

FLOODING

_ Urban flood risk in Sarajevo

MTIV SUMMER SCHOOL_13/09/2024.

STAKEHOLDERS

_Stakeholders



Children



Families/ adults



Policy makers, local communities, municipalities, governments



Engineering and construction firms;



People indirectly affected by the floods;

education: in schools and through board or online games;

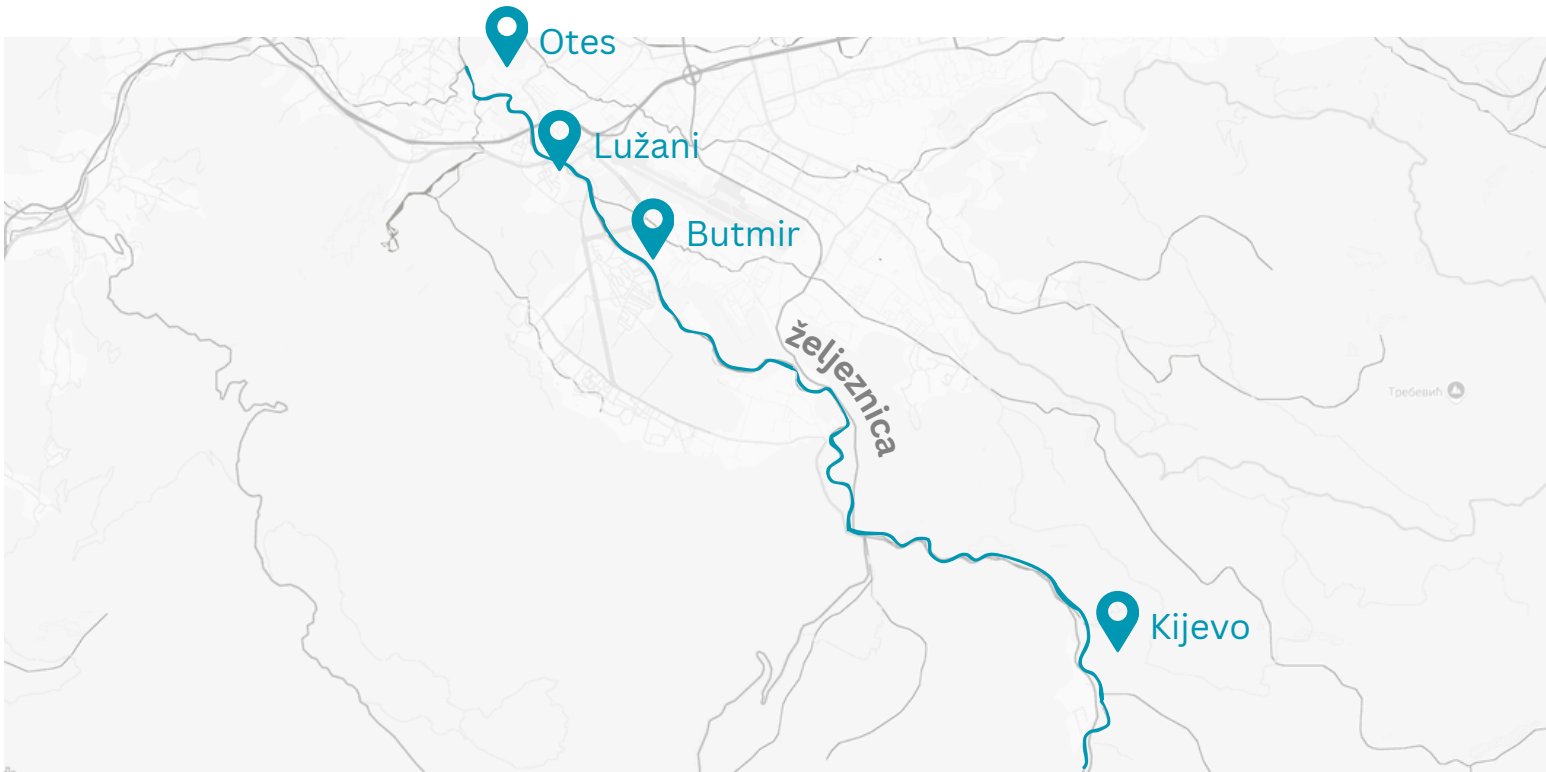
(re)action: staying informed about the threat of flooding;

laws and reproctions: establishing and enforcing laws related to reducing the causes of flooding

schools through education;
politicians through setting and enforcing laws;
emergency services in case of an accident;
adults through interest in the flood problem;
activists by showcasing the problem and thinking of solutions on many different levels;

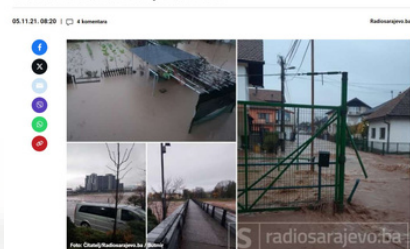
WHO CAN HELP?

_Observations



- Otes
 - _poor drainage system
 - _unregulated riverbed
- Lužani
 - _building in flood zone
- Butmir
 - _closeness to the riverbed
 - _unregulated riverbed
- Kijevo
 - _small hydro power plant
 - _changing climate conditions

Pogledajte alarmantnu situaciju na Ilidži, Butmiru i Otesu: Hitno treba nešto poduzeti



KATASTROFALNA POPLAVA Bujica uništila legendarni restoran Brajlović na Ilidži



POPLAVE napravile haos u i Trnovu: Stanovnici Kijevo evakuisani, voda neispravna za piće



IDENTIFY

Causes, consequences, stakeholders

_Causes



Urban expansion into flood-prone areas;



Uncontrolled building without proper infrastructure;



Allowance for construction and industrial development;



Significant reduction in water protection zones around the Sarajevo field;



Illegal deforestation;



Aged plumbing system;

_Consequences



Impact on groundwater and water source protection zones;



Increased pollution and environmental degradation;



Destruction of agricultural land;



Flooded settlements;



Lack of housing options immediately after floods;

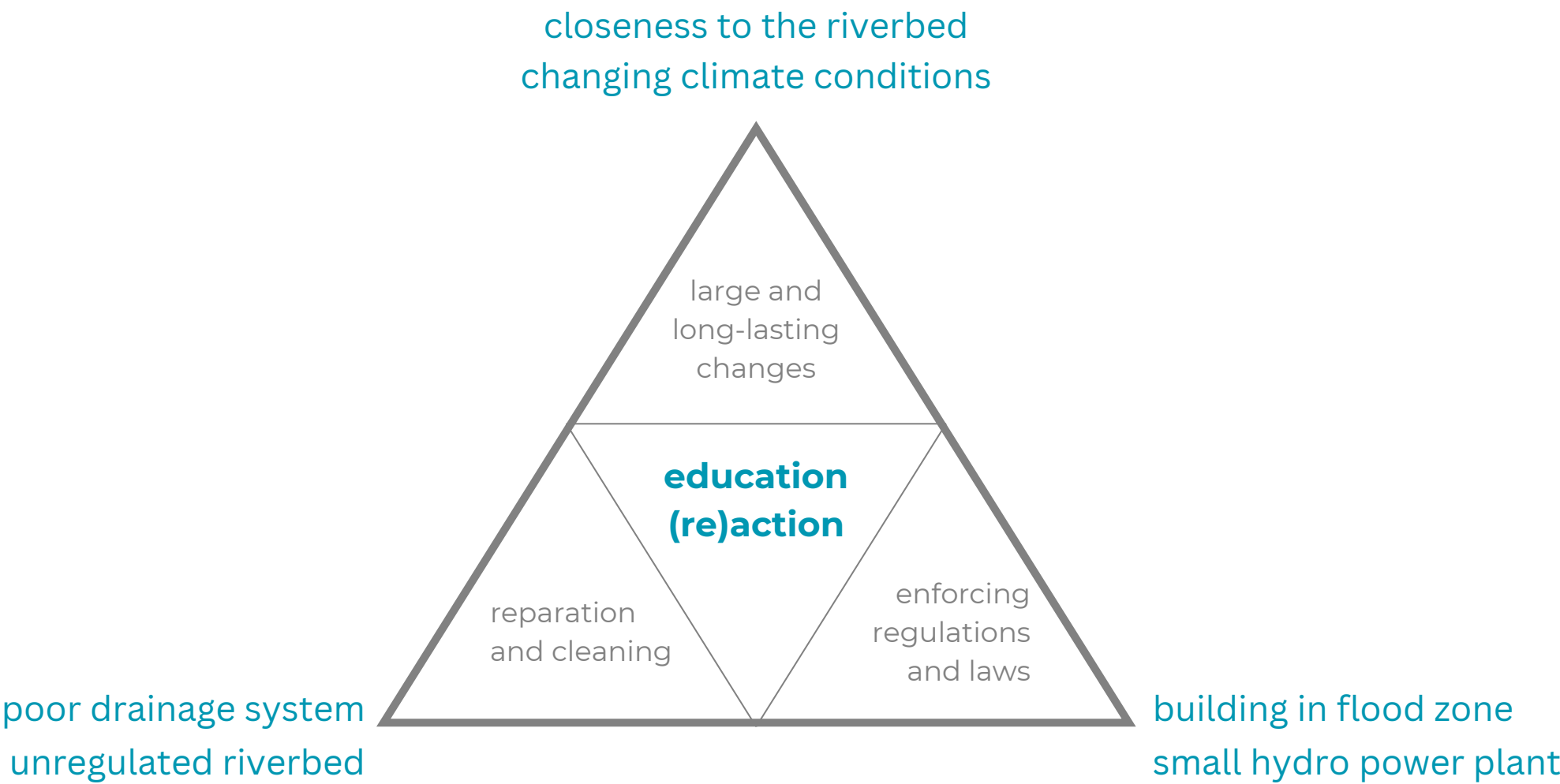


Undrinkable water;



Flooded infrastructure;

THE PROBLEM, THE SOLUTION



PROBLEM STATEMENT

Define the problem

FEAR

CONCEPT

River is not our enemy, it is our friend.

- _application with simulations and warnings based on meteorological and historical database and user input;
- _game for engaging children;
- _examples of where, when and how it could be applied;
- _simplified version for both kids and adults, understanding laws, protocols, measurements and taking action;

WHAT :

Observing these three words (**education**, **(re)action** and **fear**), connecting them, the only kind of technological solution is an app in form of a game. By playing games, we learn, we take actions and get familiar with main characters.

WHO :

Our target audience are children between ages of **10 to 12 years**. To include kids in real time problems, it means to think about taking actions in the **future**. The game is created with our **stakeholders** in mind, which allows us to use the elements of their occupation for the game.

WHEN :

Our problem statement tells us about uncertainty and unpredictability of floods. However, with the help of data and research, we can make an assumption about the occurrence of floods in autumn. As such, our game can be played throughout the whole year, preparing for the flood period in autumn.

HOW :

We worked with two **prototypes**, creating best possible scenario of usage for the app. Game will work by solving real time problems for the **river Zeljeznica**, learning protocols along the way, collecting star and having fun.

FLOODING

_ Urban flood risk in Sarajevo

MTIV SUMMER SCHOOL_13/09/2024.

PROTOTYPE 1

01 GAME ENTRANCE



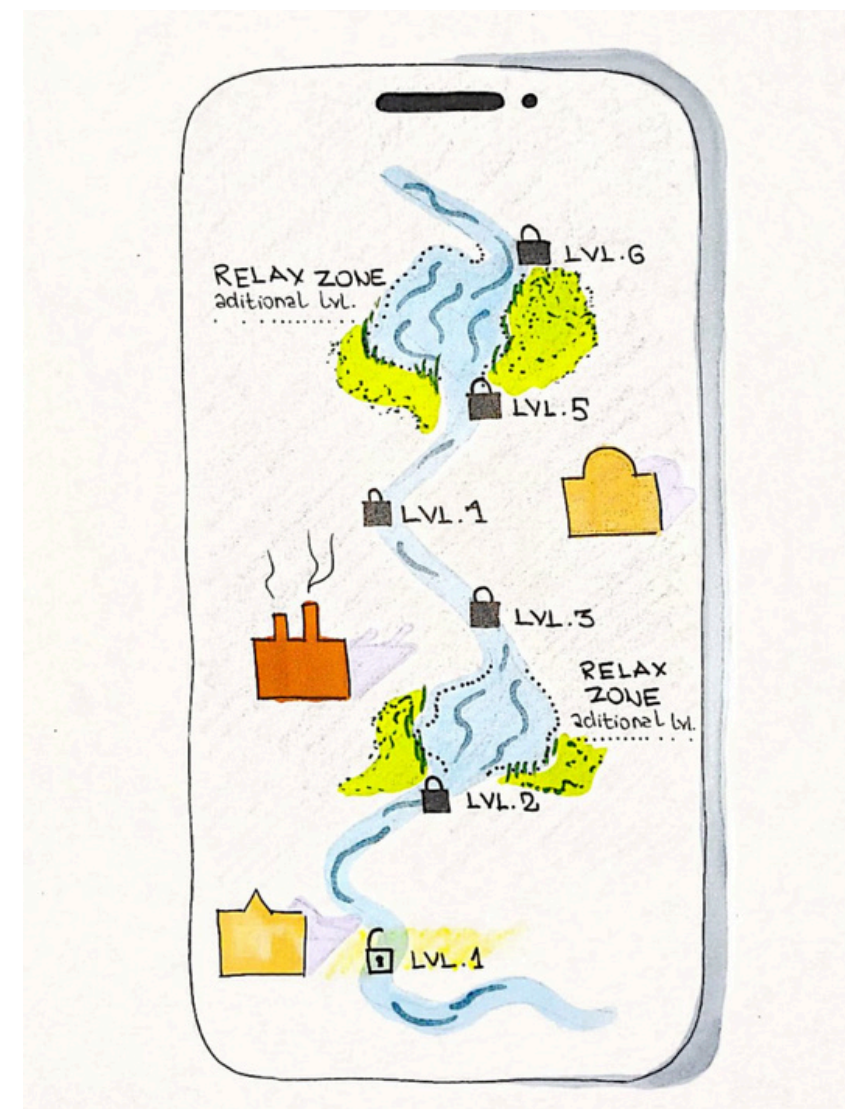
_ **Initial idea** was to start the game from a certain zone, region or a country (which in this case was BiH).

_ **The player** would have an unlocked river within the said region or country and would work their way through each river.

_ **The starting point** could be determined based on the length of the river, the problems it faces or even the urgency and need to raise awareness to a specific river.

_ The player would **start the quest** by clicking on an unlocked river and proceeding to the chosen level.

02 LEVELS OF RIVER ŽELJEZNICA

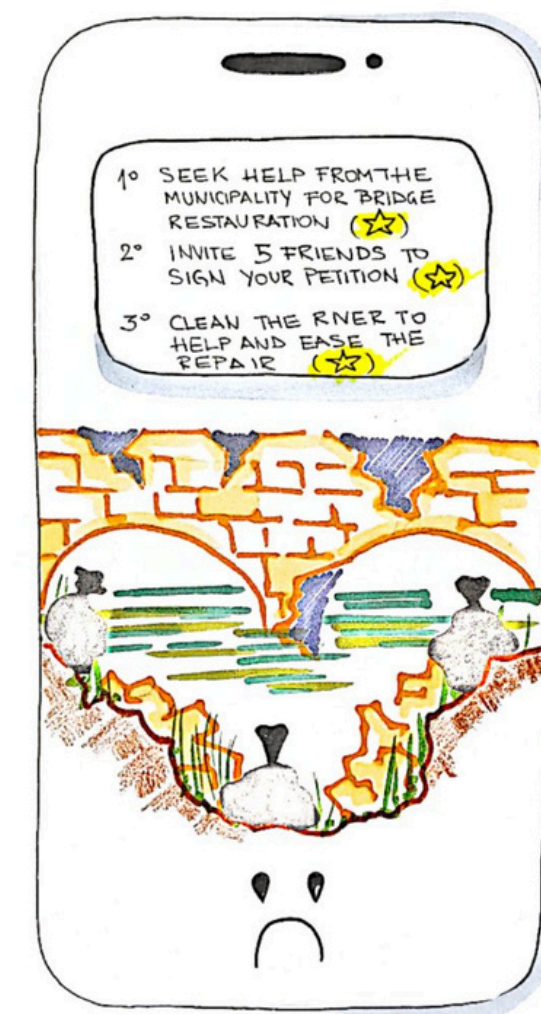


_ **Each level** of a certain river would present a **different problem** the river faces.

_ **The 2D** map of the river would show the locked and unlocked levels and additional places that players would be required to visit during the game, such as: **municipality building, industrial or residential buildings...**

_ The map would also have additional relaxing levels that the players could use and where they would be able to use the river's potential and maximize it.

03 SOLVING THE LEVEL'S QUESTS



_ In order **to solve the problem** the player would be expected to **complete tasks** in order to collect stars. The stars would then be used to fix the problem at hand.

_ The tasks would be related to **simplified versions of the laws and regulations** - so that the game is also useful in real life.

_ Other tasks would be related to **inviting friends to join** the player on the quest of cleaning the river.

_ And the last task would be related to the **fun game** consisted of actually doing the required work **by tapping the screen**.

_ **The type of work required would be different in regards to different levels.**

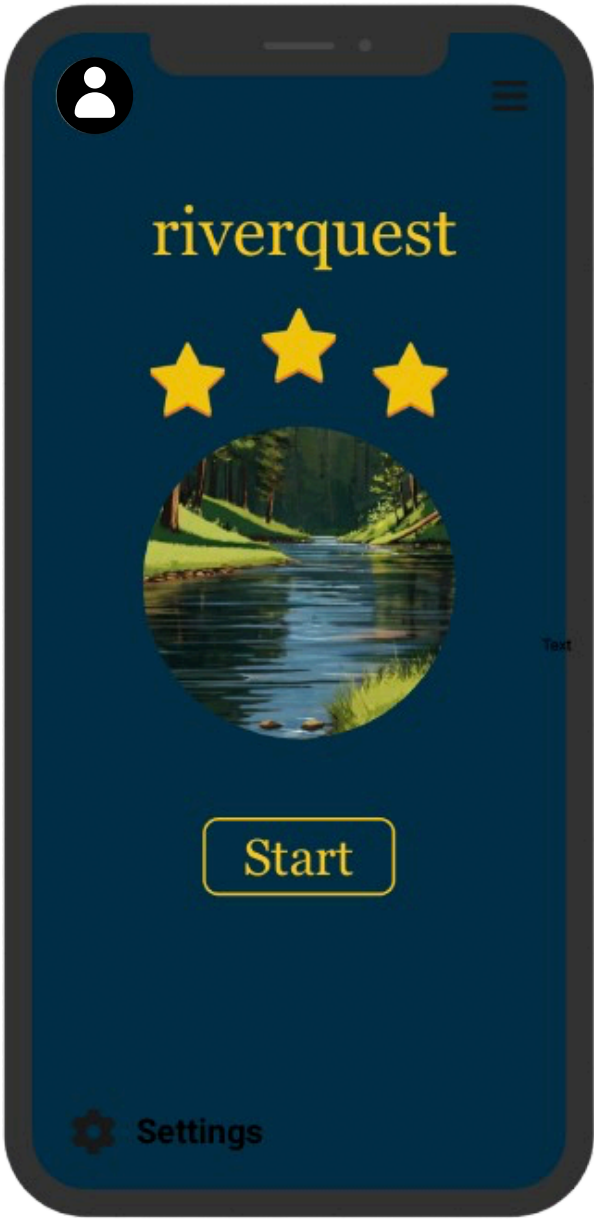
04 FINISHING THE LEVEL



_ **After solving the problem** the river would become happier, life - plants and animals would come back to the river and the satisfied player could move on to the next of many fun levels.

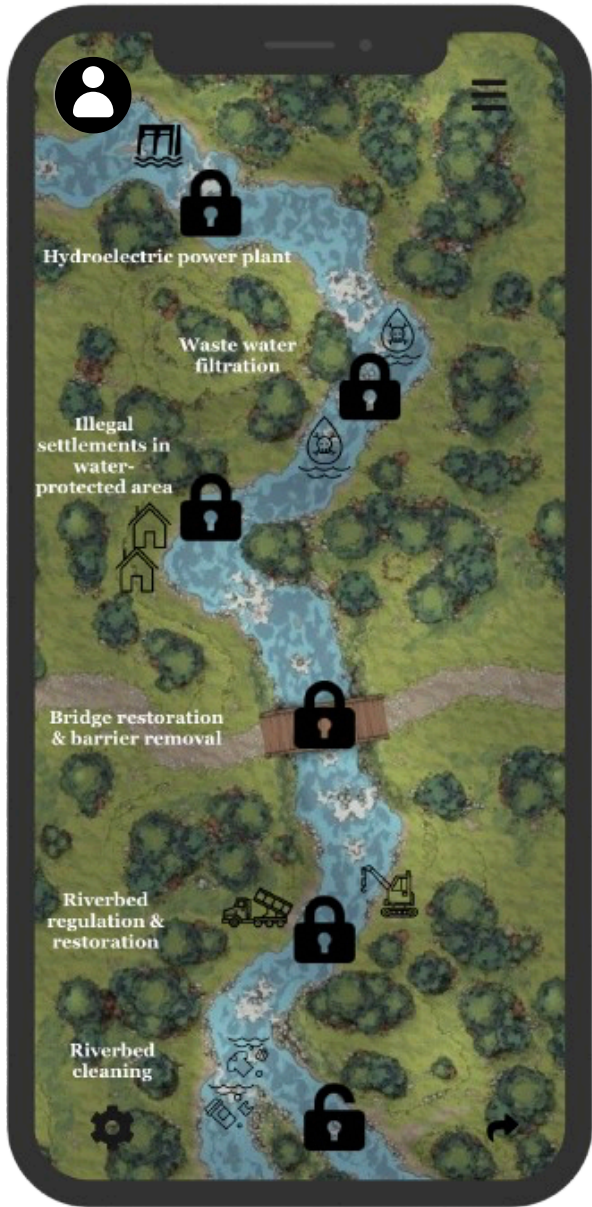
PROTOTYPE 2

01 USER INTERFACE



For Prototype 2, significant changes were made to the app's design and user interface. The initial focus was shifted to the Zeljeznica River, which now serves as the starting point. Players will advance through increasingly larger rivers as they progress, rather than selecting rivers from a map. To initiate gameplay, players will click on an unlocked river and proceed to the designated level.

02 MAP OF RIVER ZELJEZNICA



Each level within a given river will address a distinct issue that river is facing. The river map will display both locked and unlocked levels, accompanied by brief descriptions of the challenges that will be encountered in the locked levels.

While Prototype 2 does not include additional relaxing levels where players could utilize and maximize the river's potential, this feature is planned for future implementation.

03 FIRST QUEST

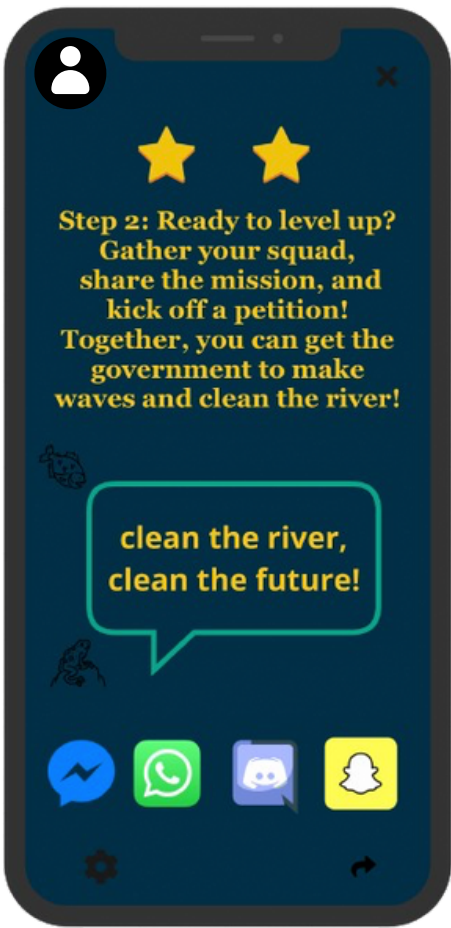


To address each problem, players will be required to complete various tasks to earn stars. These stars are then utilized to resolve the specific issue at hand.

In the initial phase, players must "team up" with local NGOs and the municipality responsible for the river's condition. This involves receiving information about the key stakeholders responsible for the river and details about local NGOs engaged in monitoring its condition.

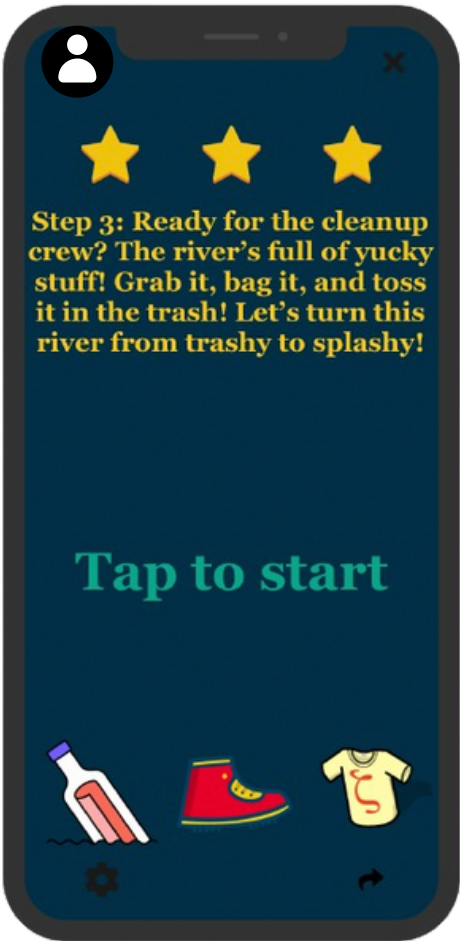
PROTOTYPE 2

04 SECOND QUEST



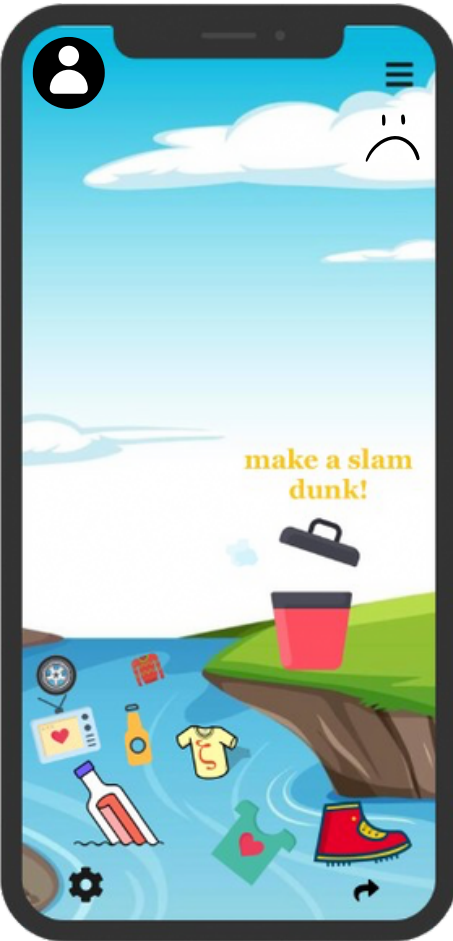
In the second step, players are tasked with sharing their mission and initiating a petition by sharing informations through various platforms to friends and family. This process involves inviting others to join in the effort to clean the river, thereby expanding the player's support network and enhancing the collective impact of the quest.

05 THIRD QUEST



The final task involves a interactive game where players perform the required work by tapping the screen. The specific tasks will vary depending on the level. For the initial level, which focuses on river cleanup, players will drag and drop trash into a trash can. Successfully completing this task allows players to progress to subsequent levels and rivers.

06 THIRD QUEST



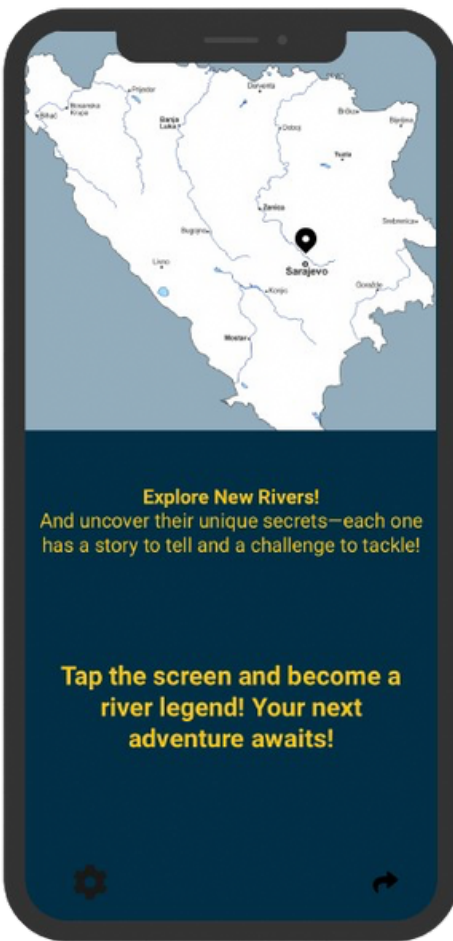
By dragging and dropping trash into the garbage can, the user effectively removes unwanted debris from the river, thereby cleaning the river environment. Successfully completing this task allows the user to progress to the next stage of the game.

07 COMPLETION OF THIRD QUEST



Upon successful completion of the task, local animals return to the river, signaling the restoration of the environment. In this phase, the user is also presented with a unique fact about rivers in Bosnia and Herzegovina, enriching their knowledge. Additionally, by tapping the screen, the user can progress to the next river and engage in new challenges.

08 FUTURE ADVENTURES



Before advancing, the user is shown their current location on the map along with other available rivers. The game progresses in a linear fashion, moving from smaller to larger rivers in Bosnia and Herzegovina, without allowing the user to select a specific river.