were students interested in learning about real-world application of their games while earning course credit toward their degrees. However, the whole endeavor of bringing participatory games as innovative tools for dialogue and learning to the Red Cross has been possible thanks to a larger RCCC initiative of conceiving, formulating, and integrating games into humanitarian work, which has been funded in large part by the Climate Development and Knowledge Network (CDKN).

MANAGEMENT AND DECISION MAKING

ARC, RCCC and game designers from Parsons all worked together to create Ready and various other games. While the ARC had the ultimate say as to which game would be pilot-tested in Namibia, a collective voting process helped identify the top two game choices.

NRCS, through its disaster management project officers and Red Cross volunteers, was the key player involved in the facilitation of the games in the communities. NRCS is also setting up village-level disaster management committees, which may serve as the entry points for the games in the future.

Since the project was funded by ARC to meet specific objectives, and because the coordination of logistics for the pilot with the NRCS was managed by ARC field staff, ARC has been the primary decision maker, determining the future direction of the games for its use. However, in the classroom and in the field, PETLab game designers are the ones making rapid decisions about how to incorporate feedback from game play into revisions. NRCS and other Red Cross National Societies have the ultimate say over if and how games are piloted in their communities, and once on board, make decisions regarding community participation and volunteer logistics. The RCCC has less of a decision-making role and works more as a convener and advisor to the collaboration, bringing to the table their prior experience with game design and technical knowledge of climate risk management.

EVALUATION AND LESSONS LEARNED

Given that the game instructions and game design were in English, the game had to be translated and facilitated in the local language of Silozi. To overcome this obstacle, the initial plan was to train local volunteers to facilitate the game for communities in Silozi. PETLab game designers had ambitiously planned to teach the volunteers three games in a half-day training (Ready, Story-Go-Round, and another game developed through a separate RCCC initiative called Humans versus Mosquitoes). However, it quickly became apparent when working with the 14 volunteers across cultural and language barriers, that much more training and support were needed. The training was extended to a full day, which enabled the volunteers to play Ready twice, with a small break for Humans versus Mosquitoes, but still did not allow them time for a structured opportunity to practice and hone their skills at facilitating the game. Thus a key take-away from this experience is that design of the games is just one small piece of the puzzle. Equal, if not more, forethought needs to go into the design and planning of the training in order for facilitators to effectively bring games to their communities.

After the facilitators' training day, decisions had to be made about how to facilitate the next two days of piloting of Ready with communities. It was decided that two volunteers would facilitate the game as a pair, with close guidance and support from PETLab game designers. ARC staff requested that support be provided by the game-design professor, but instead a student game designer took on the task. When the game started, rather than working as a pair leading both teams through the exercise together, the two facilitators split up and each focused their attention on a single team. As a result, both teams received different versions of the instructions. It also became apparent that instructions for the entire game had been given all at once, instead of in phases that would have carefully guided participants through the game process. The supporting game designers were slow to pick up on what was happening, in part because it was all happening in Silozi and in part because they were not prepared to intervene and provide the necessary level of support. The quick presentation of instructions delivered by the volunteers launched players into the game. While ARC staff stepped in to clarify points of confusion on numerous occasions, key learning concepts from the game were almost certainly lost.

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[7] See 4-minute video of the game-enabled dialogue held in 2009 in Senegal between forecasters, humanitarian workers and subsistence farmers: http://www.youtube.com/watch?v=Mpj_EbKdwEo

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Photo credit: Ramiro Corbetta (2012)

After a very challenging first day, the second day of the pilot test improved by leaps and bounds. The game design professor facilitated the game with the help of a Red Cross branch officer for translation purposes, who went on to lead the post-game discussion with support of his colleagues from the branch. The chaos of day two was transformed into calm, collected and thoughtful play, followed by a substance-packed conversation, where ARC staff were able to take questions a step further, asking the community, "If it's December, and you know the floods are coming in February, what can you and your household do now to prepare?"Vommunity members were able to raise important barriers to action: 1) they do not have land tenure rights to settle in areas further away; and 2) the river is important for their livelihoods, therefore there is a significant incentive to stay close to it for as long as possible.

Day two substantiated the lesson learned on the importance of training, but also led to insight that in order to bring games to scale, it would be wiser to invest in more extensive training for local Red Cross staff to become game facilitators, since they speak the local language, can be relied upon to work with all of the project communities, and are best positioned to tailor questions during the post-game discussion to suit the local Red Cross needs for information and context for engaging the community in a DRR planning process.

Over the course of the pilot, game designers worked to simplify the rules. While games with more complex rules might be possible when conducted by highly skilled/trained facilitators, games that can be brought to the field and facilitated at scale by local staff and volunteers need to be simple – in fact, even simpler than game designers would have anticipated.

For example, the use of beans was initially included to assign levels of priority to the various tasks, along with the dice representing difficulty. However, these two layers added a level of complexity to the game that was magnified as volunteer facilitators struggled to rapidly learn game rules well enough to facilitate them. It was decided that excluding the beans simplified the layers without significant impact on the outcome of the game, given that the participants were already being asked to prioritize and pick the eight most important actions. Furthermore, prioritization could come out during the post-game discussion through targeted questions.

Additionally, volunteers and local support staff need to be well managed. Perhaps because there was so much excitement about the game, there was a tendency for those already familiar with it to interject or give hints to community members playing the game for the first time. These individuals had to be monitored and reminded to let community members engage in their own in discussion during the brainstorm of actions. This is not only necessary to preserve the fun of the game, since the discussion aims to get community members thinking about hazards and possible preparedness actions that can be attained given the resources at their disposal.

At the beginning of the PETLab semester, game-design students conducted preliminary research,but lacked on-the-ground experience providing contextual social and cultural information that would have been advantageous in the development of the games. For example, only once the game was tested in the field did students find out that the use of dice or even playing cards is frowned upon by the Namibian authorities because they are associated with gambling and are therefore unsuitable within the cultural context of the project. Game

therefore unsuitable within the cultural context of the project. Game designers therefore need to develop alternative delivery systems that are in agreement with the local cultural norms.

Additionally, although seemingly simple, the materials required to play the games are not often available in local villages. Game designers and communities were encouraged to think creatively about alternative game materials so the overall essence of the game was not lost. It was suggested that the communities could improvise alternatives to items like dice by replacing them with coins or bottle-tops. In the case of Ready, dice representing difficulty could be replaced with having the participant throw a certain number of stones into a circle drawn on the ground from various distances. The experience play-testing the game in the field was a critical step in helping student game designers to understand their audience and on the ground context. The professor of the class, who was part of the pilot-test, now brings insight from this experience to future classes convened to focus on game design for the Red Cross.

In summary, there were a number of lessons that came out of the experience:

• The training of facilitators needs to be better planned and more thorough.
• The games' success is in large part dependent on the facilitator's skill, and games need to be designed with the intended facilitator's skill set and experience in mind.
• On the moresuccessful day of the pilot (day two) quality discussion did indeed result.
• Due to the enthusiasm of game players and observers, it can take team work among support staff to maintain a suitable environment for optimal game play experience.
• The local context and available materials require game designers to think creatively and along with communities about types of materials games can employ.

The ultimate take-away for ARC staff is that, in order to create space for games to reach their full potential as a scalable means of enhancing Red Cross engagement with communities, focus needs to be as much, or more, on the rollout of the games, as it is on the development of the games themselves.

CAPACITIES

EXISTING CAPACITIES AND GAPS
The collaboration between the ARC, RCCC, PETLab and the local National Societies combines capacities in disaster management, climate risk management, local context, and game design. The combination of expertise brought together by this partnership is promising. However, challenges emerge when individual partners are working in isolation from each other – since game designers do not themselves have disaster management expertise, for instance. Close coordination and collaboration must be maintained.

In addition to DRR, there is interest in exploring how games can bring relevant climate risk management concepts to the ground in communities where ARC works. Currently, the level of existing climate expertise varies between and within National Societies. The entire Red Cross Red Crescent Movement does have access to resources from Red Cross Climate Centre, which has teamed up with scientific institutions such as the International Research Institute for Climate and Society (IRI) at Columbia University's Earth Institute. This collaboration connects disaster managers within the movement with climate services such as the IFRC Help Desk at IRI, to which they can send their questions regarding forecasts, weather, climate variability and change and receive a non-technical response in one business day. It also connects disaster managers to IRI's Federation Map Room, which offers six-day rainfall predictions in context, and Red Cross-tailored seasonal forecasts. But games may play a crucial role in helping disaster managers understand fundamental concepts that would increase their utilization of those resources and more systematically implement Early Warning, Early Action (EW/EA)[8] approaches and climate-smart DRR.

LOOKING TOWARD THE FUTURE

GOALS AND PROJECT EXPANSION
Rather than limiting the focus of the games to the VCA, which is just one step in the CBDRR process, a broader look is being taken at where community engagement and participation is critical in the CBDRR process, and how games might be designed for each of those stages as entry points to strengthen community involvement.

The goal for the future is to create a suite of innovative participatory tools and a methodology in which to roll them out, in order to enhance the ARC and other National Society's ability to engage with communities at strategic points within the CBDRR Project Life Cycle, to generate meaningful dialogue that results in measurable action and risk reduction. To meet this goal, next steps include:

1) Ensuring that games are designed to fit into strategic points within the ARC CBDRR project life-cycle, particularly when participatory engagement with communities is critical

2) Enhancing the monitoring and evaluation of games to quantify their efficacy (compared with other participatory tools) at facilitating the dialogue, action, and/or risk reduction measures necessary in each phase of the CBDRR Project Life-Cycle

3) Developing a comprehensive methodology for rolling out the games in the field, which spans the process of introducing branch staff to the games, training them to be effective facilitators, and ultimately transferring key concepts of game design that would enable them to develop games on their own for their local context and purpose

It is envisaged that eventually, finalized versions of the games will be made available to National Societies around the world as tools to enhance community-based risk reduction projects. Climate scientists may also need to be involved as the games progress so that they can bring in additional concepts related to climate variability and change important to climate-smart CBDRR.

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[8] Early Warning, Early Action is defined as, "Routinely taking humanitarian action before a disaster or health emergency happens, making full use of scientific information on all timescales." Early Warning, Early Action Handbook, IFRC (2008). Online at: http://www.climatecentre.org/downloads/File/reports/Early%20Warning%20Early%20Action%202008.pdf

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Photo credit: Catalina Cortazar Valdes (2012)

THE WAY FORWARD

Now that the first game has been piloted, the challenge is to use the lessons learned to effectively produce and rollout games that are both simple in design and capable of enhancing discussion and learning around complex topics. While feedback was positive and communities enjoyed playing the games, more extensive monitoring and evaluation of games is needed to tangibly demonstrate the contribution that games make to facilitating the level of dialogue and action at each point within the CBDRR process.

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