

GRC Terms of Reference (ToR) Digital Platform for Gameplay for the Anticipation Hub

Consultancy to co-develop and deliver a suite of collaborative online experiences linking early warnings, early actions, and financing

As part of a German Federal Foreign Office (GFFO) funding to the German Red Cross – Thematic Funding Global Project II

German Red Cross
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Abbreviations

EAP	Early Action Protocols	GRC	German Red Cross
DREF	Disaster Relief Emergency Fund	ONS	Operating National Society
DRR	Disaster Risk Reduction	HQ	Headquarters
DM	Disaster Management	IFRC	International Federation of Red Cross and Red Crescent Societies
FAO	Food and Agriculture Organization	PNS	Partner National Society
FbA	Forecast-based Action	RC/RC	Red Cross / Red Crescent Movement
FbF	Forecast-based Financing	RCCC	Red Cross Red Crescent Climate Centre
GP II	Global Project II (German Federal Foreign Office Funding to German Red Cross – Thematic Funding)	ToR	Terms of Reference
GFFO	German Federal Foreign Office	WFP	World Food Programme

1 Background

1.1 Background of assignment

The assignment is part of the Global Project II (GP II: Thematic funding of the GFFO to GRC – subcomponent Anticipation in the humanitarian system) funded by the German Federal Foreign Office under the project reference no. G219.503).

Since 2015, with substantial support of the German Government, under the umbrella of the Federal Foreign Office Action Plan on Humanitarian Adaptation to Climate Change, the IFRC and Red Cross Red Crescent national societies and its Climate Centre (RCCC) have introduced Forecast-based Financing (FbF) to tackle weather-related hazards in over 31 countries to date. The anticipatory approach combines forecasts with other risk data to predict the impact of extreme weather events to trigger early action. Thus far FbF, has elicited promising pilot results in countries including Ecuador, Peru, Mozambique, Togo, the Philippines, Vietnam, Bangladesh, and Mongolia.

After 5 years of successful development and implementation of **Forecast-based Financing** and the anchoring of the idea towards more anticipation in the humanitarian system, GRC together with IFRC and RCCC is setting-up an **Anticipation Hub as a network of experts and an online exchange and learning platform** for policy makers, scientists and FbF/Anticipation practitioners worldwide. The Hub will continue to consolidate the FbF approach, further developing anticipatory humanitarian action methodologies and their application within pilot projects through participatory processes. Given the ongoing pandemic and the need to reduce carbon emissions associated with

air travel, it is crucial to be able to hold these participatory processes online. We need to create ways to enrich virtual events, inspiring creative and focused learning, and dialogue processes – not only despite the physical distance but also taking advantage of the formidable opportunities offered by digital technologies.

The RCRC Climate Centre has developed a wide range of games aimed at supporting face-to-face explorations of the relationships between forecasts, humanitarian work, and forecast-based financing. The core mechanic involves individual and collective decisions whereby players confront a difficult choice involving tradeoffs between investing in disaster preparedness or not (for example: allocating coins to purchase umbrellas that represent protection against too much rain, or investing in prosperity-seeking measures). Decisions must be made before a countdown, and extreme events may happen or not based on a random generation process such as a flip of a coin, a roll of the dice, or drawing a card from a special deck. Probabilities may change over time, and resources may become increasingly scarce, leading to incentives and disincentives to investing in preparedness.

Examples of these physical games include:

- [“Paying for Predictions”](#): key decisions involve whether or not to invest in preparedness at the beginning of each turn (based on flood risk, partly dependent on roll of the dice upstream), and whether or not to acquire an early warning system that allows to foresee changing probabilities.
- [“Decisions for the Decade”](#): key decisions involve how much to invest in preparedness at the beginning of a cycle of ten turns, and balancing individual and team preferences.
- [“Gender & Climate Game”](#): a key feature is differential vulnerability among players, based on fictional gender and other attributes.
- [“Master that Disaster”](#): a key feature is the presence of an external funder, such as a government entity, which can allow to invest in social protection systems as well as injections of cash to absorb climate-related shocks.

The RCRC Climate Centre has tested options for deploying these kinds of games during virtual sessions mediated by videoconference tools. While these approaches can work well enough with very experienced facilitation, the rapidly growing work of the Anticipation Hub requires exploring options to improve and scale up this approach. There are many options to enrich participant experience through a tailor-made digital platform that allows for serious gameplay where decisions have consequences involving randomized events that support learning, dialogue, and even design of real-world mechanisms for forecast-based action.

1.2 Intended sector of intervention

Forecast-based Financing, Disaster Risk Financing, Anticipatory Humanitarian Action, Humanitarian Assistance, Early Actions and Funding mechanisms, Disaster Risk Reduction, Virtual Gameplay, Education & Learning for FbF, User experience, Interactive web-based Design of Gameplay.

1.3 Main stakeholders

Partners in the RC/RC Movement

- International Federation of Red Cross and Red Crescent Societies (IFRC)
- German Red Cross (GRC)
- Red Cross Red Crescent Climate Centre (RCCC)
- Regional Offices of IFRC (Asia-Pacific, Africa, Mena and North Africa and Latin America)
- Host National Societies in high-risk countries (such as e.g. Peru, Ecuador, Bangladesh, Philippines etc.)
- Partner National Societies supporting HNS in establishing FbF or other anticipatory humanitarian systems (e.g. British Red Cross, French Red Cross, Danish Red Cross etc.)

Further relevant stakeholders and humanitarian actors

- United Nations agencies active in anticipatory humanitarian action, e.g. FAO, WFP, UNOCHA etc.
- START Network and its partners (Welthungerhilfe etc.)
- Donors (Federal Foreign Office etc.)
- Early Action Focus Task Force

2. Objective and expected Outputs

2.1 Objective

The objective is to contract the co-design, development and hosting an interactive tool that supports game-enabled virtual engagements convened by the Anticipation Hub and partners. We are looking for a digital platform that can host a range of serious gameplay activities with a single login for users, able to accommodate large groups (up to 250 participants, though we anticipate most sessions having 15 to 50 players) and allowing for effective administration and setup interface dedicated to the Red Cross Red Crescent Movement and partners.

2.2 Expected Outputs

The service provider is expected to deliver the following outputs:

1. Digital platform offering common framework for a range of gameplay experiences

Create a user-friendly digital environment that allows facilitators to select from a variety of game options to contribute to a virtual learning event. This platform is easy to navigate, allows central access through a self-managed administration area, and is compatible with

data privacy and other relevant regulatory frameworks applicable to the work of the Anticipation Hub. The platform should be web based and not require installation of additional applications. This platform with all games stated below is available to the German Red Cross and humanitarian partners at no cost and maintenance is guaranteed.

For all games involving a **random mechanism** determining probability and occurrence of extreme events, three options will be made available:

- a) Physical: Event facilitator uses a physical object to explain probabilities and determine results in front of the videoconference camera for all players to see (such as flipping a coin, rolling the dice, or drawing a card from a deck), then facilitator enters the randomly obtained result into the digital tool to determine consequences for players.
- b) Digital for all: Facilitator “rolls the digital roulette” (or other virtual randomizer that captures desired probabilities) to determine consequences for all players.
- c) Digital for each player: Each participant or team rolls their own “digital roulette” (or other virtual randomizer that captures desired probabilities) to determine consequences.

For all games, the **decision-maker role** will be available in the following four options:

- Solo: Each player has own resources, makes own decisions, experiences own consequences. No gameplay interaction beyond comparing results, winners & losers, etc.
- Team: Each participant joins one or more other participants to form a team (team size: 2 or more. The team has own resources, makes own decisions (mechanism to be defined, will be complex to create digital incarnation), experiences own consequences. Gameplay interaction within team.
- SOP: Each player or team submits a ‘Standard Operating Procedure’ that dictates how future decisions will be made (for example, in *Decisions for the Decade*, a player would submit the following SOP: “Allocate 2 Umbrellas + 2 Buckets + 6 Thumbs Up for all future decades using normal 6-sided dice rolls”; or in P4P “Stand up for early action if the upstream rain was a 5 or more”)
- External funder: This decision-making role will be made available for experienced facilitators using the game platform. In addition to the ‘normal’ players/teams (with own, limited resources), the event facilitator will be able to add an additional role representing the equivalent of [‘FbA by the DREF’](#): an external entity with abundant but limited resources who can transfer resources to players, either for *disaster response* (paying to deal with shock after extreme event happens), or for *risk reduction* (paying to reducing the magnitude of loss caused by all future extreme events), or for *early action* (paying for anticipatory measures that eliminate or reduce loss caused by imminent extreme events), or for *early warnings* (supplemental, timely information about the probability of imminent extreme events).

For each game instance, a **data visualization** approach will be offered on screen, so that:

- **Pre-roll:** After the end of the decision making countdown and before the random determination of extreme events or not, players will be able to visualize how their investment decisions compare to the rest of the players (for example, in “Paying for Predictions” (a) proportion of players that took the same decision to invest in preparedness or not, and (b) graph depicting how many players were willing to pay how much for the early warning system.
- **Post-roll:** After the random determination of extreme events or not, players will be able to visualize how the consequences of their decisions compare to the consequences for rest of the players (for example, in “Paying for Predictions” (a) proportion of players that acted in vain or failed to act, and (b) proportion of players that were unable to pay for disaster response and therefore experienced a crisis.
- **End game:** After the end of the game, players will be able to visualize how the consequences of their decisions compare to the consequences for the rest of the players (for example, in “Paying for Predictions” (a) proportion of players that acted in vain or failed to act, and (b) proportion of players that were unable to pay for disaster response and therefore experienced a crisis.

Where possible, data from previous gameplay sessions will be available to show, in order to compare how participants in a session performed compared to previous sessions involving the same game.

2. Digital version of existing Games

Create within the digital platform an online version of the following games:

1. **Paying for Predictions:** An online version of the physical game described [here](#).
2. **Decisions for the Decade:** An online version of the physical game described [here](#).
3. **Auditorium game:** An online version of the physical game for large audiences described in this [video](#) (minutes 01:15 to 04:15).

It is estimated that these two games “Paying for Predictions” and “Decisions for the Decade” will be playable in about 60 to 90 minutes and must be entirely browser-based (no downloads needed). The games should be fully available online as a default with the IP potentially resting with the designers.

3. Digital Mechanism Allowing the Creation of Tailor-made Games (with similar mechanics)

Create within the digital platform a way to enable experienced facilitators to set up an online game tailored to the specific needs of a given session. This should entail essentially

the same basic mechanics of “Paying for Predictions” and “Decisions for the Decade”, namely:

- Ability to set up a randomly generated set of events (such as flooding, heatwaves, etc.), including the option of pre-defined event magnitudes (such as hurricanes category 1, 2, 3, 4, or 5) and a pre-defined range of probabilities of occurrence, ideally expressed either as percent (via 5% increments), or as a ratio between two numbers (such as “1 in 6 chance of a drought this year”). This can be calibrated to the actual probability distributions of the real-world hazards confronted by event participants.
- Ability to define a range of attributes for entities at play, such as name and location, exposure to hazards of different magnitudes, vulnerability, and capacities.
- consequences for the randomly generated events (such as “if a flood happens, those who didn’t invest in flood preparedness experience a humanitarian crisis unless they invest in flood response”. This can be calibrated to reflect the range of actual impacts resulting from decisions and extreme events in the real-world context confronted by event participants.
- Ability to define a range of investment options with different costs under certain circumstances (such as “flood preparedness before rolling the dice costs 1 token” or “flood response after a category 5 event costs 4 tokens”). This can be calibrated to the actual investment costs of the real-world actions available to event participants.
- Ability to set up bidding mechanisms for certain investments at different instances of the game sequence (for example, after round 2 of “Paying for Predictions” the lowest bidder can acquire an early warning system that indicates the value of the roll of the dice upstream”)
- Ability to set up game sequences involving either *Turn-based decisions* (as in “Paying for Predictions” base structure, where players make decisions before each ‘roll of the die’) or *Cycle-based decisions* (as in “Decisions for the Decade” based structure, where players make one decision at the beginning of a cycle that consists of multiple turns/rolls: choice involves pre-allocating investments for many subsequent random events)
- Ability to set up ‘winning’ and ‘losing’ criteria for individuals and teams (such as “the player with most tokens by end of game is the winner” and “the losing team is the one with the most humanitarian crises by end of game”)

The final deliverables will be approved by Stefanie Lux (Lead Anticipation, GRC) and Pablo Suarez (RCCC).

3. Implementation

3.1 Process and Methodology

Where applicable, products will be reviewed by the RCRC Climate Centre Team, the GRC Anticipation Team as well as the teams of FbF/Anticipation projects in different countries.

There will be bi-weekly calls to discuss progress and next steps between the service provider and the RCRC Climate Centre and the GRC Anticipation Team.

3.2 Proposed Timeline and Milestones

Phase	Date	Milestone
<u>Phase 1</u> Conceptual design of the digital platform, with mock-up screens and clear description of website architecture and user experience.	December 2020	<ul style="list-style-type: none"> - Design document describing proposed tool and user experience - One round of design feedback completed - Invoice
<u>Phase 2</u> Coding, setup, and initial playtest of the digital platform	January 2021	<ul style="list-style-type: none"> - Playable online versions of the games “Decisions for the Decade” and “Paying for Predictions” - Schedule for at least two playtesting sessions of both games in early February, for eliciting feedback and interface design revisions.
<u>Phase 3</u> Refinement and completion of the digital platform	February 2021	<ul style="list-style-type: none"> - Final versions of the games “Decisions for the Decade” and “Paying for Predictions” (integrating feedback from playtesting sessions, and including data visualization) - Functioning prototype for the digital mechanism allowing the creation of tailor-made games (integrating feedback from at least one playtesting session) - User manual describing how to set up and facilitate future game sessions - Final invoice

4. Responsibilities and duties

4.1 German Red Cross

GRC will support the service provider with the necessary working material/documents and information. GRC will support the service provider in the setting up of contacts if needed with necessary stakeholders. GRC will provide timely feedback and provide input on desired direction and content.

The service will be provided by the German Red Cross Headquarter Team. All communication to partners and stakeholders will be coordinated closely with the Anticipation Team.

4.2 IFRC Geneva, RCRC Climate Centre

The RCRC Climate Centre and IFRC will be available for (online) meetings and provide technical guidance and content if needed.

4.3 Service Provider

The service provider shall lead and coordinate the development process for all deliverables but can request inputs/contributions from GRC and RCCC staff. The service provider shall take care that the relevant actors actively take part in the process and their views and expertise are considered.

The service provider has the responsibility to revise drafts, based on the comments from GRC, IFRC and RCCC.

The service provider is always expected to work in close coordination with the team at the GRC, IFRC and RCCC.

5. Reporting and invoicing

GRC will analyse and discuss the deliverables with the service provider before the final payment of the contract is approved.

The final deliverables will be approved by Stefanie Lux (Lead of Anticipation, GRC).

The first payment will cover 40% of the total amount agreed on after satisfactory submission of deliverables following phase 1. The remaining 60% will be payed upon receipt of invoice and satisfactory submission of deliverables following Phase 3, no later than February 28, 2021.

6. Quality and ethical standards

The service provider should take all reasonable steps to ensure that the process is designed and conducted to adhere to recognized scientific standards, and to ensure that the process is technically accurate, reliable, and legitimate, conducted in a transparent and impartial manner. The collected data must be safeguarded, respecting existing data security rules, to protect the rights of the individual.

7. Service provider profile

Obligatory

- A proven record of designing virtual platforms for playful interaction

Preferable

- Experience in designing such a platform in the context of the humanitarian sector, development cooperation, or climate change action

8. Relevant background information

Forecast-based Financing in general:

<https://www.forecast-based-financing.org/>

<https://manual.forecast-based-financing.org/>

<https://www.climatecentre.org/programmes-engagement/forecast-based-financing>

<https://media.ifrc.org/ifrc/fba/>

Scientific and other articles for Anticipatory Action in the humanitarian system:

<https://www.odi.org/>

<https://www.wfp.org/publications/forecast-based-financing-factsheet>

<http://www.fao.org/emergencies/fao-in-action/ewea/en/>

<https://startnetwork.org/start-fund/crisis-anticipation-window>

[OCHA CERF – anticipatory humanitarian action](#)

[Thesaurus – working document](#)

[FATHUM](#)

Anticipation Hub

<https://www.forecast-based-financing.org/anticipation-hub/>

[Anticipation Hub on LINKEDIN](#)

[Anticipation Hub on Twitter](#)

Red Cross Red Crescent Climate Center – Games

<https://www.climatecentre.org/resources-games/games>