

PARTNERS FOR RESILIENCE

Disaster Risk Reduction Game Kit



Dissolving Disasters

Facilitator Guidelines

Game overview

Description: This physical participatory activity aims to support experiential learning and dialogue on the concept of “resilience”. Players become donors or subsistence farmers and face changing risks. They must make individual and collective decisions, with consequences. Rich discussions emerge, and there will be winners and losers.

Why this game?: To learn about communication skills, decision making under uncertainty, role of donors in humanitarian and development work

Facilitator skill level: 4 out of 5 stars

Intended audience: Community members /donors/ disaster managers/ volunteers/ branch officers etc.

Number of players: 10 to 40 players

Time needed for gameplay/discussion: : 60 to 120 minutes (depending on experience of facilitator, group size, and desired level of discussion during gameplay).

Materials:

Die: 1 (to represent rains – preferably bigger than a fist so people can see number from afar)

Umbrella: 1 (to indicate protection against too much rain)

Bucket: 1 (to indicate protection against too little rain)

Truncated cone: 1 (to represent rains under climate change. *You find an example in the game kit*)

Frisbee: 1 (can be any object that acts as a coin to flip)

Normal Beans: 10 “normal” beans per player (big beans are better for gameplay)

Special Beans: 1 red token per player

String: about 20 feet

Blank sheets of paper: 6

Prizes: for winning farmer, for winning donor, and for winning village

Printouts: Player sheets (1 per player), Game assistant sheets (1 each), and Facilitator’s sheet.

Optional: PowerPoint projection, audio equipment for amplifying facilitator with large groups

Game Facilitator: 1

Game assistants: 2 for up to 15 players, 3 assistants if more players

Sheets and PowerPoint can be found on:

<http://www.climatecentre.org/site/dissolving-disasters>

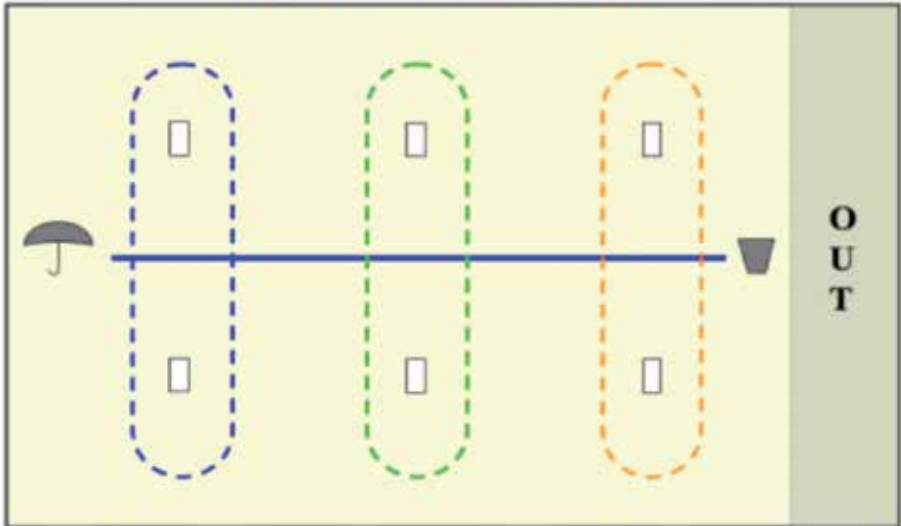
Play space requirements: An open, rectangular space that can accommodate all participants walk about the room

Setup:

1. *Villages:* Lay the string on the floor along the middle of the room, parallel to one of the sides – thus dividing the room in two long rectangular sectors. Each sector of the room constitutes a village. The string represents a river that farmers cannot cross: it is a national border – therefore the neighbouring villages are in different countries.
2. *Umbrella and bucket:* Place them at opposite sides of the room, near the end of the string dividing the room in half. Within each village, the area near the umbrella represents “flood protection” (farmers standing there do not lose beans in case of floods), the area near the bucket represents “drought protection” (farmers standing there do not lose beans in case of droughts), and the central area represents “no disaster protection”.
3. *Blank sheets of paper:* Each village gets 3. Place each sheet on the floor within a village, one for “flood protection”, one for “drought protection”, and one for “no disaster protection”
4. *Two bowls with special beans:* Each bowl should contain half of all the special beans (for example, for 24 players, each bowl must contain 12 special beans). These bowls will be given to players taking the role of donors.
5. *Three bowls with normal beans:* give each game assistant a bowl with normal beans, as well as a game assistant sheet. One assistant is in charge of the “flood protections” area of both villages, another is in charge of the “drought protection” area. The “no disaster protection” area is covered by a third assistant, or by the facilitator.
6. *Two villages:* split players into two teams (ideally each subgroup should be similar in terms of gender, hierarchy, discipline, etc). Each team occupies one of the villages. Choose a name for each village. Give one normal bean and a player sheet to each farmer.

7. *Select donors*: 2 players in each village are “hired” by donor (selected by facilitator, or by team). Donors leave the village, go to the side, and receive the bowl of special beans.

Room configuration



Umbrella: protects against too much rain



Bucket: protects against too little rain



Blank sheet for donor's special beans



River separating two villages



"Flood protection" area



"Drought protection" area



"No protection" area

Facilitator guide

Game Play

- 1) Remind farmers of their choices (Go towards umbrella for “flood protection”, towards bucket for “drought protection”, and to center for “no disaster protection”)
- 2) Players make decisions (donors about whether and where to place special beans, and farmers about whether to seek disaster protection and taking special beans)
- 3) Countdown
- 4) “Stop!”
- 5) Collection of upfront payment (1 bean) for those who sought flood or drought protection
- 6) Roll of the die
- 7) Game assistants give or take beans according to farmers’ choice and roll of the die
- 8) Throughout the round facilitator can share remarks about observed behaviour
- 9) Next round begins

At the start of the 2nd round, introduce new conditions affecting player decisions

At the third or fourth round, introduce climate change. Show new device for random generation of disasters or not (in the case of truncated cone: “drought” if small base on the floor; “flood” if small base on the floor; no disaster otherwise).

See Facilitation Guide for step-by-step facilitation guidance.

Rules

Donors cannot converse with farmers until beginning of fifth turn.

Players must make decisions before countdown, there will be roll of the die, and outcomes depending on player choices and random rains.

At the time the countdown is over, players must be stay standing.

Variations

“Dissolving Disasters” is a game deliberately designed with system flexibility, in order to enable people and organizations to explore possible modifications to game rules and narrative aimed at better capturing aspects of the relationships between context, decisions and consequences. The donor role can be removed from this game as well.

Facilitation guidelines

Preparation Time: 10-15 minutes

GamePlay

Assuming the role of subsistence farmers organized in villages (teams), players make individual decisions that lead to collective patterns of choice and risk. Each farmer makes decisions about crop selection for the coming rainy season. They indicate their choice by moving about a room with an umbrella at one extreme and a bucket in the opposite end:

- Flood protection (for example, planting rice – which performs well under excessive or normal rains). To invest in flood preparedness, a farmer must walk to the area near the umbrella.
- Drought protection (for example, planting cassava – which performs well under dry or normal conditions). To invest in drought preparedness, a farmer must walk to the area near the bucket.
- No disaster protection (for example, planting maize – which performs very well given normal conditions, but fails if too much or too little rain). While drought and flood protection involve an upfront payment of one bean, no protection has no cost. Farmers preferring this choice stand in the centre of their village.

These decisions lead to gaining or losing beans, depending on whether a disaster occurs or not (as determined by a roll of the die). Players who due to a disaster must pay more beans than they have must leave the game.

Donors at work: A few participants take the role of an external organization (i.e. donor) trying to support a village and dissolve the threat of disasters with limited resources. Donor choices include:

- Disaster response (give beans to farmers who don't have enough after a disaster),
- Disaster preparedness (give farmers incentives to invest in flood or drought protection),
- Growth (help farmers maximize accumulation of beans, assuming no disaster occurs).

Explain rules (PowerPoint file available)

- Players should *expect* to be confused, both by the rules and throughout gameplay. Like in the real world, in this game the relationship between decisions and consequences can be complex... Being confused is a natural condition (which should dissipate as gameplay evolves and people figure out the implications of the various rules).
- The game is a simplified representation of reality. It is designed to amplify certain aspects that matter for the purpose of learning about resilience, while excluding other aspects of reality that, while relevant, would make the game too complicated. Players join the game accepting the rules – no challenging the rules during gameplay.
- While consultation with team members is encouraged, each player's decisions are individual (nobody can force someone else to act in a certain way). There will be some "practice" rounds, and then six rounds "for real" (with losers, winners, and prizes).
- Farmers cannot share beans – in this farmers simply can't give away beans (otherwise players tend to behave in unrealistically altruistic and cooperative ways).
- Proceed to explain the rest of the game rules, following the sequence indicated in the PowerPoint slide.

Practice round #1 (donors not active)

- *Show the die*, which represents the probability distribution of precipitation, based on the past record of rainfall (1 = "drought"; 6 = "flood"; no disaster otherwise)
- *Remind farmers of their choices*: Go towards umbrella side for flood protection, towards bucket for drought protection, and to center for no disaster protection). Protection has a cost: if they choose it they must pay one bean upfront
- *Indicate short time available* for consultation before deadline for individual decisions
- *Start countdown for deadline*: "10, 9, 8..." (After end of countdown players can't change decision)

- *End countdown with a loud “STOP!”* (Farmers must stay where they are – their location expresses their choice)
- *Collect protection payments:* Farmers who chose flood or drought protection must pay one bean to the game assistant (if relevant, facilitator can make or invite observations about decision patterns, such as risk aversion, similarity or difference across teams, etc).
- *Roll the die*
- *Give & take performance points*
 - If there is no disaster, game assistants give 2 beans to every farmer
 - If a flood happens, game assistants give 2 beans to those who are in the “flood protected area”, and ask 4 beans to all other farmers
 - If a drought happens, game assistants give 2 beans to those who are in the “drought protected area”, and ask 4 beans to all other farmers
 - If a farmer cannot pay the 4 beans, she must leave the village and is out of the game (narrative: farmer’s family will not have enough food to survive the full year, and must seek survival in the capital city). Note that a farmer who pays 4 beans is safe and can stay, even if she is left with no beans
 - If needed, illustrate what would have been the consequences of a different roll of the die, so farmers become fully familiar with the rules

Practice round #2 (donors active)

Remind farmers of their choices (Go towards umbrella for “flood protection”, towards bucket for “drought protection”, and to center for “no disaster protection”)

Explain donor role (They have a limited number of special beans -say exact quantity-, and with that budget they must make decisions for the full duration of the “real” game: six years (i.e. 6 turns). The special beans look different from normal ones, but behave in the same way (the distinction is only to highlight donor influence).

Importantly, the donor’s budget is not enough to support all farmers all the time – tough choices await. Donors work as a team, with each donor team covering one country. They have three choices to use their special beans:

- **Disaster response:** After the roll of the die, if a disaster happens and a farmer doesn’t have enough beans to pay 4 to the game assistant, the donor can

intervene by giving to the farmer as many beans as needed to cover the gap. The exchange must happen before the assistant asks for the 4 beans: if at that time the farmer hasn't received food aid, she must leave the game.

- Disaster preparedness: Before the roll of the dice, donors can give incentives for farmers to choose flood or drought protection. They do so by placing as many special beans as they please on the corresponding blank sheet of paper lying on the floor (in the "flood protection" or "drought protection" area).
- Growth: Before the roll of the dice, donors can also provide incentives for farmers to maximize accumulation of beans, assuming no disaster occurs. They do so by placing as many special beans as they please on the corresponding blank sheet of paper lying on the floor (in the "no disaster protection" area).

Farmers cannot walk with a special bean just taken from the ground from one area to another area before the roll of the die (for example: if donor gives maize seeds to a village before the rains, a farmer cannot turn that seed into drought-resistant cassava during that turn).

The special beans invested by the donor in disaster preparedness and growth will probably not be enough to help every farmer in a village... It is up to the community to figure out which farmers benefit from donor support. By the end of the countdown, whoever holds a special bean in her hand is the beneficiary of the donor investment. In any given turn, each farmer can take only one special bean from the floor, and keep it. No farmer can take more than one special bean from the floor.

The impact of a special bean is simple: the farmer who took a special bean keeps it. A farmer can use the special bean to pay for flood or drought protection before the roll of the die, or to help pay the cost of future disasters.

Play this second practice round with the same sequence as in the first practice round, but enabling some additional time for donors and farmers to converse about options. Make it clear that the rains will start eventually, and the countdown will be coming soon, so donors need to ensure that their decision to place beans on the blank sheets needs to give farmers enough time to make informed decisions. Make the countdown a bit longer ("20, 19, 18..."), to ensure awareness that the rains are coming.

If needed, illustrate what would have been the consequences of a different roll of the die, so farmers become fully familiar with the rules.

Explain a few additional rules before starting game “for real”

The “real game” is about to start, with losers, winners and prizes (show what prize will be given to winning farmer, winning village, and winning donor). Before moving on:

- Invite players to ask any questions to clarify rules. Answer all questions about game rules and mechanics, but refrain from answering any rules about strategy – let people learn through their own thinking and action
- *(Optional)* Explain that after the countdown but before the roll of the die, you will ask farmers to write down in their player sheet what was their decision, and whether or not they have a special bean – as well as any comments they could write about the thoughts and feelings influencing their decision. This data collection will be used to analyse decision patterns, potentially leading to a journal article.
- Explain a minor tweak in the rules: If a farmer cannot pay the 4 beans, she migrates to the capital city, and spends one turn looking for a job... Survival is barely possible but life is miserable, so the following year the farmer decides to migrate back to the rural area... but to the other village, across the river. This population movement can put additional pressure on donor resources. At the end of the game, the village with the most farmers is the winning village
- Explain that donors and farmers can spend about 5 minutes before the beginning of the countdown, discussing long-term strategy, bearing in mind that the donor will not be able to converse with farmers again until after the end of the fourth round (no travel budget, so no ‘planning’ dialogue will be permitted between first countdown and beginning of fifth turn): donors will only speak with farmers in the form of putting beans on the floor, except for disaster response, when donors can ask farmers how many beans they need).
- Mention that, like in the real world, throughout the game there may be surprises...
- State clearly that the game will end after six rounds, or after running out of time.

Begin game “for real”

Start by giving sufficient time for donors and farmers in each village to have a meaningful conversation (their last one). Then:

- 1) Players make decisions (donors about whether and where to place special beans, and farmers about whether to seek disaster protection and taking special beans)
- 2) Countdown
- 3) “Stop!”
- 4) Collection of upfront payment (1 bean) for those who sought flood or drought protection
- 5) Roll of the die
- 6) Game assistants give or take beans according to farmers’ choice and roll of the die
- 7) Throughout the round facilitator can share remarks about observed behaviour
- 8) Next round begins.

Introduce new conditions affecting player decisions

At the second turn it can be a good idea to introduce an external force that changes conditions for gameplay and therefore can influence decisions (see ppt file). For example:

- **“La Niña”:** scientists observe that there is an unusual cooling of the waters in the Pacific Ocean (a phenomenon often called “La Niña”, which changes winds and currents across the globe, in ways that increase chances of drought in East Africa). This year, the chances of drought are not 1 in 6, but 50% instead. Facilitator shows the Frisbee, indicating that it will be thrown spinning in the air. If it falls face up, normal rains. If it falls face down: drought! (one in two chances). Game proceeds as always, with players making decisions that will have the same consequences as before
- **Market Volatility:** Changes in exchange rates and commodity prices diminish the ability of donors to support the countries where the villagers are: Now donor has to spend twice as much special beans to have the same impact.

- **Other shocks:** depending on interest of game session organizers, other types of shocks can be built into the game (e.g. civil unrest erupts and donors can reach villages) At the third or fourth turn it is time to introduce climate change. Show new device for random generation of disasters or not (in the case of truncated cone: “drought” if small base on the floor; “flood” if small base on the floor; no disaster otherwise). All other rules remain unchanged: Donors cannot converse with farmers until beginning of fifth turn. Players must make decisions before countdown, there will be roll of the die, and outcomes depending on player choices and random rains.

End Game

After the end of the sixth round (or about 15 minutes before the end of the session), the game is over. Identify winning farmer, donor and village, and give out prizes.

Discussion Questions

After celebrations are over, invite players to spend a few minutes filling the back of their player sheet, writing comments on the ‘system dynamic attributes that they want (“Collaboration vs Competition”, “Feedbacks & Delays”, etc.). Then invite players to form small groups (5-8 persons) to share insights and come up with 1-2 very brief comments to be shared with plenary about what they experienced and what they learned during the session. End with by thanking all participants.



DRR and CCA training from IIRR, Philippines 2012 (Photo: Margot Steenberg/Red Cross)

Supported by:



This document is an output from a project funded by the UK Department for International Development (DFID) and the Netherlands Directorate-General for International Cooperation (DGIS) for the benefit of developing countries. However, the views expressed and information contained in it are not necessarily those of or endorsed by DFID, DGIS or the entities managing the delivery of the Climate and Development Knowledge Network*, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed on them.

Acknowledgements

This game was designed for the Rockefeller Foundation Workshop Series on Resilience, held in New York City during July and August 2011. In just a few months since its inception, this game has been played in Argentina, Austria, England, Ethiopia, Finland, Peru, Switzerland, South Africa and the United States. Participants ranged from donors and government officials to students and humanitarian workers.

Special thanks to Cristina Rumbaitis del Rio for embarking in this participatory learning and dialogue process, and for providing the necessary support and guidance; to the Rockefeller staff that engaged in testing an earlier version of the game (including Evan Michelson, Julie Carandang, Kippy Joseph, and Zia Khan), and to the students from the Parsons School of Design who gave valuable feedback on the game prototype (Basak Haznedaroglu, Clay Ewing, George Bixby, Lien Tran, Michelle Jackson, Mohini Dutta), as well as Eric Holthaus, Margaret Arnold, Maria de los Angeles Suarez, and Miquel Muñoz.

"Dissolving Disasters" builds on a game mechanic utilized for "Choices in a Changing Climate", a participatory game designed by Janot Mendler de Suarez and Pablo Suarez for the World Bank Social Protection Team. Additional thanks to the Climate and Development Knowledge Network (CDKN) Innovation Fund, and all the Rockefeller Foundation staff and guest speakers who joined the resilience workshop series and turned the game into a serious, fun platform for discussion. Our gratitude also to Amy Sharp, Ida Benedetto and Justin Benn for the short film sharing gameplay at the Rockefeller Foundation headquarters

This game was developed with support from the American Red Cross (International Services Team), and from a research grant to the Red Cross/Red Crescent Climate Centre from the Climate and Development Knowledge Network (CDKN Action Lab Innovation Fund).

As such, this game is an output from a project funded by the UK Department for International Development (DFID) and the Netherlands Directorate-General for International Cooperation (DGIS) for the benefit of developing countries. However, the views expressed and information contained in it are not necessarily those of or endorsed by DFID, DGIS or the entities managing the delivery of the Climate and Development Knowledge Network, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed on them.

