



Forecast Based Early Action Game

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About the Game

Weather and climate information is increasingly being used to trigger preparedness and earlier responses to severe weather events. Evidence shows that finance arriving at the right time can increase the impact of every dollar spent by as much as 50%.

This game has been designed as an interactive way of explaining what forecast based early action means by asking players to take on different roles within a hypothetical community early action planning scenario in a fictional district, Magulu.

With a focus on the impacts of flooding on life, property, health and agriculture, players are encouraged to consider what actions they would take in advance to avoid or lessen these impacts if they had the right information.

The game aims to:

- Explain forecast based early action in an interactive and fun way;
- Introduce the concepts of thresholds for action, triggers, no regrets action and uncertainty;
- Illustrate that stakeholders from a range of sectors need to work together to build the resilience of a community and agree priorities for early action;
- Demonstrate that to support forecast based early action, National Meteorological Services need to provide information on what the weather will do not what it will be (i.e an 'impact based forecast')

Instructions for playing the game

Facilitation: one person who has knowledge of the game to introduce the concept, instructions and guide the players. One facilitator per table or per group discussion depending on numbers.

No of players: Minimum of 7 people per group. There are 7 roles in the game so each group needs to have a minimum of 7 players. If there are more than 7 but less than 14, people can work together on roles.

Length of game: 1 hr (approx)

Resources:

- Single sided print outs of following pages of this document put in separate sealed envelopes with name of each role written on envelope:
 1. Group Briefing and impacts of flooding in Magulu photos
 2. District Leader - Magulu
 3. The Red Cross – Magulu
 4. Ministry of Agriculture Extension Worker - Magulu
 5. Disaster Risk Manager - Magulu
 6. A Civil Society Rep from one of the worst affected communities in the Magulu district
 7. Health Officer - Magulu
 8. Head of the National Meteorological and Hydrological Service
- Print out in A3 (or larger) of the Forecast Based Early Action Plan (1 per group)
- Hats! Providing silly hats for players to wear is not essential but helps to create a more information atmosphere and put people into their roles.
- PowerPoint presentation with instructions on. Again, this is not essential but helps to remind people what they are doing whilst playing.
- Put envelopes, Forecast Based Action Plan and hats on table before participants arrive.



Format for game – facilitation tips:

1. **Open the game** with brief explanation about forecast based early action. Explain that game is a hypothetical scenario so players shouldn't get too concerned about whether the details are correct/accurate as it has been designed to be illustrative.
2. Ask all in the group to choose an envelope.
3. Facilitator reads out the **GROUP BRIEFING**.
4. Ask one person from each group to volunteer to be a **District Leader** (and put on a hat if using)
5. Ask District Leader to open envelope and read briefing for **District Leader** out to the group
6. Other players read their briefings to themselves then the group (and take hats)
7. Encourage the District Leaders to 'run the meeting'. Give groups 40 minutes to complete.
8. After 40 minutes, inform the group that a forecast has just come in from the NMHS which says:

There is a high likelihood (over 80%) of severe rainfall in the Magulu district in the next 7 days. Widespread flooding is expected along the low lying land bordering the Tala river.

Ask the group to decide to prioritize actions 1 – 5 (1 – highest priority to 5 – lowest priority).

9. **Close the game:** Ask District Leaders to feedback on what their priorities for action and other details of the action plan if you have time. Ask them to reflect on how they felt about developing the plan. If relevant, can also talk about what funding mechanisms could be used to support the actions they have outlined.
10. **Optional variations to the game:**
 - Provide forecasts at shorter or longer timescales (e.g. 1 day ahead to 2 months ahead)
 - If working with participants where English is not the first language you may consider asking all to 'read' their roles to themselves and then contribute to discussion so as to reduce any time/discomfort of reading aloud.

GROUP BRIEFING

Magalu is a fertile district located in the Eastern region of Lo with a population of 62,600 people. It covers the most important river basin of the country (Tala river). Large numbers of people live along the riverbank.

The country experiences 2 rainy seasons a year. Higher than normal quantities of rain in the last 5 years has meant that flooding has become a significant issue in the area.

The key impacts of flooding include: livelihood destruction; deaths from water-borne diseases (dengue and diarrhoea) and drowning; and transport and communication disruption (ie: collapsed bridges and roads).

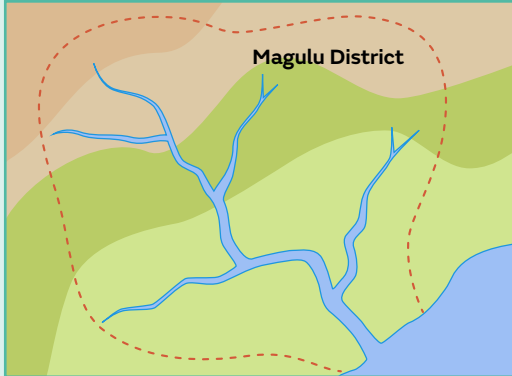
The most important livelihoods for the region are agriculture (corn and rice production), livestock, river fishing and small businesses. 70% of the population are considered vulnerable and living on less than \$2 a day.

The District Leader has brought you all together at a meeting to understand **how to plan early action** in advance of a severe weather event. The District Leader will use this information to request finance from the National Early Action Fund recently set up by your government. The amount available to each district for early action finance is up to \$500,000.

The District Leader has created an Early Action plan to guide these discussions and help identify and prioritise actions.

Please work through this plan in your group. There is only 40 minutes to work together – so keep focussed!!

Impacts of floods in Magulu



Print out and put in separate sealed envelope with name of role written on envelope

DISTRICT LEADER

Community leaders have challenged you on why nothing is being done about the floods that have affected the district in recent years.

You have therefore assembled key representatives in your district to contribute to an Early Action Plan for increased resilience to flooding. You need to supervise a discussion (**40 minutes!**) to come up with an initial draft of your plan.

You are worried you will not be re-elected next year if no progress is made to better prepare the district for floods.

You want to be one of the first districts to submit an application for funding from the National Early Action Fund that has recently been set up.

The other stakeholders at the meeting are:

1. The Red Cross – Magulu District
2. Ministry of Agriculture Extension Worker – Magulu District
3. Disaster Risk Manager - Magulu District
4. A Civil Society Rep from one of the worst affected communities in the district
5. Health Officer – Magulu District
6. Head of the National Meteorological and Hydrological Service

RED CROSS DISTRICT LEAD

The Red Cross' official auxiliary role is to provide humanitarian assistance to Lo's government and support the most vulnerable.

Your team are responsible for helping communities affected by the flooding.

Last year, over 300 homes were destroyed by floods. These left over 1,200 people in need of emergency assistance.

When you receive reports of floods, your team set up evacuation shelters to provide temporary housing for displaced families. Unfortunately, some of the more remote communities could not be helped because the bridges were destroyed by river surges.

If shelters could be set up in advance of the flooding, the population would be encouraged to evacuate and you could support more people. The shelters take about 2 days to construct and it usually takes your team 1 day to reach them.

Taking early action costs money and you can only take action if there is a strong likelihood of rain (e.g. over 70%). At the moment, the forecast you receive doesn't provide that information so you're reluctant to trigger action. It also doesn't say how the rainfall will affect river levels.

In previous years, intense rainfall has caused the river to flood and damaged 80% of houses that are near the river.

The shelters cost \$500 and last year 150 were required.

The shelters are equipped with clean drinking water, non-perishable food items, shelter and bedding so if any items aren't used, they can be returned to the district warehouse.

MINISTRY OF AGRICULTURE - MAGULU EXTENSION WORKER

Floods in recent years have destroyed or seriously damaged the corn and rice crops grown by the river banks. You are encouraging farmers to plant these crops on slopes where possible.

Because fertile soil from the mountains is carried downstream in floodwater, the flat land bordering the river now provides excellent grazing for cattle for most of the year. You have observed that in recent years this land is now mostly used for livestock.

Last year the floods were so bad that local farmers reported up to 50% of their cattle drowned. This had a profound impact on the livelihoods of the families affected and meant many had to take their children out of school so they could work on the family farm. In your experience those children have not returned to school.

You were not able to take any meaningful action when reports of animal deaths started coming through last year. If you had known in advance that flooding was likely you would have arranged for transportation of animals to government owned land higher in the hills on a temporary basis.

To organise the transport operation you need a week's notice and be aware this causes significant disruption to families.

The cost of transporting 100 cows is around \$100. Based on satellite data of land use, you estimate there are 5000 cows in your district which would be affected.

DISASTER RISK MANAGER - MAGULU DISTRICT

Your team work with the Red Cross and provide immediate assistance to those who have been affected by floods.

The homes and livelihoods of those in low-lying areas are undoubtedly the most impacted. However, humanitarian interventions led by the Red Cross (e.g. evacuations) mean those people tend to have access to clean drinking water in the weeks following the floods.

Data analysis from the admissions to health clinics from the past 3 years shows that patients admitted for diarrhoea and dengue fever mainly come from 10 communities who live on higher ground. Their water supply comes from a reservoir in the lowland area which is often flooded and therefore contaminated.

This year, your priority is to ensure these districts are educated in safe water for drinking, hygiene and sanitation. You can provide this training to school teachers and community educators. The training of trainers, plus the time for them to spread these vital messages, takes around 2 months.

You would also ensure drinking water tanks are available at each of the 10 communities who are most affected. You would need 3 days notice to arrange this and the tanks cost \$50 each.

CIVIL SOCIETY REPRESENTATIVE – MAGULU DISTRICT

You are passionate about supporting the families in your community whose lives have been destroyed by floods in recent years. Last year, your brother's youngest son drowned in flood water before the evacuation process started.

You are continually seeking meetings with the District Leader to demand that alternative housing provision is made for people in your community. It has experienced the worst impacts of flooding in 3 of the past 5 years.

The District Leader keeps assuring you the increased rainfall which has led to flooding is associated with El Nino and that 'the worst is over'. You have found information online to suggest that increased rainfall patterns are expected to become the 'new norm' due to climate change. If this is the case, you feel that government should be making some long-term adaptation plans.

Many families in your community are now in the process of re-building their houses and livelihoods after leaving evacuation centres. One of the biggest challenges for them is accessing district cash transfer system because they have lost their personal identity documents in the flood.

In the absence of long-term systemic change you want to insist on provision of waterproof document bags to all affected households in Magulu. You have looked into the cost of these and they can be as cheap at \$1 for 20. There are 6,000 households that would need these.

HEALTH OFFICER – MAGULU DISTRICT

Last year, there were high levels of admissions for diarrhoea and Dengue Fever to health clinics in the district. The highest levels of admissions were children.

50 health clinics were so overwhelmed that some of their routine activities could not be performed. For example, in the Magulu province, maternity services could not be provided due to lack of supplies. This led to secondary health impacts of maternal and infant mortality.

When the first cases of widespread admissions with diarrhoea and Dengue Fever started coming through, you put in an order to increase supplies. However, **you were frustrated** that it took 2 months to procure these, which was too late in the majority of cases.

If floods are expected again this year you would like to ensure clinics are well supplied to treat the health conditions associated with drinking contaminated water (drips, rehydration salts, oxygen tanks, blankets, temporary tent-clinics).

You have calculated these would cost \$500 per clinic. There are 10 clinics in the district.

If these supplies aren't used, they can be kept by the clinic to treat routine cases of dehydration etc or be kept for future outbreaks.

NATIONAL METEOROLOGY AND HYDROLOGY SERVICE (NMHS)

You are the newly appointed Director of the NMHS and want to improve these services by ensuring weather and climate information is tailored to the needs of specific users.

Your team have recently improved their forecasting skills and you're keen to ensure these are applied to help build the resilience of the nation to severe weather. You are starting to explore how you can provide impact-based forecasts.

To do this, you need to develop a better understanding of the impacts of hazards in your country and how forecasts can support early action and enable better management of risks.

You are excited to be invited to this workshop. It is the first opportunity you've had to share your organisations improved capability and explore how it can be applied.

Your services currently include:

- Short-range forecasts: Forecasts for next 3 days. High confidence
- Medium range forecasts: Forecast for next 5-10 days Medium confidence
- Seasonal forecasts: Forecasts for next 3 months Low confidence

NB/ **confidence** means that there is good accuracy associated with the forecasts

You also manage a hydrological unit who are developing a model of the Tala river basin to improve information on expected water levels in the river linked to rainfall forecasts.