



THE CORRUPTION GAME

**EXPERIENCE THE BALKAN'S THIRST
FOR HYDROPOWER DEVELOPMENT**

Master thesis
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O PROJECT ABSTRACT

The River Intellectuals network is an organization that wants to connect academic students to Balkan river conservation. In July 2019 the first Student for River Camp is organized. Students from the Balkan, and the rest of Europe, applied for a week of lectures and activities at the Soča river in Slovenia. It is identified that these students, in varying degree, lack the knowledge of the cultural and political system that drives corruption in hydropower development. To transfer this knowledge, the medium of serious game is chosen, due to its effective, engaging and reusable nature. The aim of this project is therefore to:

Design a serious game that engages the students participating in the Students for Rivers Camp, educate them in the complex system of hydropower development,

| And

Inspire them in using their expertise and ambition for Balkan river conservation.

To achieve this, the problem is investigated first. The culture of corruption is the result of the Balkan's turbulent past, and manifests itself in a combination of bribing, threatening, rule bending and nepotism. The story to tell is that of Government officials and Hydropower companies enriching each other, over the backs of the local communities. The banks who invest in the hydropower projects don't know, or don't want to know about this. Activists try to stop hydropower development by activating the local community.

The corruption game uses a combination of game mechanics to simulate this story. There are several characters to play, each

with different and conflicting goals and rules. Some want to develop hydropower dams, others try to prevent that. A stack of event cards guide the players through the game. The game is finished with a group evaluation, and individual assignment.

The corruption game has been successfully tested at the Students for River Camp. 42 students and lectures played it as part of the program. It has been evaluated positively in achieving its goal. The game have been referenced multiple times throughout the week by lecturers, students and organisation alike.

Plans have been made to develop the project further, doing a final iteration. The ambition is to spread the Corruption Game to NGO's worldwide.

1 DESIGN BRIEF



Figure 1: Balkan River Defence slogan on a kayak. Picture taken during field research in Romania

1.1 PROJECT CONTEXT



The last of Europe's free-flowing and pristine rivers are located in the Balkan.



Currently there are plans to develop over 3000 new hydropower dams.



This means the permanent destruction of nature, and severely decreases the quality of life for local communities.



The system is corrupt, and the money that is made only goes to a few people. Their motive isn't sustainable energy, it is money.

Figure 2 to 9: Story elements of the project context.
From left to rights: the Vjosa river, a map of planned
hydropower dams, a hydropower dam under
construction, Balkan politicians, Rok Rozman, kayakers
during Balkan River Tour 2, the poster of Balkan River
Tour 4 and the Poster of the Students for River Camp.



Rok, a kayaker from Slovenia, decides to paddle from his home river to Albania, generating attention for the problem.



The tour becomes a yearly event. Each year more paddlers join, from all over the world.



Four tours later the Students for River camp is added to the program, where students are encouraged to use their expertise in the field of river conservation



The students come from all over Europe, but lack the necessary knowledge about the complex cultural and political system that drives the hydropower development.

1.2 TARGET GROUP

The Student for Rivers Camp is a week of lectures, workshops and activities related to river conservation, that takes place in July 2019, at the banks of the soča river in Slovenia. It is organised by the River Intellectuals network, and the Balkan River Defence organisation (Appendix U). Participants are students doing their Bachelors, Masters or PhD. Half of these students is from the Balkan, the other half from the rest of Europe. It is suspected that the students lack, in varying degree, knowledge about the political and cultural system that drives hydropower development. To illustrate, one of these students wrote in her letter of motivation:

'What I feel is hindering the discourse on dam construction, is a missing structured dialogue and decision-making process,

which incorporates all relevant perspectives at a metaphoric 'one table' and enables stakeholders to learn from each other's knowledge and perspective'

*Participant,
Students for River Camp*

She is spot on. The problem is however, that for the people that make the decisions, some perspectives are a lot more relevant than others. They are rarely interested the knowledge and perspective of others, only those of themselves. That is the knowledge of the political and cultural system that is missing, and needs to be educated.



STUDENTS FOR RIVERS CAMP

PUT YOUR KNOWLEDGE TO ACTION

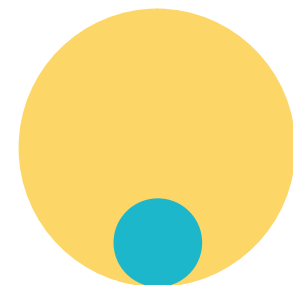
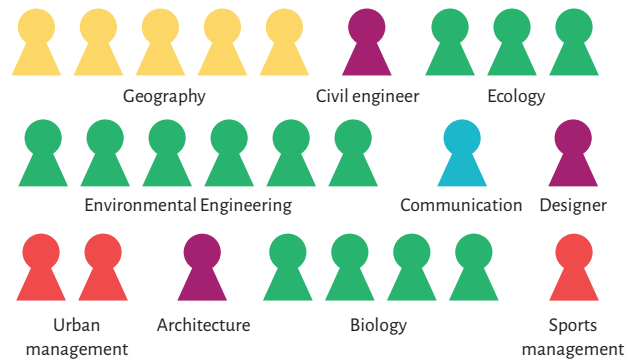
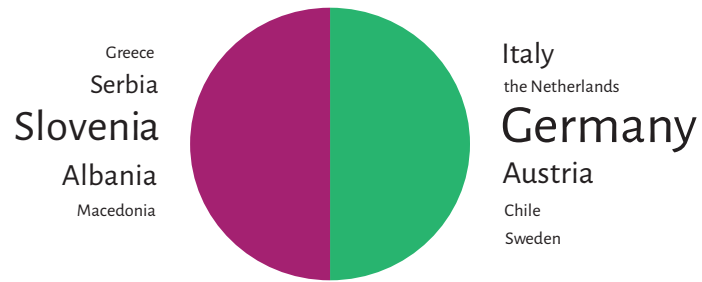
Expert lectures | Workshops | Overnight river experience
For Bachelor, Master or PhD students (or recently finished)
All fields of study welcome!

7th — 13th July 2019
Slovenia / Kamp Koren / Soča River

Application deadline ————— 1st May 2019
More information on ————— balkanriverdefence.org/src



Figure 10: Poster of the Students for Rivers Camp 2019



4 out of 37
Participants mentioned
corruption in any way

Figure 11: Target group statistics



Figure 12: Collage targetgroup

The Students are observed and interviewed (Appendix D and E), and their letters of motivation analyzed (Appendix C). The target group is defined as idealistic, activist, proactive and

motivated. They have a thirst for knowledge, want to connect with likeminded people, feel a strong connection to nature, and have a love for outdoor activities.

1.3 TRANSFER EFFECT

The choice is made to develop a serious game, because of its engaging, effective and reusable nature. It is a safe way to experience complex topics for a wider audience (Appendix A and B).

The desired transfer effect (Siriaraya et al, 2018) of the game is stated as:

Within the domain of nature conservation, the game aims to create an attitudinal change (educate) towards the political system that drives hydropower development. The effect is measured on a short term after gameplay (30 minutes, during evaluation session).

Secondary, the game aims to:

reinforce the attitudinal change (inspire) towards the use of the players expertise in river conservation. The effect is measured on a long term after gameplay (5 days, at the end of the Students for Rivers Camp).

The attitudinal change consists of:

Primarily:

An increased knowledge of stakeholders and motives

An increased Knowledge of corruptive elements of the cultural and political system

Secondary:

Inspiration in potential solutions

An increased motivation in using the players own expertise in river conservation.

INTERACTION VISION 1.4

The players should experience corruption rather than be informed about it. Like the real situation, the gameplay should be explicitly unfair. The consequences of actions should be in your (or somebody else's) face. The game should target the players emotions. They should feel content, proud, angry or scared. They should be raising their voice and whispering in secret. It does not have to be fun all the time.



Figure 13: Interaction Vision

1.5 GAME REQUIREMENTS

The requirements are derived from the desired transfer effect, the characteristics of the target group, the vision of the Balkan River Defense organization, and the goals of the River Intellectuals organization (Appendix U).

All concepts and prototypes are evaluated on these requirements.

1. The game should be

Engaging

2. The game should be playable

in the Field

3. People from different

Cultures

Should be able to play

4. The game should fit the

Attitude

and style of Balkan River Defence

5. The game should

Inspire

*players to use their expertise
for river conservation*

6. The game should evoke

Discussion



Figure 14: One of the prototypes being tested in Romania

2 THE PROBLEM

Corruption is always undesired. But why is it that even more the case regarding hydropower development? Where does this Balkan culture of corruption originate, and why are these dams so bad? Who are involved?

It should be mentioned that, for the feasibility of the project, the conclusion are drawn from a generalization of the Balkan as a whole. Some arguments might be stronger, weaker or even absent, compared between the countries, provinces or even ethnicities. The countries differ, but the core of the problem is the same.

Methods

To answer these questions, literature and reports from Riverwatch, Euronatur, Bankwatch and the European Union are reviewed, as well as several books and documentaries about Balkan history.

Furthermore several experts are interviewed, most importantly: the founder of Balkan River Defense, Rok Rozman, and investigative journalist on this subject, Pippa Gallop (Appendix D).

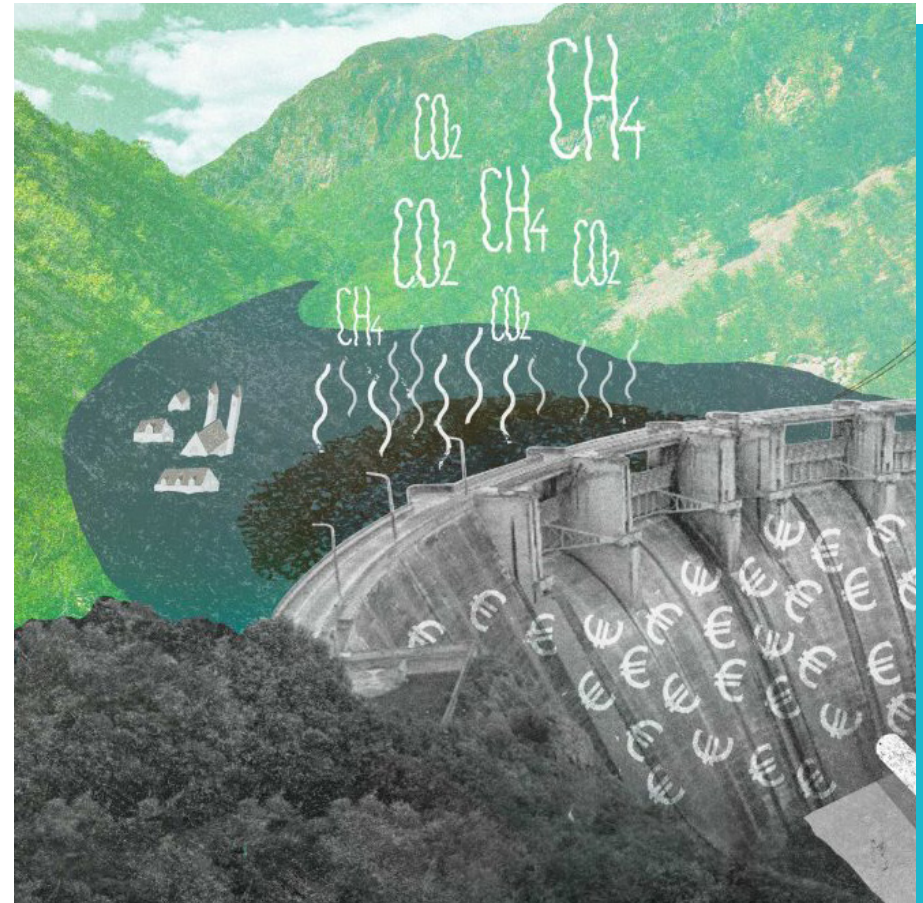


Figure 14: The problem illustrated: destruction of villages, dead lakes and corrupt dams

2.1 WHY ARE THESE RIVERS BEING DEVELOPED?

Potential

Because of the Balkan's history, compared to western-Europe the countries of the balkan are relatively underdeveloped (DPAD, 2014). And because of the high amounts of altimeters of the mountainous landscape, There is a lot of potential for hydropower development.

European Union

Slovenia and Croatia are members of the European Union, all the other countries are either Candidate-members or potential candidate-members. All have expressed their wishes to join the European union. The political and economical stability that a membership provides, opens the door for foreign long-term investments in the Balkans. Also, several European Union Investment funds are now available for the countries.

Green energy

Because of global warming, renewable energy is becoming increasingly important and valuable. All the nations of the European Union have expressed their wishes to reduce co2 emission under the Paris agreement (United nations, 2015). The European Union actively subsidises initiatives that reduces co2 emission, like wind mills, solar power and hydropower. The Balkan region has a big potential in the generation of these renewable sources of energy.

BALKAN HISTORY

The History of the Balkans are complex. The area is the crossroad between Europe, Russia and the East, and therefore historically of great strategic importance. Balkan states have mostly been dependent areas who's fate is determined directly or indirectly by these great powers. The Balkans were invaded by the Romans, and later the Ottomans, to be followed by Austrians, Russians, and British, and in more recent times, by Germans, Italians, Frenchmen and finally by Americans. The long history of suppression and strife has left a bitter legacy of mutual animosity and distrust between nations and between peoples. Often overemphasis of local cultural and political differences had triumphed over more sensible movements of cooperation and mutual aid in the face of common problems. In every Balkan state the local population has developed an attitude of distrust toward authority and of indifference toward the concept of civil responsibility. (Jelavich, 1983)

From the aftermath of world war 2, the authoritarian rule of communist dictator Josep Broz Tito kept the country of Yugoslavia together by repressing local culture and political differences. Following his death in 1980, the economy collapsed, and both unemployment and inflation increased. The economic crisis led to a rise in ethnic nationalism resulting in the Yugoslav wars. A series of separate, but related ethnic conflicts, wars of independence and insurgencies. Fought from 1991 (R. Craig Nation, 2004; BBC, 1995). This conflict left the peninsula in ashes.



Figure 15: One of the building sites visited during field research in Romania

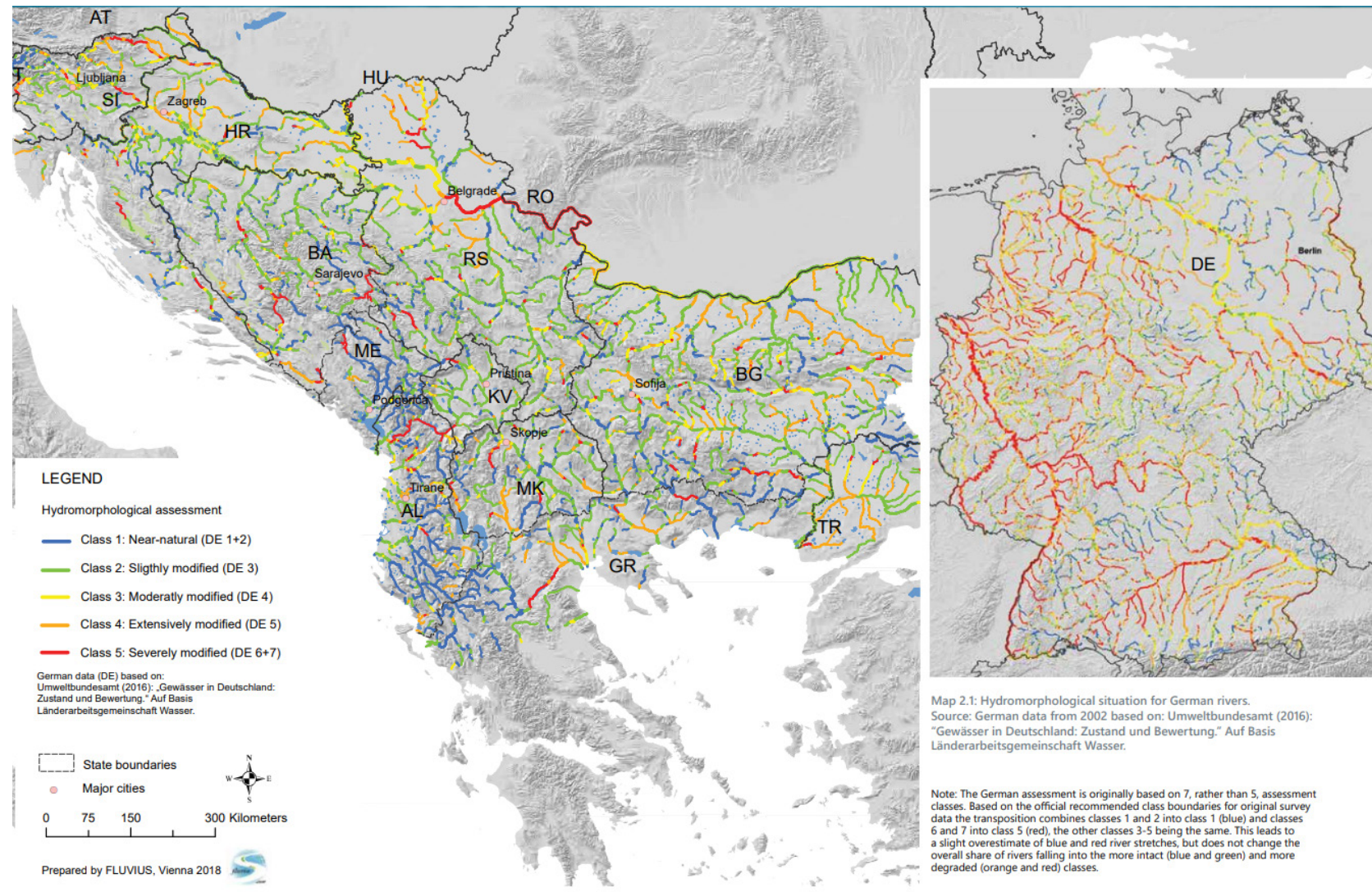


Figure 16: Hydromorphical state of European rivers: the Balkans compared to Germany

AND WHY SHOULD WE SAVE THEM? 2.2

Biodiversity

Although freshwater systems support some of the richest biodiversity on the planet, they are highly threatened all over the world. Since the early 1970's, at least 81% of our planet's freshwater ecosystem populations have been lost (WWF living planet index, 2016). If hydropower dams were to be built in the Balkans, it would have a significant and irreversible impact on freshwater biodiversity in the region (Freyhof 2012, Weiss et al. 2018). Approximately 40% of the proposals are planned within protected areas, including national parks and Natura 2000 sites (Riverwatch, eco-masterplan, 2018). The European Union has committed to halt the biodiversity loss and ecosystem degradation by 2020 (the EU biodiversity strategy to 2020, 2011). Building hydropower plants will move Europe farther away from meeting these legally binding objectives.

Habitat

The people who live in the valleys, have lived there for generations. The homes, memories, culture and history of the local communities will be destroyed, and there is no going back. A lot of locals are dependent on the river for work, working in tourism, agriculture or as fishermen. Although companies promise otherwise, hydropower development rarely brings new jobs.

The last of Europe

These rivers are the last free flowing rivers of Europe. Most of the countries in Europe destroyed theirs, a long time ago. In Germany almost every river is severely altered compared to the Balkans (figure 16). If we destroy these last Balkan rivers, there is no going back. Interestingly enough, these western European countries are recently starting to reverse the process, destroying

old dams to create healthier rivers again.

Alternatives

Other renewable energy sources than hydropower, namely wind, solar and biomass, provide a huge electrical potential. Near twice as high as the current electricity demand of the seven countries. Non-hydro technologies have seen a tremendous and partly even unexpected cost reduction in the past few years and have already achieved or will probably achieve soon cost competitiveness with hydropower (Neubarth, 2018).

2.3 WHAT IS THE CULTURAL AND POLITICAL SYSTEM THAT DRIVES HYDROPOWER DEVELOPMENT?

Human greed

The answer to this whole question can be summarized by one word: Greed. As one of the seven sins, human greed is the big driver behind hydropower development. A lot of people in charge of the Balkans, have a never-ending thirst for power, status and wealth.

Corruption

There is a widespread perception of massive corruption in South East Europe (Bankwatch, 2014). For the different countries in-between 65 percent (Bosnia) and 82 percent (Serbia) of the respondents rated the judiciary of their own country 'corrupt or extremely corrupt' (Transparency International, 2013).

Nepotism

Almost every company that has something to do with hydropower, or any form of power in general, is owned by a

select number of wealthy and powerful people (Bankwatch, 2012). These people make sure to put their own family and friend in powerful positions, both corporate and political. Since the fall of communism, the same small community of people has remained in power, and profit from the ordinary citizens.

Freedom of press

Some countries score better than other. But on a general term is the state heavily pressuring the media. Many Balkan media companies depend on direct or indirect government favour in the form of advertising revenue or subsidies (Bankwatch, 2014). The countries are ranked in-between 123th (Macedonia) an 54th (Serbia) in the world for Press freedom (Reporters without borders 2014). Freedom of press is one of the requirements to become full member of the European Union.



Figure 17: The brave women of Kruščica, blocking the bridge to the entrance of the construction site of a local hydropower dam, before they have been removed by force.

Intimidation and violence

There is a vast amount of cases known of intimidation and violence. From police showing up without notice (during

field research in Romania), to severe beatings of journalists and during protests. The brave women of Kruščica being the most well-known example.

Lack of public information

Hydropower companies and investors, do not inform the public about future development. The people of the villages affected by dams are often completely surprised by construction, and often do not have the time to organize any way of coordinated protest or obstruction

National Subsidies

The government guarantees a set price of the electricity produced. Without these guarantees many small hydropower dams would not be viable (IRENA, 2018). It should be no surprise that often the politicians that are responsible for this legislation, are connected to the owners of the power companies.

European investments

The European Bank for Reconstruction and Development, the European Investment Bank, and the World Bank Group have extended loans and guarantees totalling EUR 727 million to no fewer than 82 hydropower plants. (Bankwatch, 2018). Several Austrian, Italian, Chinese and Turkish banks are investing as well, but since they are not required to open their books, the size and number of their investments is unclear.

COMMUNIST HERITAGE

Living under Communist rule for centuries left its scars. The people of the Balkan are afraid to stand up for themselves. They don't know any better, than being taken advantage of. The old communists are supposed to be gone, but exactly the same people are in power today.

These poor fuckers don't know what its like to stand up for themselves. They grew up in a communist country. If you were a problem back then, you got shot. It's as simple as that.

Rok Rozman, Founder BRD

The communist ideal of a strong and self-sufficient country is still alive in the Balkans. The production of electricity is one of the core responsibilities of the state. The price of electricity is forcibly being kept low, and heavily subsidized. Every government since communism postpones the necessary increases in price, being afraid that It would negatively affect the public opinion.

THE MOST COMMON TYPES OF CORRUPTION IN HYDROPOWER DEVELOPMENT

Payment of bribes

For example: to win concession

Nepotism

Family and friends of politicians winning tenders for concessions

Subsidies

Setting up schemes to favour hydropower rather than other renewables, so that domestic construction companies can benefit most.

Tender criteria

Drawing up tender criteria that favour certain bidders. For example: requiring a certain amount of experience, which only certain companies close to the government have

Rule bending

Changing laws to fit specific projects or types of projects

Environmental impact assessment

They are not required at all, they are approved by non-qualified experts, or they are being bought.

Lack of monitoring

Unwillingness to push fines in case of violations of environmental or construction conditions

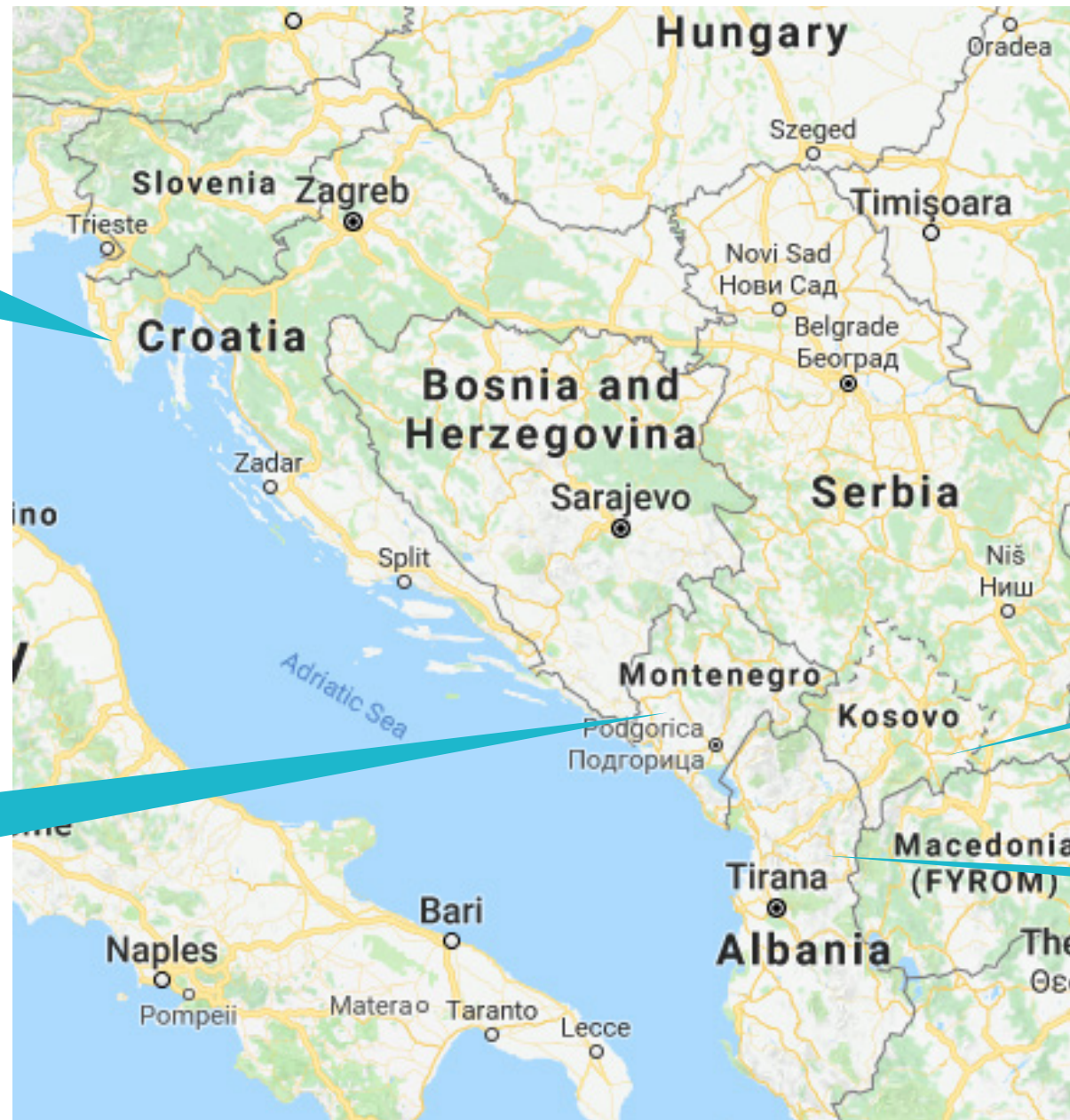
2.4 CASE STUDIES

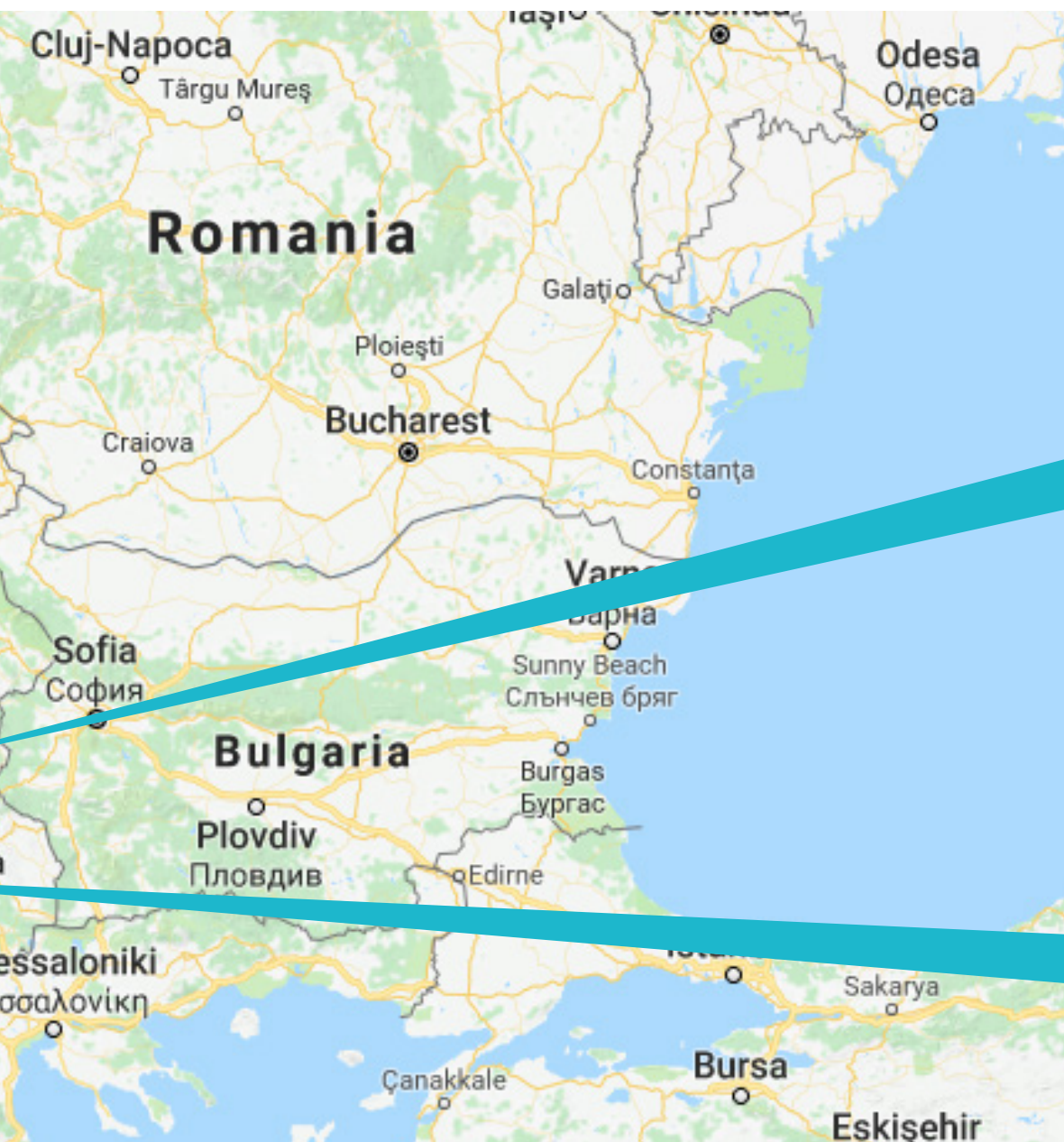
Croatia: The INA – MOL affair

A Croatian case is INA-MOL, in which the court convicted then-Prime Minister Sanader for taking EUR 10 million in bribes from the Hungarian oil company MOL, in order to give MOL a dominant position in the Croatian oil company, INA. The state prosecutor has also indicted MOL group chairman Zsolt Hernádi, who has denied wrongdoing; Hungary has refused extradition.

Montenegro : The KAP electricity theft affair

Between March and May 2013 the Montenegrin government allowed the Podgorica Aluminium Factory (KAP) to steal power from the European Energy Interconnection System after the Montenegrin electricity company cut them off for non-payment. The European Network of Transmission System Operators for Electricity (ENTSOE) ordered Montenegro to return the stolen electricity or risk being excluded from the European network. The government agreed to do so, but the cost is being passed to taxpayers through the state budget and consumers through increased electricity bills.





Kosovo: The UNMIK/KEK affair

A German court convicted Jo Trutschler, manager of the Kosovo Energy Corporation (KEK) on behalf of UNMIK, of breach of trust and misusing an academic title and sentenced him to three years in prison. From 2000–2002 it was discovered that he had acquired about USD 4.3 million (then around EUR 3.7 million) and transferred the sum to fake companies in Gibraltar. UN investigators discovered that in addition Trutschler had falsified his diploma and claimed greater experience in management than he really had. Most of the money was recovered.

Albania: The money laundering investigation

The case of Argita Berisha is about the purchase of land in Albania not long before the government chose it as the site of an energy project, thus raising its value; the buyer's attorney was the daughter of then-Prime Minister Sali Berisha, while the administrator of the buyer's local firms was the brother-in-law of then-Minister of Transportation Lulzim Basha.

Figure 18: Case studies of corruption and nepotism in the Balkan (Bankwatch, 2012)

3 THE STORY

To explain the complexity of the culture of corruption and nepotism, there are several stories that should be told. There are different stakeholders, all with different motives, knowledge and resources. To recreate a complete view of the system, all perspectives should be represented in the game.

Method

Methodology is chosen with the use of the Cookbook method (Siriara et al, 2018). The characters are derived from the stakeholder map, and their stories from observations and interviews with both experts and locals (Appendix D and E). Design for Emotion methodology (Desmet, 2019) is used to deepen the level of storytelling

(Appendix H). The separate stories are combined into a cohesive story with the use of the Story Element Cards (Appendix G).

These are not the whole stories, these are an interpretation and simplification, to make them useable in game. Nevertheless they are based on the truth.

A complete list of story elements can be found in the Appendix (Appendix Q)



Figure 19: Collage of activities during field research in Romania: Cleanup, Protesting, Talks with the local Mayor and Kayaking

3.1 STORIES STAKEHOLDERS



Local Community

The main protagonists of the story. They struggle to put food on the table, and are highly dependent on jobs provided by the government or companies. The villages they lived in for centuries are being flooded, destroying the homes their great-grandparents built, losing their cultural heritage. They don't know what is about to happen, and nobody is telling them. If they get compensated, the compensation is meagre.



Hydropower Company

The hydropower companies are motivated by greed. They always want more. They don't care for anybody but themselves. Together with the government, they have been in power for years, and are not planning to lose it.



Balkan River Defence

The life of an activist is a struggle. Balkan river defence is trying their best, but often lack the resources. The key of river conservation is activating the local communities to stand up for themselves.

Figures 20 to 25: Story Stakeholders



Environmental Expert

Part of the local community. Often being put under pressure to assess the impact of hydropower development in a way that benefits the hydropower companies. They are dependent on the money provided by these companies, and risk losing business or their job.



Investment Bank

The investment bank's main motivation is success. They want to develop as many projects as quickly as possible. In some cases they simply don't know about the negative impact, in other cases they just don't care.



Government

The government and the companies are working together. The government wants what the company wants, but they don't want to do it too public. The Government still needs to make sure he/she gets re-elected.

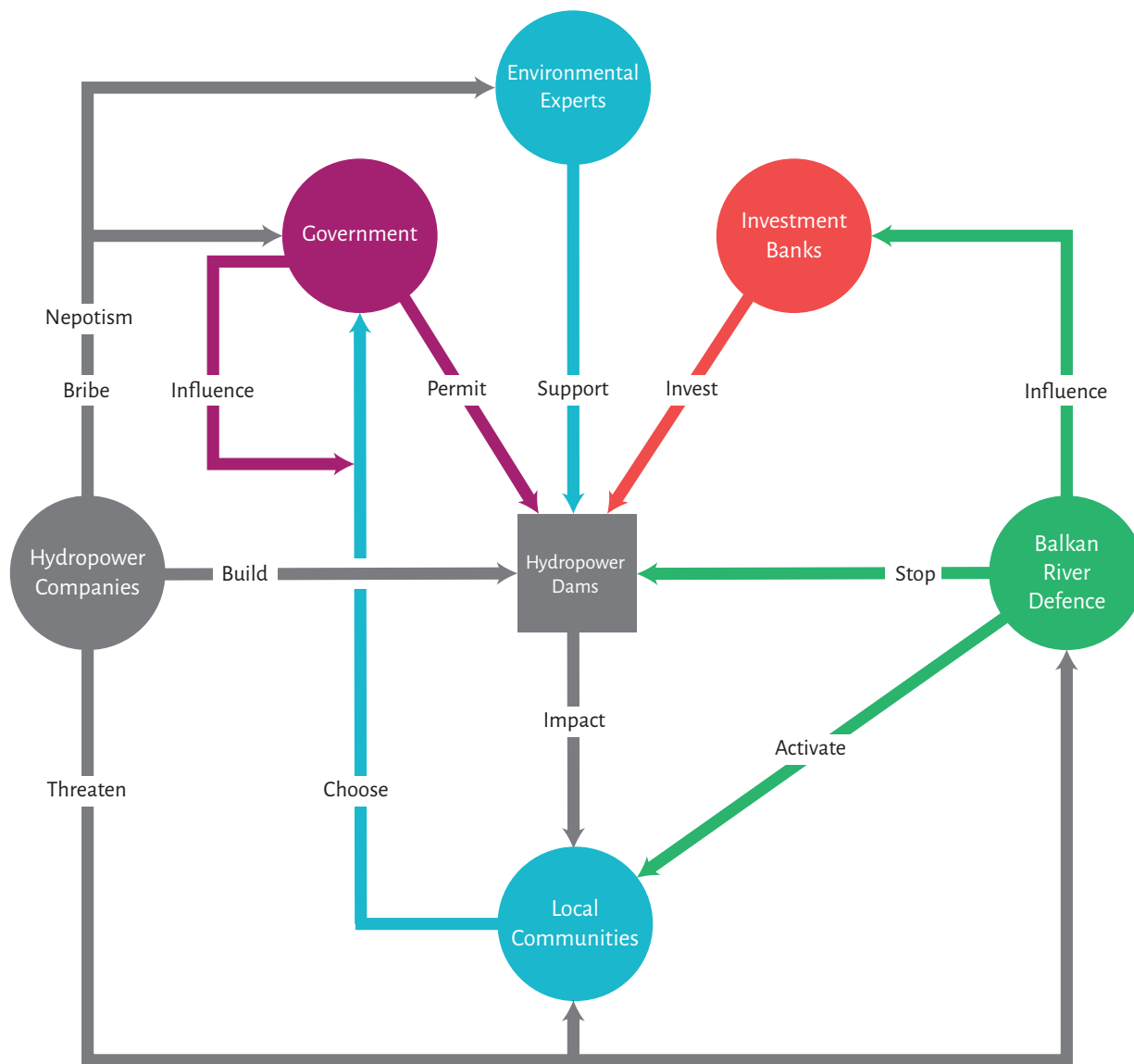


Figure 26: Simplified stakeholdermap with a focus on interactions. The complete process of stakeholdermap abstraction can be found in the Appendix (Appendix O)

Struggling
Unknowing
Reluctant



**LOCAL
COMMUNITY**

Struggle to survive
Feel the impact of the
hydropower dam
Being threatened
Being bribed by:
Hydropower company
(and *Government*)
Choose:
Government

Greedy
Proud
Powerful



**HYDROPOWER
COMPANY**

Build hydropower
dams
Nepotism with:
Government
Bribing and
Threatening:
Local community,
Balkan River Defence,
and Environmental
Expert

Powerless
Idealistic



**BALKAN RIVER
DEFENCE**

Stop hydropower dams
Being threatened by:
Company (and
Government)
Activate:
Local community and
environmental expert
Influence: *Investment*
banks

Struggling
Pressured



**ENVIRONMENTAL
EXPERT**

Struggle to survive
Feel the impact of the
hydropower dam
being Bribed or
Threatened by:
Company (and
Government)
Being activated by:
Balkan River Defence

Distant
Desiring



**INVESTMENT
BANK**

Be successful
Invest in hydropower
being influenced by:
Balkan River Defence

Two-faced
Proud
Powerful



**THE
GOVERNMENT**

Shares goals with:
Hydropower company
Give permits for
hydropower
Chosen by:
Local community

3.2 STORYBOARD GAMEPLAY

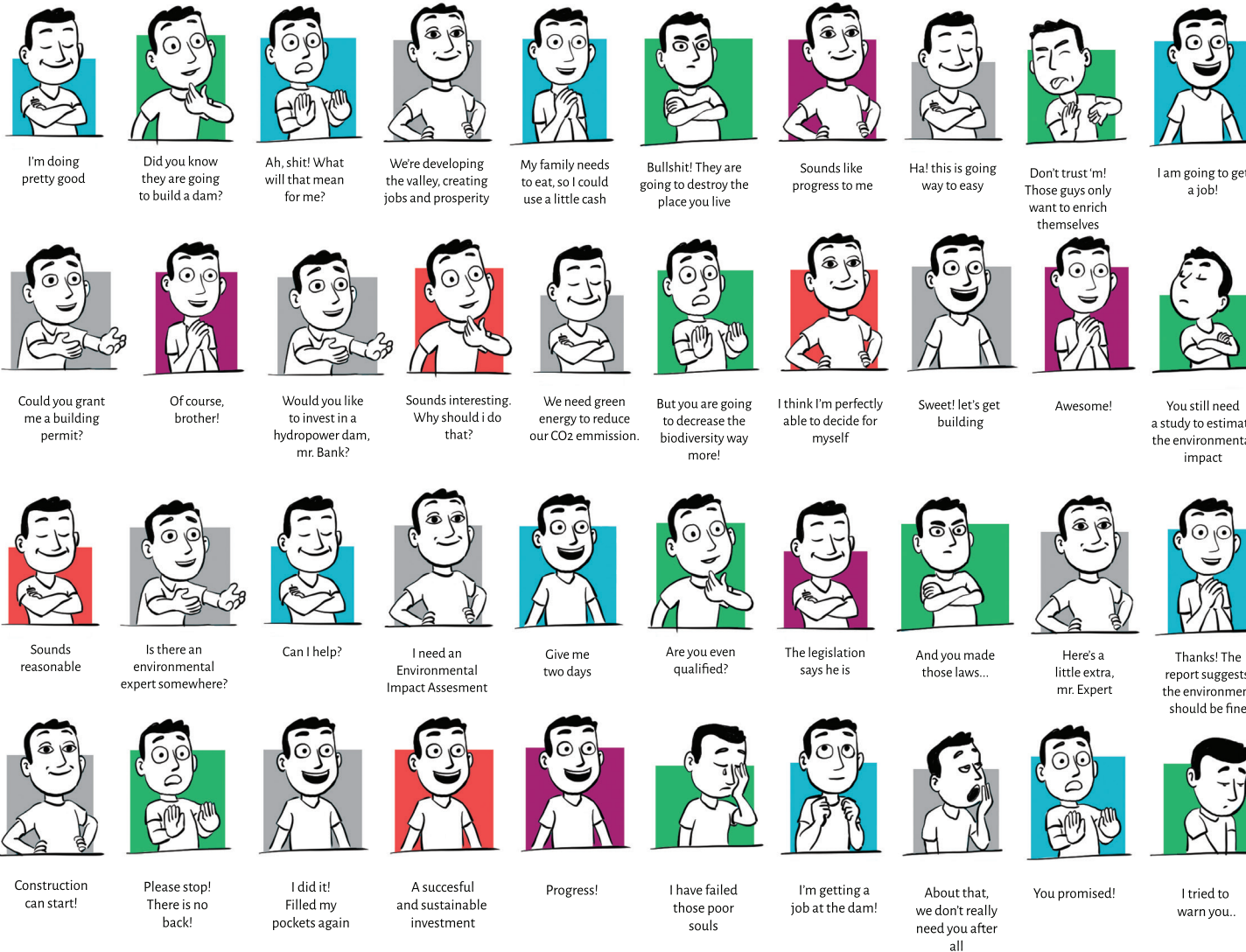
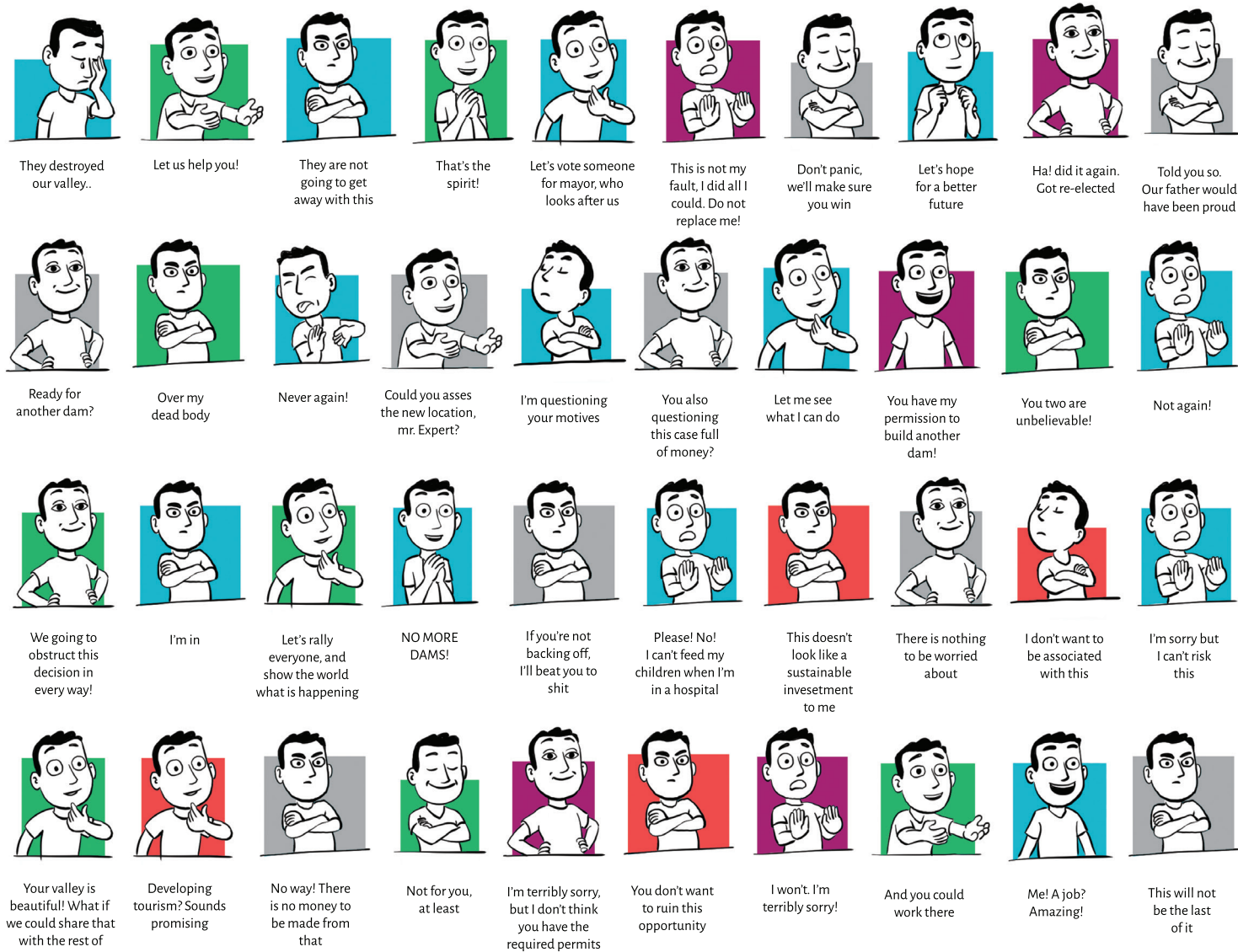


Figure 27: Storyboard of Gameplay. Character specific storyboards can be found in the appendix (Appendix M)



3.3 KEY ELEMENTS STORY

The game should definitely include these story elements:

Bribing

The Hydropower Company has the ability to bribe other players.

Nepotism

The hydropower Company and Mayor are benefitting from eachother.

Rulebending

Legislation is to be manipulated. Rules are there to be interpreted in whichever way benefits the Mayor

Threatening

The Hydropower Company and Mayor have the ability to threaten other players.

Unknowing

The Local Community does not know what is happening, they are being kept in the dark.

Powerless

The Activist is powerless without the support of the Local Community

Consequences

Only the Local Community needs to live with the consequences of hydropower development.



Picture 28; The local community of the Basca Mare valley. Photographed during field research in Romania

4 GAME MECHANICS

Having defined the Story, the next challenge is to find the right set of game mechanics to tell this story.

Method

The transfer effect, requirements and vision are used as a starting point in the search for the right game mechanics. The brainstorm cards (appendix J) and existing games (appendix L) provided examples to begin experiment with. By trial and error with different prototypes and user tests (appendix I), a set of game mechanics is chosen. With the use of the story element cards (appendix G) the game mechanics were matched to the story elements.

A complete list of story elements matched with game mechanics can be found in the appendix (Appendix Q)

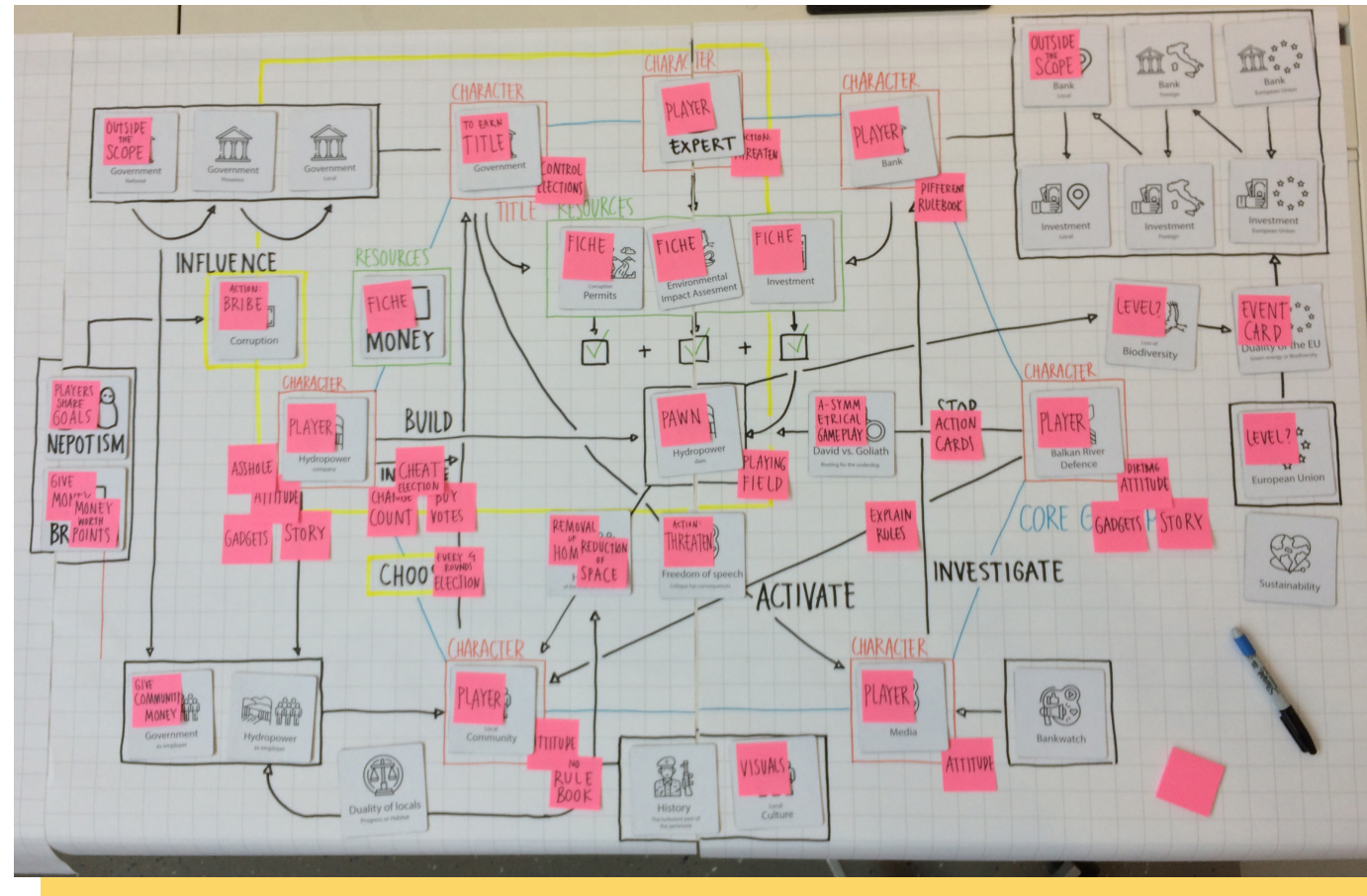


Figure 29: Story Element Cards in use, with game mechanics in pink.

4.1 CHOOSING MECHANICS



Picture 30: trying out different game mechanics with every new prototype.



Picture 31: Writing messages, one of the core gameplay mechanics that did not make it to the final version of the game.

The game is required to be playable in the field, during the Students for River Camp. Therefore the choice is made to develop a physical game. The setting is the valley and the river, and the core gameplay consist of building a dam, or trying to stop the dam from getting built. This means, the playing field is a classic board with a top view river, and all required objects are pawns. To tell the story, it is chosen to re-enact it by playing the game. To simulate all stakeholders, the players get to choose one of six different characters, each with their own win condition, set of rules and appearance. These characters compete or collaborate with each other, in getting the resources to construct a hydropower dam. The consequences of building a dam are known to some, but secret to others. There is a lot of influencing, convincing, threatening and bribing

involved. Different event cards will generate opportunities throughout the game, encouraging a change in attitude and tactics.

Choosing the right Game mechanics is never a linear process. Several prototypes were developed and tested, to come to this point (Appendix I). There are too many choices and even more arguments, and it is never possible to explain everything. Therefore, only the four game defining core-mechanics will be discussed in the following chapters.

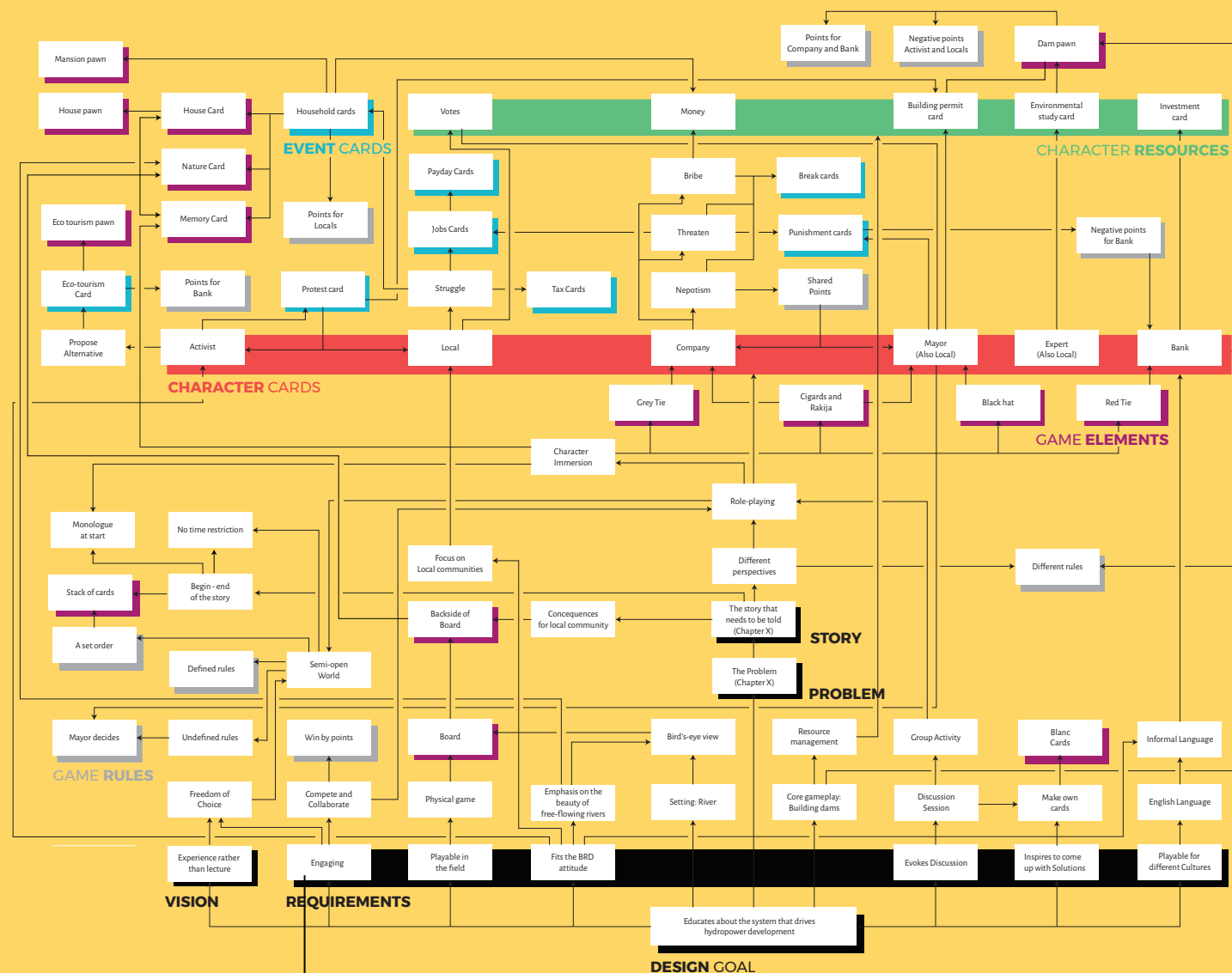


Figure 31: The evolution from design goal and requirements, to game elements and mechanics

						
Character	Local	Activist	Biologist	Bank	Mayor	Company
Win condition	Household	No dams	Household	Successful Investments	Household	Dams
Knowledge of rules		Yes				Yes
Elections	Vote		Vote		Vote	
Resource			Environmental Impact Assessment Study	Investment	Building Permit	
Action	Protest	Protest			Family (Nepotism)	Family (Nepotism)
					Threaten (Fines)	Threaten (Violence)
					Money (Jobs)	Money (Bribe)

Figure 32: Game characters, their traits and resources.

RESOURCE MANAGEMENT 4.2



Figure 33: The protest event card, used by the activist and local to block the building permit

To build a dam several resources are necessary: A permit, study and investment (Figure 34). The permit can be granted by the Mayor character, the study can be granted by the Expert character, and the investment can be granted by the Bank character (Figure 32). The resources are located in the event card deck (figure 33), and are gradually available throughout the course of the game. In which way the characters need to be persuaded to grant these resources, is up to the Company character. The

Company is encouraged to use a combination of threatening, bribing and nepotism. The resources are only valid when signed with the players own autograph, to make the players feel personally responsible for the impact of what their action might cause.

The Activist can block the Mayor giving a Permit, if they find a local willing to protest with them using the 'Protest' event card (Figure 33).



Figure 34: A permit, study and investment

4.3 DIFFERENCE IN RULES



Like the Balkan, is the world of the Corruption Game explicitly unfair. Besides different resources, the characters also have a different set of rules, and different information is available to them. To encourage conflict even more, some rules are contradicting. For example: The rules of the company imply an environmental study is not a necessity, the rules of the activist say it is crucial. When rules are unclear, it is the Mayor, who has the deciding vote. It is the Mayor who is in charge of the valley, and it is him/her who makes the legislation. Multiple 'rules' are deliberately written in a way that they can be interpreted in different ways. Identically to the real situation, the Locals lack any form of information. They don't know what is about to happen. The only way to win the game as an Activist, is to try and guide the Locals, and activating them.

EVENT CARDS 4.4



Figure 36: The event deck

The stack of event cards guide the player through the game. When the first card is picked, the game starts. When the stack is emptied, the game is finished. Players pick the cards with the colors corresponding to their character. There is, however, no time limit, and when to pick a new card

is decided by the players (One example of an unclear rule). The player who picks the card, reads the written text on the back, and performs the possible action, if he or she wants. Some cards need to be played immediately, some can be used whenever the player deems necessary.



Figure 37: Players reading the event cards

MEMORY

For dinner I made a brownie

SWIMMING IN CEMENTA, PLAYING ON COASTS

MEMORY

Jumping in the river during summer heat

MEMORY

Surfing on the river as a child

MEMORY

The moment when I relocated to the river, after working in a city and realized that the water can provide me with everything I need

MEMORY

CATCHING MY FIRST TROUT ON A FLY IN THE CATSKILL MNTS.

MEMORY

Being on a swing over the river

Say this:

'I am the activist, I come here to save this valley from the destruction of hydropower dams. We need to protect the local community, and the wilderness.'

'Put two middle fingers in the air, point them at the company and scream 'no more dams!' (or something similar)

'Catching my first fish, with Grandpa'

Thirdly, several characters get special props to wear, and use. For the Company there is a grey tie to wear, for the Bank a red one. The Mayor has a black high hat to wear. In the course of the game the game leader can (if the setting is right) provide the Company with Rakija (Balkan strong liquor) and cigars. He can share these with whomever, as a part of deal making.

‘In the Balkans two things are crucial when you want to make a deal: Eating lamb and drinking the best Rakija.’

Balkan student



Figure 39: Several props in use during deal making: The mayor's high hat, the Company's grey tie, Rakija and Cigars

5 THE GAME

The corruption game consists of a box with:

3 parts of the playing board

A stack of event cards

9 household cards

6 character cards

6 rule cards

3 dam pawns

3 house pawns

1 mansion pawn

1 eco-tourism pawn

20 euro bills

6 votes

Two pens

1 rulebook

And:

A high hat

A red tie

A grey tie

Two cigars

Two shot glasses

Rakija, or Schnopps

The corruption game has four stages: The introduction-, playing-, evaluation- and assignment stage. These stages will be described in the following chapters.



Figure 40: The corruption game set

5.1 GAME INTRODUCTION

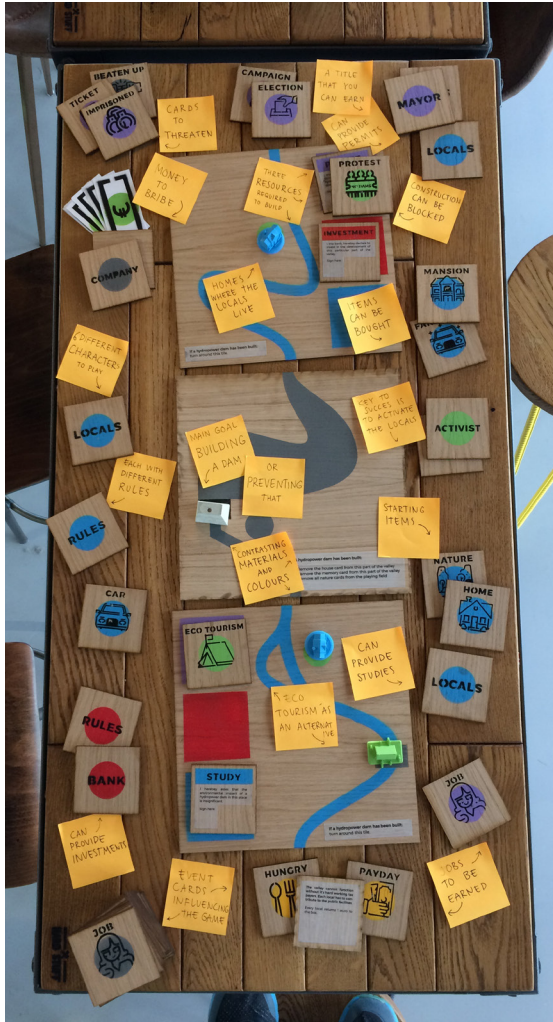


Figure 41: Game set-up

The game is being set up by the game facilitator. There is room for six players on each tables, each with a different character. Once all players are ready, the instructions can be read (Appendix P). These instructions introduces the different characters, and explain the most

basic rules. Hereafter all player can read their character card, and their character rules, which are already on the table. The game starts when the first card is taken from the event deck.



Figure 42: Character- and Rule Cards

PLAYING THE GAME 5.2



Figure 43: The corruption game in use

The players gradually go through the stack of event cards (figure 36). This event deck consists of several cards, with a set order, each with a different effect on the game. The player with the color corresponding with the card, reads it aloud. It is up to the players if, and when, to use the effect of these cards (Appendix T). The Permits, studies and Investments that are required to build dams, can be found in

the event deck as well. When the event deck is empty, the game is finished. Players can evaluate how many dams are build, and count who got the most points. Characters get points for different achievements, the player with the most points won the game.

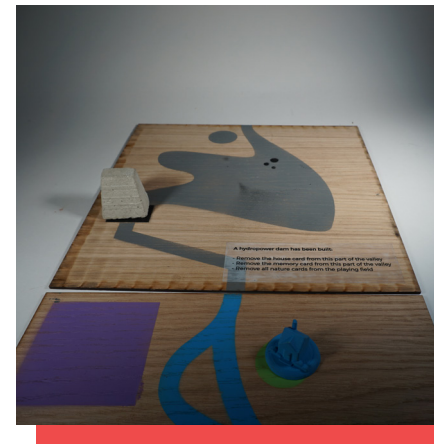


Figure 44 till 47: the process of building a hydropower dam in game. Once a Permit, Investment and Study are collected a dam is build. The playing field is then flipped, revealing the consequences. A concrete dam pawn is then placed on the playing field.

5.3 GROUP EVALUATION

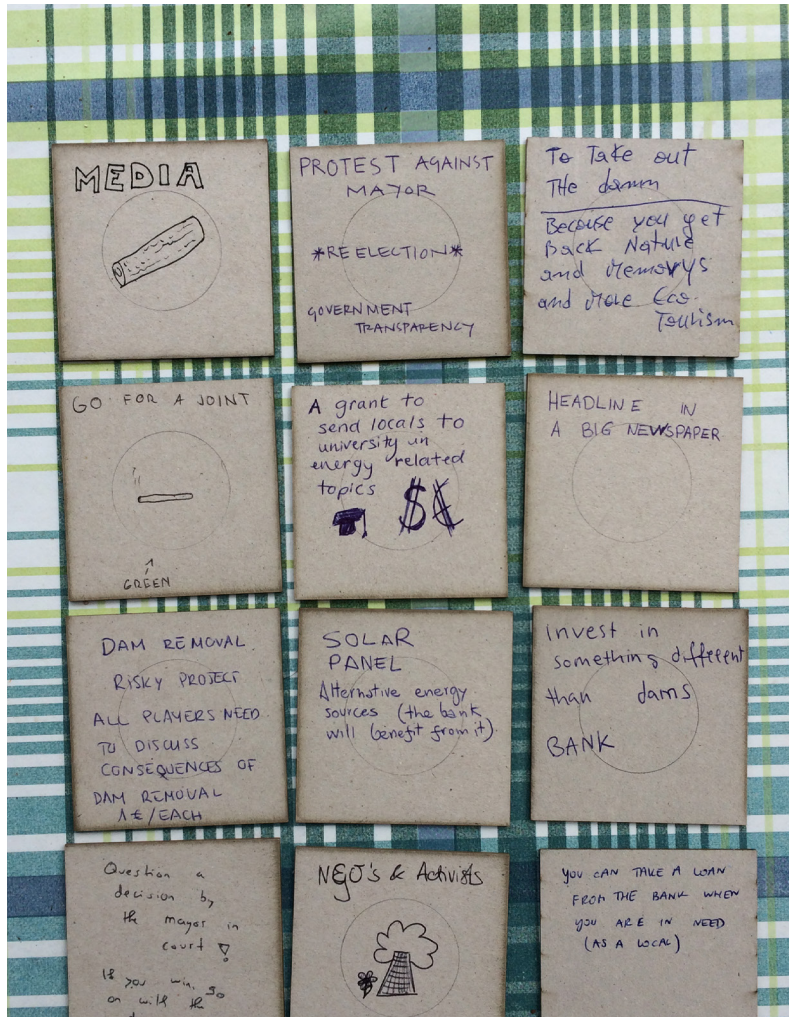
The game facilitator initiates the group evaluation. Questions asked to trigger player are:

*What happened?
What did you feel?
Who won the game, and why?
What surprised you the most?
Do you think it works like this in real life?*



Figure 48 and 49: Facilitating group evaluation

INDIVIDUAL ASSIGNMENT 5.4



One of the cards in the deck is the 'eco-tourism' card. This is the alternative that Balkan River Defense proposes to hydropower development. Players are invited to come up with their own solution or alternative. They can do that in the form of an event card. For the individual assignment, empty cards are provided, on which can be drawn on the front, and written on the back. Players are asked to

formulate and draw their ideas in card-form and quickly present these cards to each other. The game facilitator could ask these questions to trigger the players:

What character is it for?
What would be the effect?
Why would this work?
What would be the cost?

Figure 50: Ideas generated by participants of the Students for Rivers Camp

6 THE RESULT

The most important question is still unanswered. Has the desired transfer effect been acquired, have the players learned anything, and how was their experience?. And what is the future of the corruption game?

Method

The game is tested with the target group. All tables are observed, photographed and filmed during gameplay, group evaluation and the assignment. Of some tables the audio is recorded. Players are interviewed afterwards (Appendix F) The results of the individual assignment are collected (picture 50). Data is analysed and conclusions are drawn. The entire project is evaluated, and recommendations are made.



Figure 51: The game being tested during the Students for Rivers Camp

6.1 USER TEST

The final user test is executed during the Students for River Camp (July 2019) at Kamp Koren in Slovenia. The 36 participants were both students and lecturers, and played the game in six separate groups at the same time. Four game facilitators walk around, answer questions, and guide the

groups in the right direction: Encouraging a combination of bribing, nepotism, rule bending and threatening. The game is integrated in the Students for River camp program, and is followed up by a lecture about corruption the next day (figure 52). Results from the individual assignment given at the end of

the game are used as a possible starting point for student projects. During the students for river projects, students brainstormed about how science could benefit river conservation. An idea is generated, and presented (figure 54).

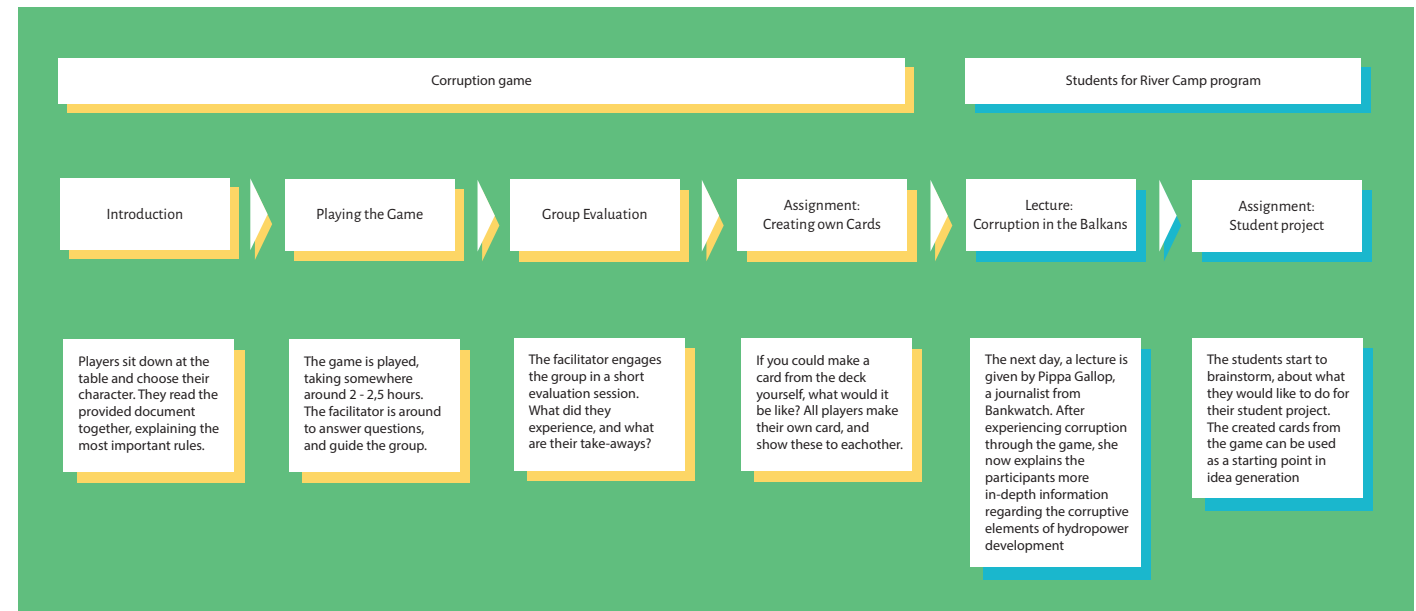


Figure 52: Overview of the game within the Students for River Camp program

Figure 53: One of the tables playing during the final user test, with another group in the background



Figure 54: One of the student showing their project. Winning one of the grants provided by Riverwatch



Figure 55: One of the lecturers, a professor in electrical engineering, participating in the game, playing as the Company



Figure 56: One of the players, playing as the Activist, is about to play the protest card

6.2 EVALUATION USER TEST

Method

A similar approach has been used, as during the field research. By joining all the activities of the target group, a complete immersion in the target group was acquired. Even though announced as one of the 'River Intellectuals', I was just one of the students participating in the Students for Rivers Camp. To generate the biggest quantity and most valuable data, it is therefore chosen, instead of a number of set formal interviews, to go for a multitude of informal interviews. Conducted on several occasions with both students, activists and lecturers. Some interviews are recorded on audio, sometimes notes were taken. To evaluate the different assumptions, the desired transfer effect and the requirements, interviews are conducted before partaking in the game, directly afterwards and during the 5

days after participating in the game. While playing the game video and audio are recorded on several tables, and observations are noted. All data is analysed, grouped and conclusion are drawn.

Knowledge gap

The assumption has been made that the target group has a knowledge gap regarding the cultural and political system of hydropower development. The students are indeed missing, to various degrees, the knowledge about the corruptive elements regarding river conservation. There is however a noticeable difference between the students from different cultures. For most of the students from the Balkan, corruption doesn't come as a surprise. Students from northern European countries, have a lesser knowledge of the culture of corruption in general.

Transfer effect

The desired transfer effect is stated as:

An increased knowledge of stakeholders and motives

An increased Knowledge of corruptive elements of the system

They players did show, to varying degree, an attitudinal change towards the system that drives hydropower development. Every student mentioned playing the game was a valuable experience. Most students said it was an eye-opener. As expected the transfer effect was much stronger with non-Balkan students. Some European students simply did not believed that what they had experienced was based on the real situation.

The most noticeable, the participants found, was the involvement of politicians in hydropower companies (or the other way around), and how the activist is highly dependant on the local communities. This effect, as well, was stronger with European students, than with Balkan students.

The game gave a first look into a world the student did not understand, and sometimes did not believe. The lecture that was given the next day by Pippa Gallop, was for many a necessary confirmation about what they had experienced earlier.

Several Lecturers that participated in the game, made references to it in the lectures they gave after playing the game.

Figure 57,58,59: Participants of
the Students for River Camp



'The lectures were interesting, but this was much more interactive and a welcome change. And fun!'



'When I'll be home, and people will ask me about the camp, the first thing I'm going to tell them is playing the game'



'When you are done, would it be possible to send me a set? I would love to play this with my students back home.'

*'Really, I can drink Rakija?
You really do start to
understand the Balkans.'*



*'They locked me up, and I
couldn't do anything. All
I wanted to do was stand
up and walk away.'*



*'I know you are a nice girl,
but man, I really hated
you playing the game.'*



Figure 60,61,62: Participants of
the Students for River Camp

1. The game should be

Engaging

The game is highly engaging. Participants were pointing, shouting and laughing. They were happy, proud, angry and scared. Some sessions went better than others. In some cases players had problems with character immersion. Possibly due to lack of experience with certain characters, a lack of character immersive game mechanics, or due to the more introvert character of some players.

2. The game should be playable

in the Field

The game is playable almost everywhere. All you need is the cards, and six people. The board and props deepen the experience, but aren't crucial for the gameplay.

EVALUATION REQUIREMENTS 6.3

3. People from different

Cultures

Should be able to play

There is a language gap. The written or spoken English is too hard for some students. Students from all cultures are able to play, a mixed group of Balkan and non-Balkan students is desired. Students from relatively 'corrupt' cultures, were noticeably more credible in playing as the Company or Mayor, and more openly corrupt than others. My two favorite Mayors came, not surprisingly, from south America and the Balkans. It would be interesting to test the game with an all-Balkan, or all-Western-European group, and analyze the differences.

4. The game should fit the

Attitude

and style of Balkan River Defence

It did. Balkan River Defence and the River Intellectuals initiative want to approach river conservation in a different way. The corruption game is one of these ways, and currently being used in practice and as promotion on their social media. The artwork, wood, concrete and written text of the game fits the rock 'n roll, uncompromised and self-made attitude of both organisations (Appendix S and U).

5. The game should

Inspire

players to use their expertise for river conservation

All students already wanted to use their expertise in river conservation, or they wouldn't have participated in the Camp. The game did make a small difference. For some it brightened their activism, for some it may have scared them a little. The blanc cards worked in idea generation, but lacked structure and a clear assignment. This might be due to the lack of a private facilitator, and the chaos of six groups playing at the same time.

6. The game should evoke

Discussion

The game did evoke discussion. But in some cases the discussion was short and lacked depth. This may be caused by a combination of the tight schedule, the chaos of six groups playing at the same time, the sudden heavy rainfall, and the lack of a private game facilitator.

6.4 CONCLUSION

The prototype is evaluated as successful in achieving the transfer effect. However, as an educational tool the game has the biggest effect combined with factual knowledge. Combining the game with a lecture of a professional worked excellent. The game is highly engaging, but reliant on extravert theatrical players to take their character to a next level. The role of game facilitator is crucial in guiding the process, but there are no guidelines.

The biggest validation of a successful project, even though the game is still far from perfect, is the fact that the game is being played for educational purposes on several occasions after the students for river camp.



Balkan River Defence

20 augustus om 21:03 · 🌐

Attention Devils Race kayakers! In a few days they will release water from the Lipno Dam so we can race through the rapids below. But can you imagine what this river looked like before the dam? Imagine all the rapids lost and buried under the Lipno reservoir?! Imagine not having to wait for someone to “turn the water on”? And imagine the decision making, politics and debates that happen before a dam is built.

Join our [Elli](#) and [Vera](#) on THURSDAY EVENING at the campsite to explore the interactions and transactions behind hydropower by playing the Corruption Game. The game was developed by one of our [#RiverIntellectuals](#) and provides a fun and interactive way to understand the behind the scenes interactions of dam construction. All you need is your brain and some dark thoughts 🐱.

PS: Schnops included!

[#devilsextremerace2019](#) [#fightcorruption](#) [#nodams](#) [#seriousgame](#) [#keepriver](#)
[swild Free Rivers Fund](#)

[Vertaling bekijken](#)

Figure 63: Social media post from the Balkan River Defence organisation

RECOMMENDATIONS 6.5

Guidelines Game Facilitator

In some cases the discussion was short and lacked depth. A private and experienced game facilitator has proven to be crucial for a successful evaluation and discussion. A game facilitating guide or training should be included in the game, in case no experienced facilitator is available.

Use of Language

The game should be playable for people from different cultures with different languages. The use of the English language on some elements of the game, has proven to be too difficult for several players. Some cards might need to be rewritten. It should be considered to translate the game in Balkan languages. But that might only be feasible if it is going to be played multiple times, with homogeneous groups that speak the same language.

Inconsistencies

Any inconsistencies still left in visual artwork and the use of language should be adjusted. Some game elements might be combined, or separated. Gameplay could still be smoothened.

Introduction of rules and goals

Most rules, information and goals of the different characters are introduced in bulk at the start. This has proven to be too much to handle for most players, resulting in a lot of confusion, and a slower paced gameplay. The possibility should be considered, to implement some of these rules, bits of information and goals, throughout the course of the game. For instance, as event cards.

Group evaluation

It should be considered to integrate group evaluation and discussion as event cards. Giving it more structure as well.

Card game

The game is quite large, heavy and expensive. To make the game more affordable, better accessible, and easier to take it with you, a smaller card version could be developed. The hydropower pawns however, should always remain concrete.

6.6 FUTURE

The aim from both me and the River Intellectuals network, is to develop this game further. It is proposed to do another iteration of the game, possibly in some collaboration with Raccoon Serious Games. There are plans to develop an easier accessible card version, as well as develop one of the previous prototypes (prototype 4, Appendix X) into a more informal version.



Figure 63: The corruption game

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7 THE APPENDIX

A WHY A GAME

Designing a game is embedded in the assignment. As designer my choices what product to develop, are therefore limited. Nevertheless, it is usefull to ask the question: Why should this problem be solved by making a serious game?



Figure 64: User test in Romania

Motivations of the players are central to the story, utilising interesting characters and reward loops keep you pushing forward. Players will become emotionally invested in seeing it through.

Engaging

Reusable

Serious games can be used multiple times, for multiple applications. It can allow a player to explore different paths and different consequences, resulting in a well-rounded view of a situation or problem

You can hear about it, read about it, but only once you experience it, you can feel the effect. A game can re-enact that real-life experience.

Experience

Audience

Serious games are great for taking a complex topic and turning it into a case study game, so that learning can be accessed by a wider audience.

Experiencing the corruption of the Balkan first hand, can be quite dangerous. A game is a safe environment to practice and learn.

Safe

it Works

It works. Overall declarative knowledge is higher for players taught with simulation games than a comparison group (Ely and Sitzmann, 2010). Being indulged in a fictional story world can enhance prosocial skills resulting in an increase in altruistic behaviour (Johnson, 2012) or change in peoples beliefs (Appel and Richter, 2007)

B DEFINITION GAME

Before answering the question: Why a game? First one should ask the question: What is a game? By combining existing statements, A personal definition for a 'game' is generated.

*A game is:
A fun, voluntary and fictitious activity with a structure and rules,
where players interact and compete in achieving goals,
and somebody wins.*



Roger Caillois



Greg Costikyan



Kevin J. Maroney



Chris Crawford



Clark C. Abt



Bernard Suits



Katie Salen and Eric Zimmerman



Elliot Avedon and Brian Sutton-Smith



Jane McGonigal

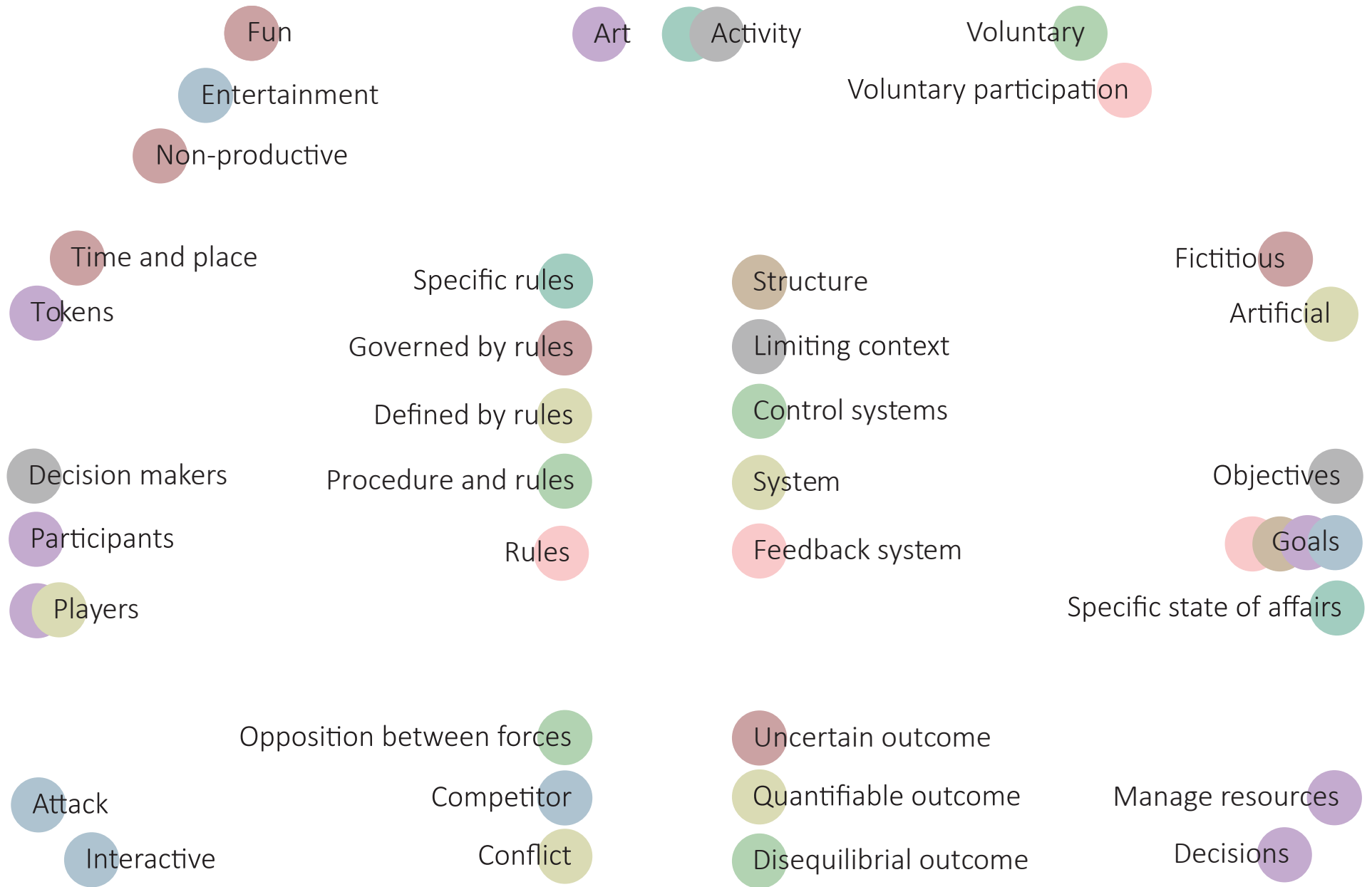
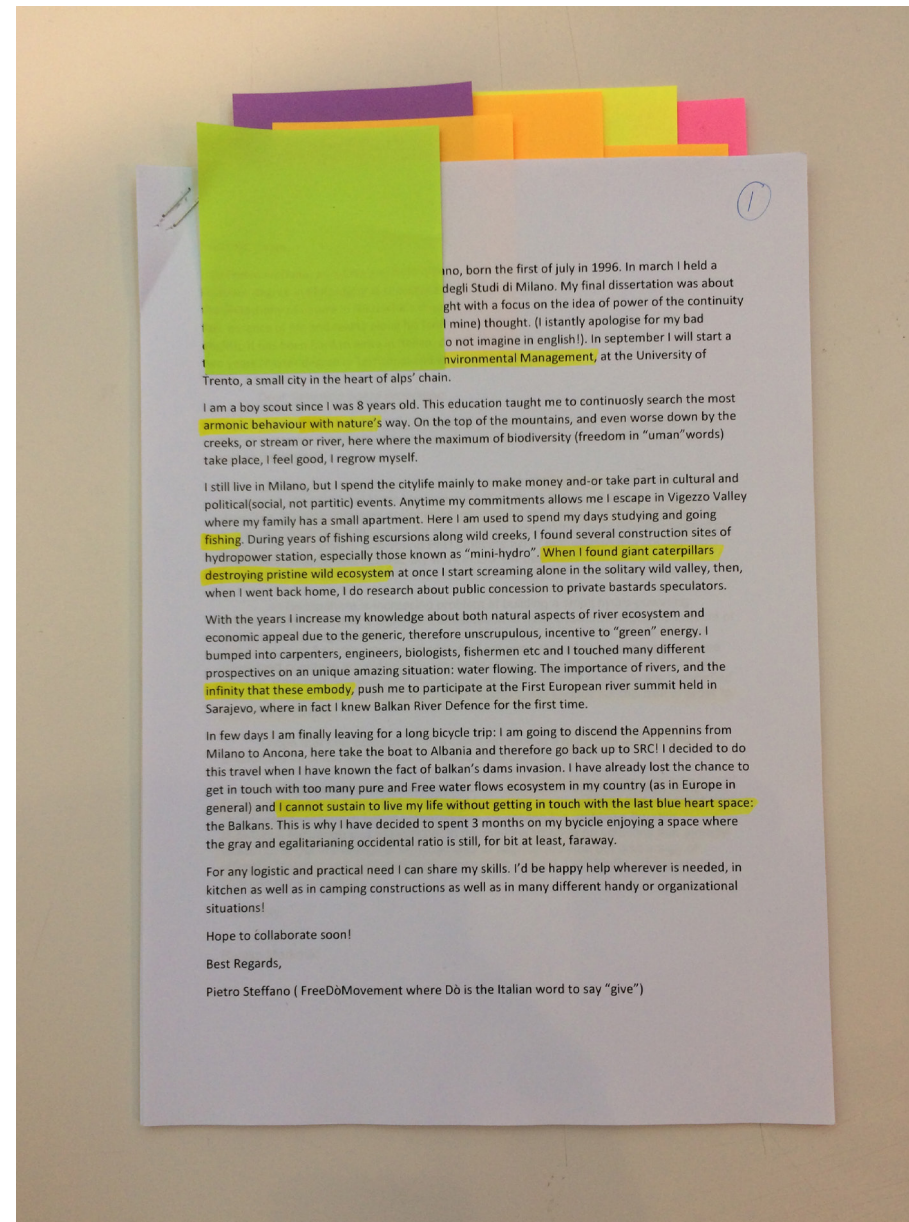
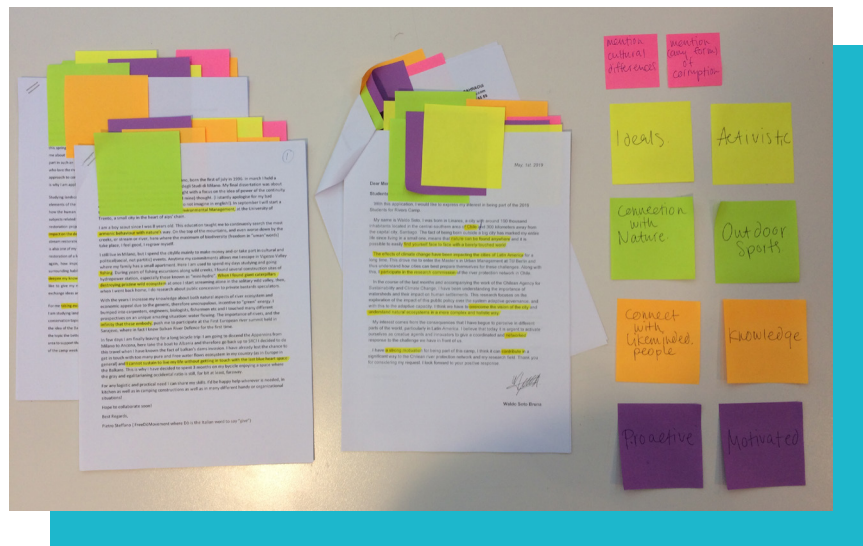


Figure 65: Analysis definition game

C LETTERS OF MOTIVATION

To determine the target group characteristics 38 letters of motivation, sent by the participants of the summer camp are thoroughly analysed. Characteristics are highlighted, and clustered into 8 groups. Also mentions of cultural differences and forms of corruption are noted, as validation of the necessity for the desired transfer effect.



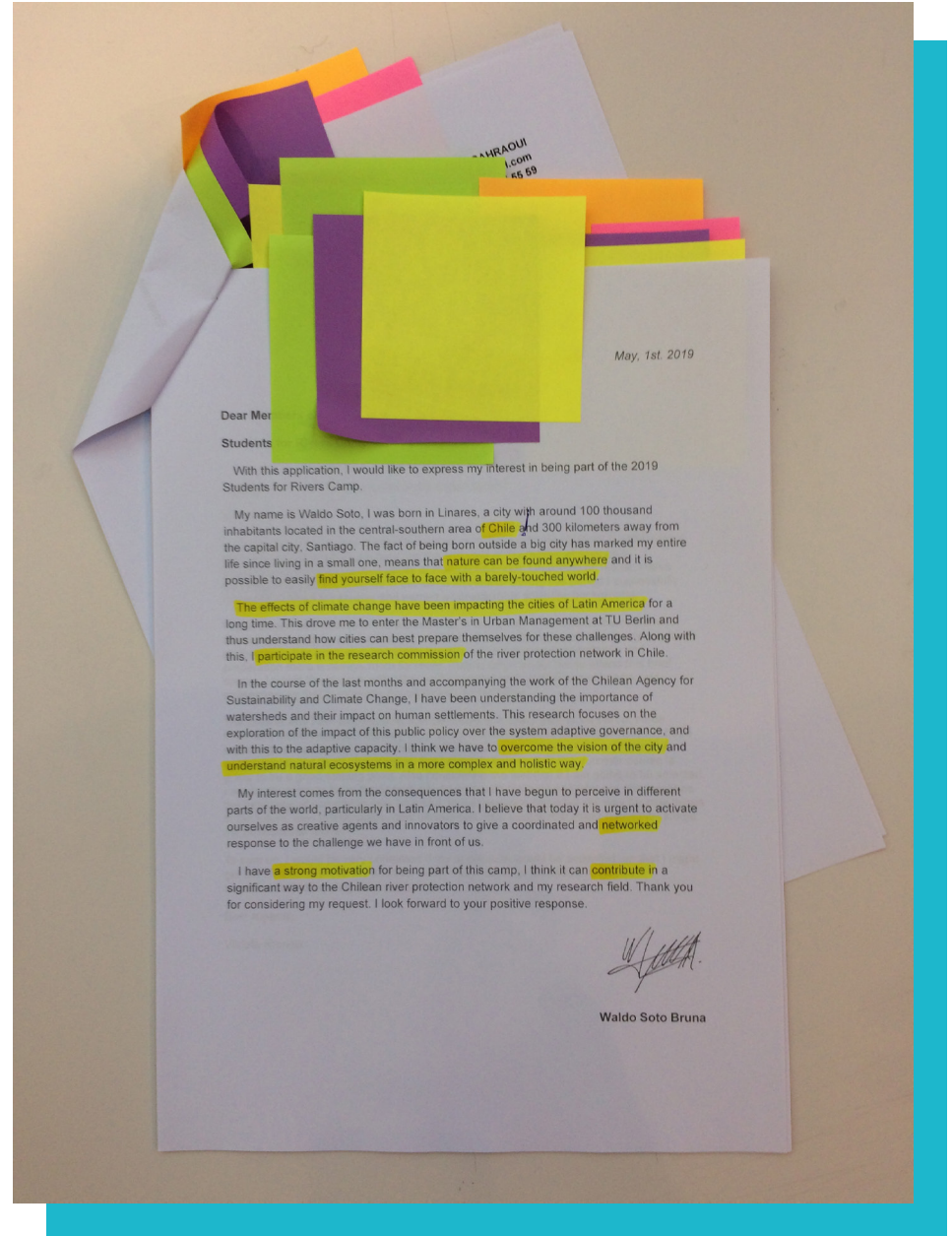
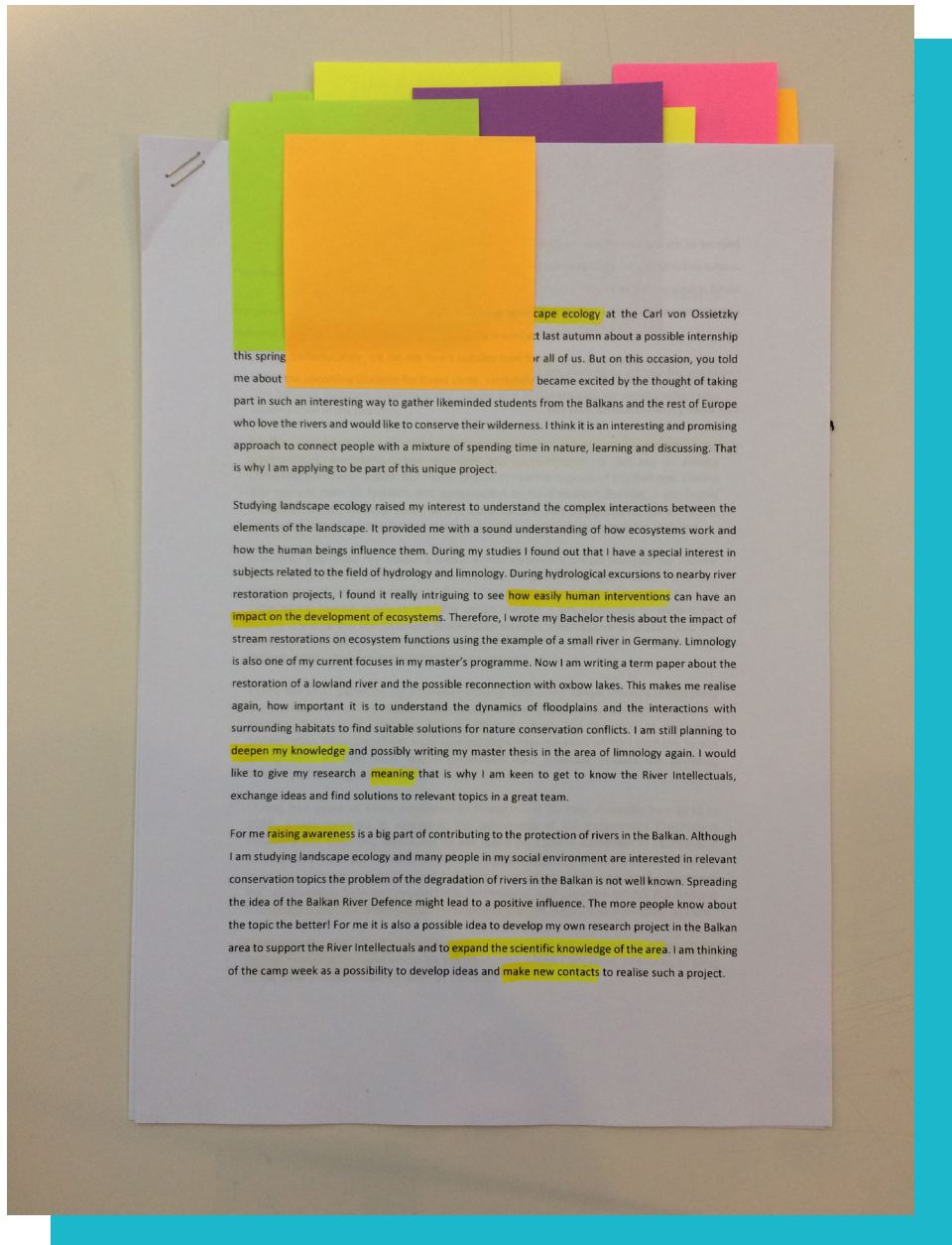


Figure 66,67,68: Analysis letters of motivation

'Civil disobedience is one complementary strategy to accelerate a system change'

Idealistic

'I think that everyone should contribute in making a change, in a way that he can'

Activistic

Proactive

'I plan to do a radio broadcast about the situation of the Balkan rivers, and I will write an article about the river protection for the next issue of the magazine Bergauf'

Motivated

All participants have sent application letters and videos, and are willing to contribute time, expertise and money. This strongly suggest that the participants are intrinsically motivated an passionate.

*'I love to meet and
connect with people
especially when we share
a passion for freshwater
science and nature
protection'*

a thirst for

Knowledge

*'My goal now is to build
up a proper foundation
of knowledge in this
field'*

Connect

with like-minded people

connection to

Nature

*'My education has taught
me to continuously
search the most
harmonic behaviour with
natures way'*

Many participants enjoy outdoor
activities such as: Guiding, canoeing,
biking, scouting, hiking, climbing,
fishing and kayaking

a love for

Outdoor

activity

D INTERVIEWS ROMANIA

Field research is done during the Balkan River Tour 4 in Romania. A week of small informal interviews is conducted with participants and experts, both from the Balkan and the rest of Europe. The gathered data is analysed, and formed the base of this project. Experts were all from the Balkan, and could tell different perspectives on both Hydropower Development, and Balkan River Defence as an organisation. Thereby contributing in defining the problem (Chapter X), and formulating the desired story (Chapter X). Interviewing participants set the expectations of the target group (Chapter X).

Figures 69 till 72: Interviewed experts



Volunteer - Let's do it Romania



Catalin Campeanu - Local entrepreneur and river defender



Pippa Gallop - Bankwatch



Rok Rozman - Balkan River Defence



Figure 73: Interviewed participants of Balkan River Tour 4 in Romania

EOBSERVATIONS ROMANIA

Observations on the organisation, the target group and the Balkan culture are made during the Balkan River Tour in Romania. To get the best understanding of situation, a Deep dive approach is chosen. Meaning a complete immersion in the organisation, by joining all activities during the event. This included a clean up in a Romanian village, meetings with local mayors, visits to the local school, protesting at building sites, and of course: paddling.



Figure 74: Collage Activities

F INTERVIEWS SLOVENIA

A series of small informal and continuous interviews are conducted with all the participants of the Students for River Camp. Participants Data is captured on audio, and notes are taken. Overall experience is defined, and Transfer effect was measured.



Figure 73: Interviewed participants of the Students for Rivers Camp in Slovenia 76

G STORY ELEMENT CARDS

The problem and its stakeholders are vast and complex. One of the biggest difficulties lies in choosing and describing what story to tell. Existing design methodology was ineffective in this choice. A new method was developed

and executed, with the goal to generate a complete but flexible overview. Important story elements are subtracted from literature, interviews and observations, and printed in card form. With the use of the right elements

the most feasible story is created, and the narrative is chosen.



Figure 77: Creating story and narrative with the cards



Figure 78: Story Element Cards

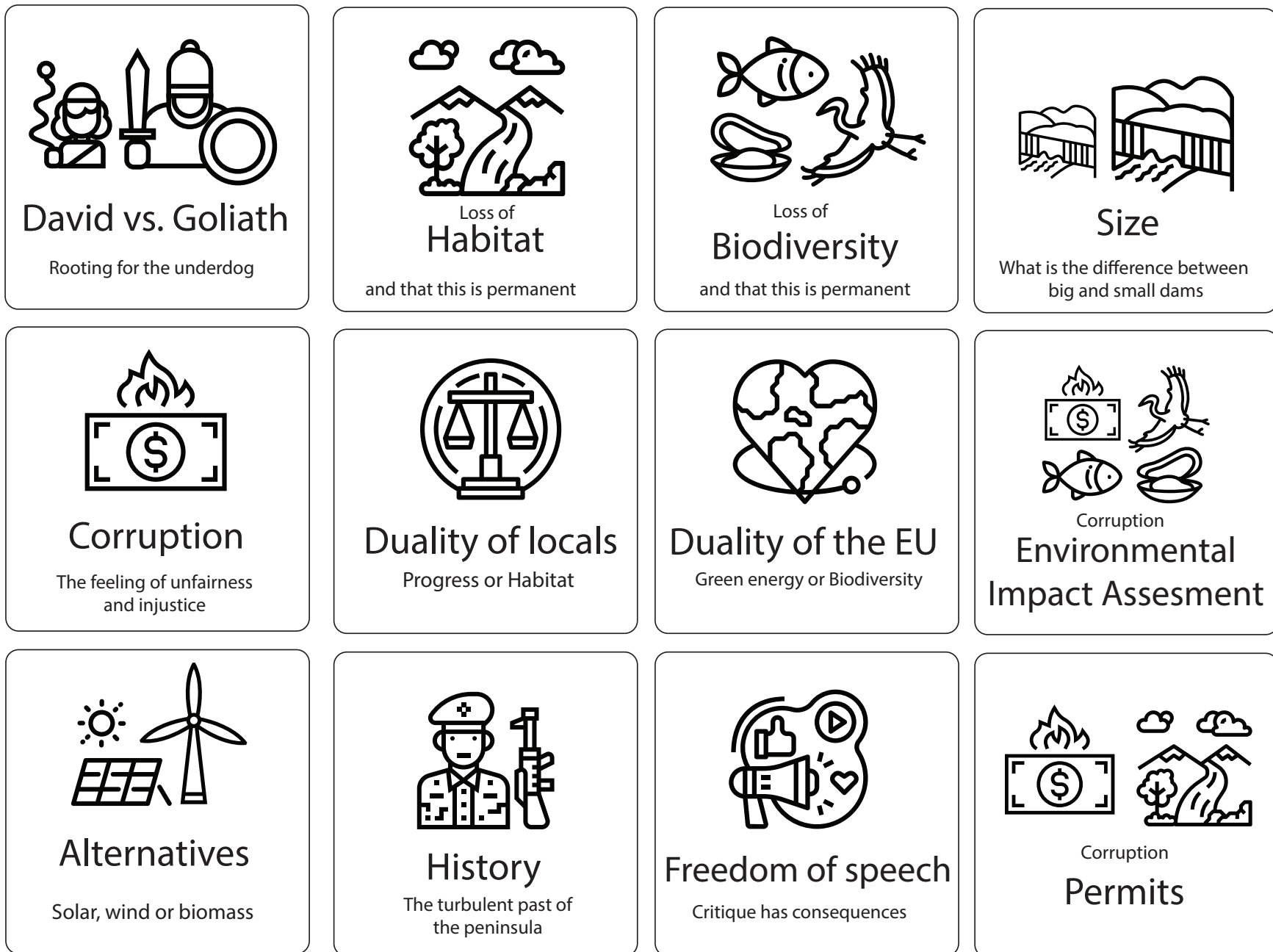


Figure 79: Selection of Story Element Cards

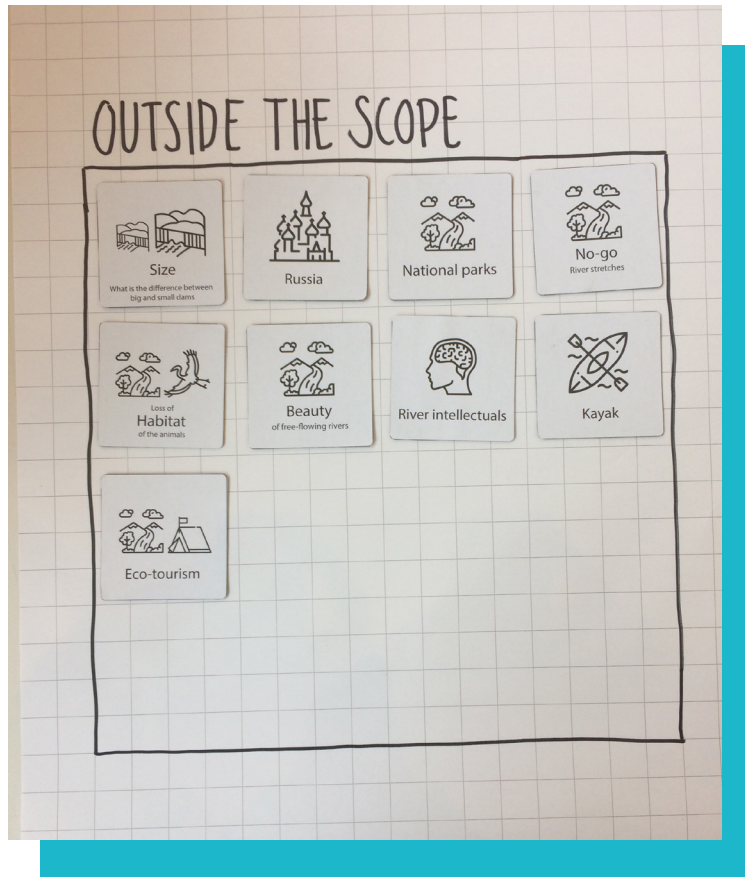


Figure 80: Story elements that remained outside the scope

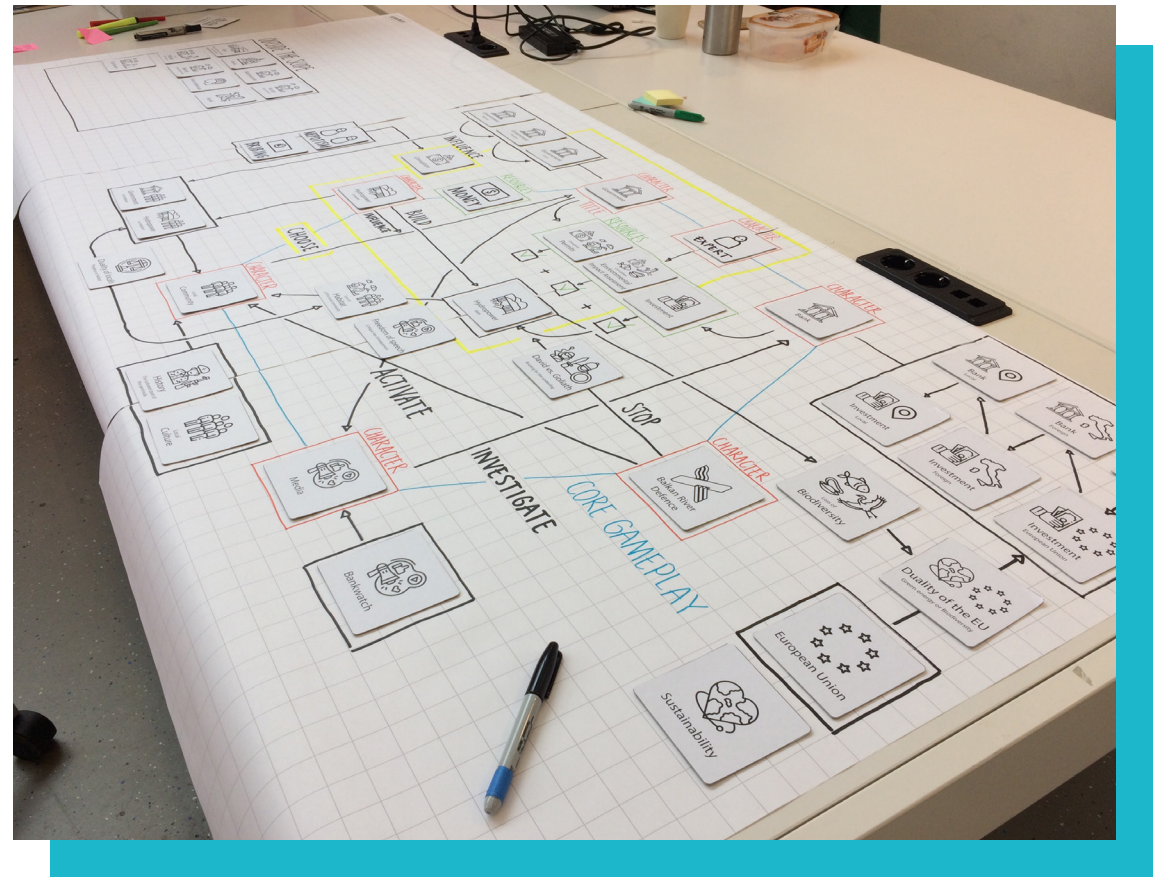


Figure 81: Story Element Cards in use

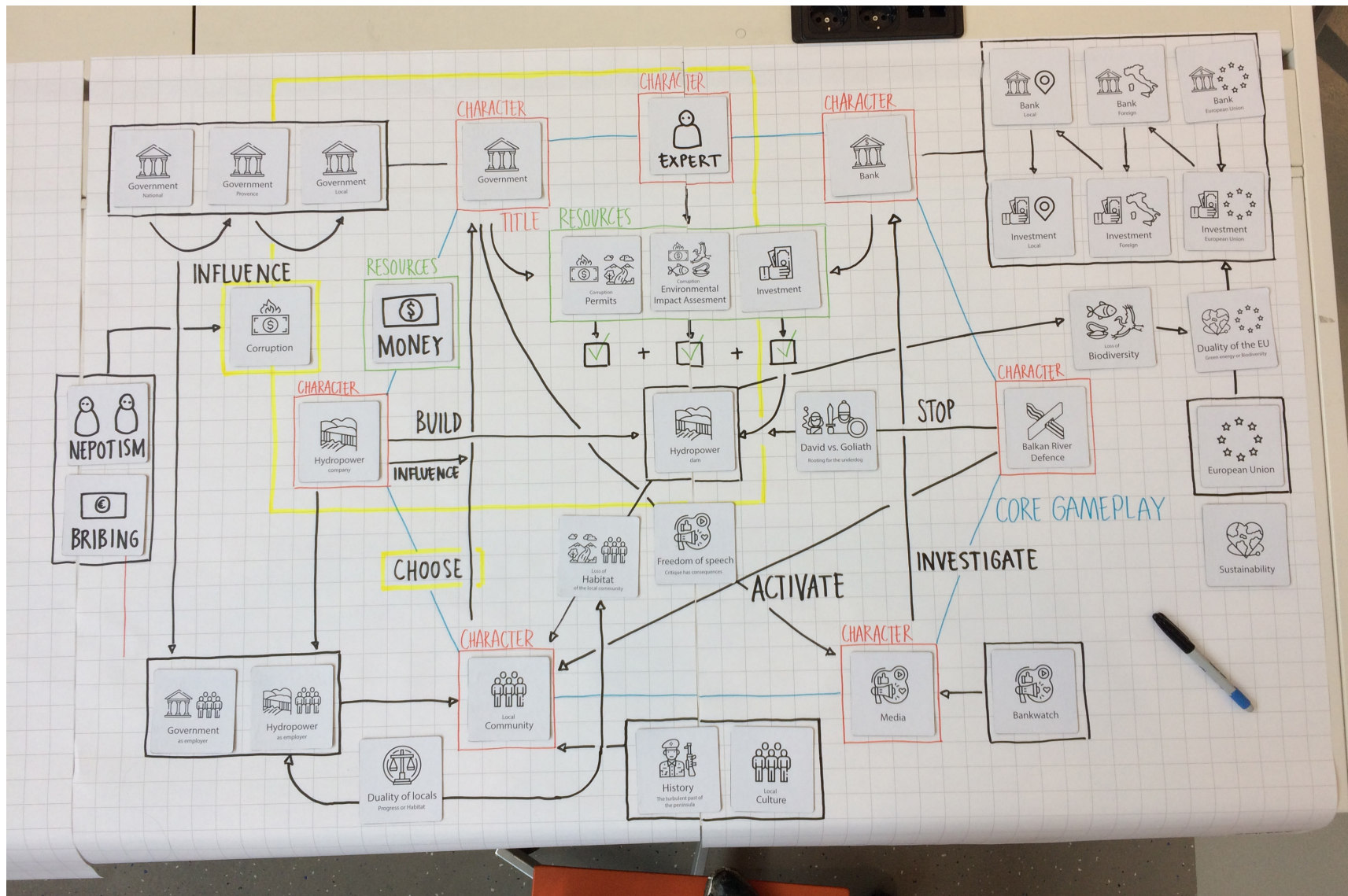


Figure 82: Created narrative with the Story Element Cards

Once the story and narrative is defined, game mechanics can be chosen. Post its are placed linking story elements to game mechanics. Game mechanics are tested in different prototypes (Appendix X), evaluated and adjusted accordingly.

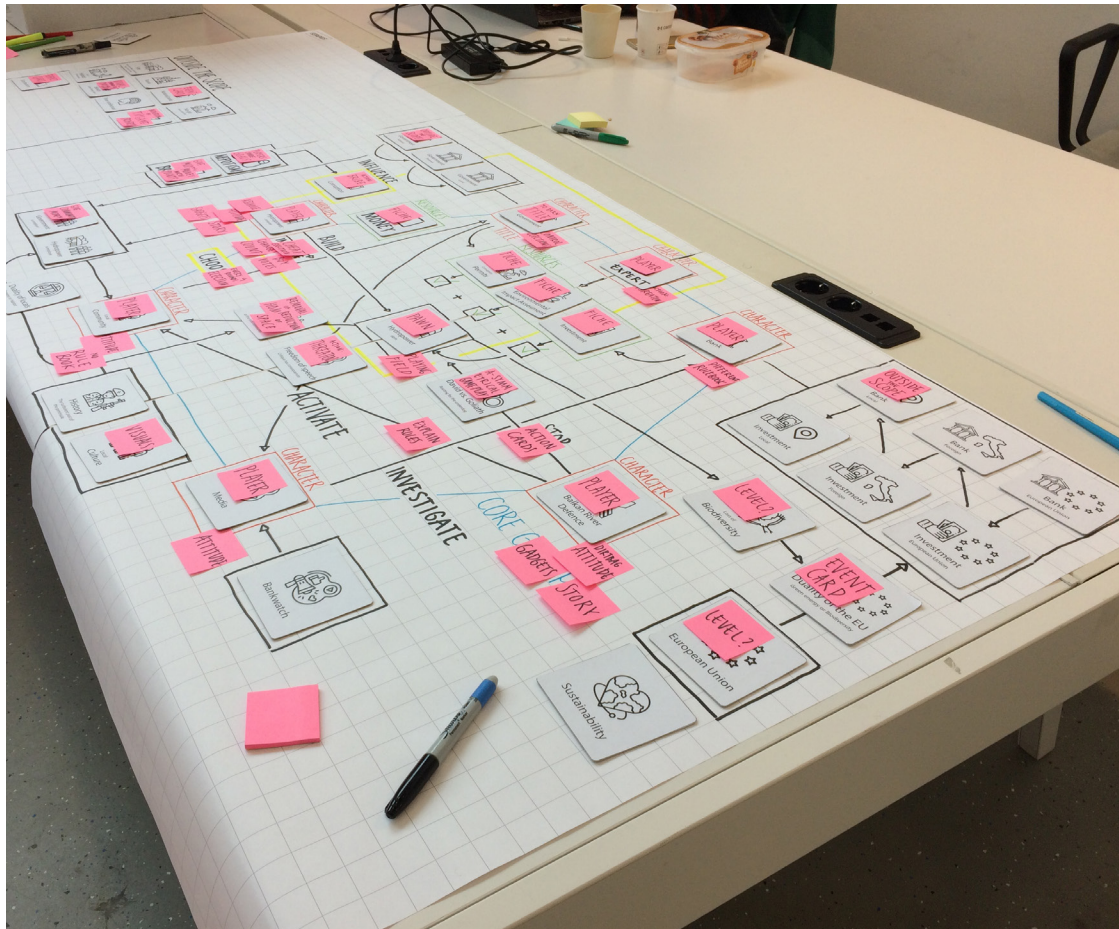


Figure 83: Combining game elements with game mechanics

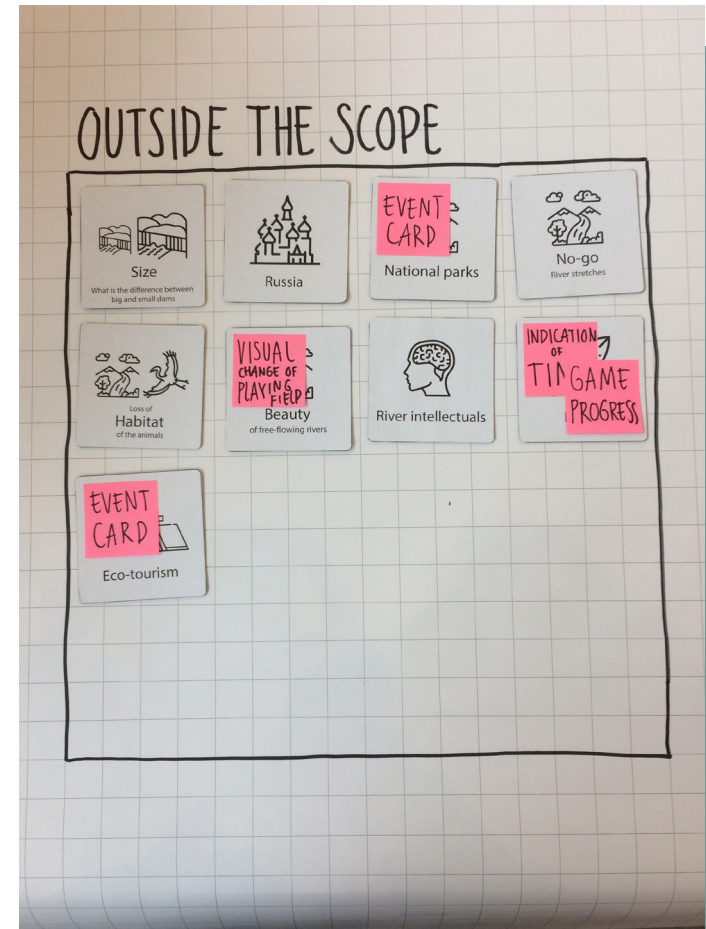


Figure 84: Story elements that were outside the scope, but might still be incorporated in the game

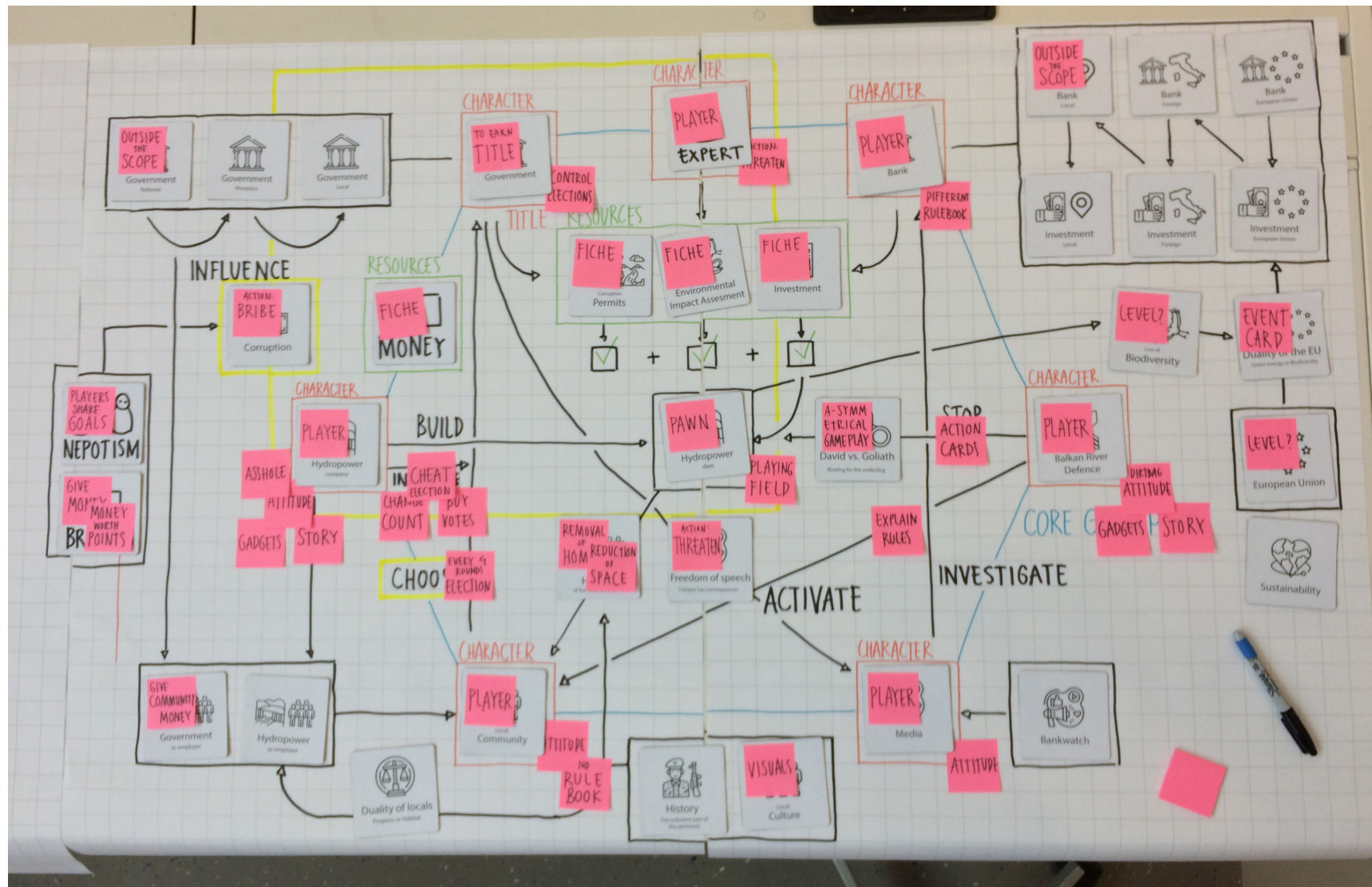


Figure 85: Chosen mechanics that fit the story and narrative

DESIGN FOR EMOTION

Story is emotion. To create an engaging experience for all characters, a wide variety of emotional states are crucial. To deepen storytelling and make characters feel the impact of their decisions, it is chosen to use a combination of design for emotion methodology. With the use of emotion capture cards (Desmet, XX), interviews

(Appendix X) were analyzed, and emotions extracted. These emotions are combined with the Story Element Cards (Appendix X). A story and emotion blueprint is created for the each character. Afterwards, possible game mechanics are added with purple post-it;s.

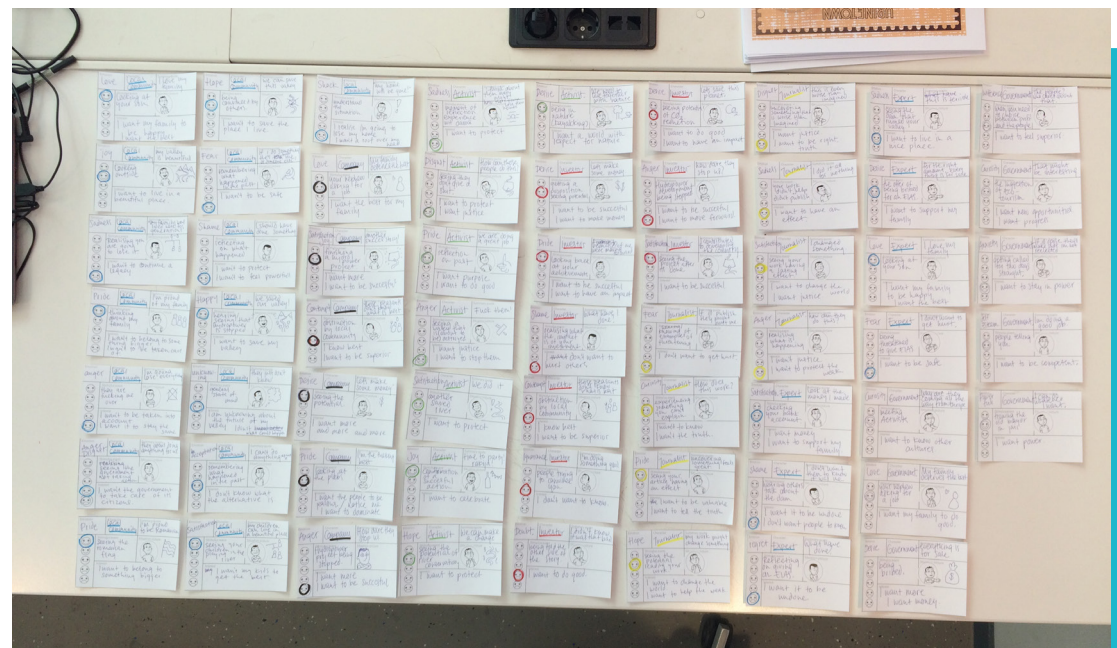


Figure 86 and 87: Emotion Capture Cards in use

**RESEARCH
THROUGH DESIGN**

This report might suggest otherwise, but designing a game has never been a linear process. Most design related decision are made by research through design.

Trying, failing, adjusting and trying again. The final game is the end result of many prototypes that are tested and evaluated, and adjusted. Adjustments are made in

between prototypes or testing sessions, or even during gameplay.



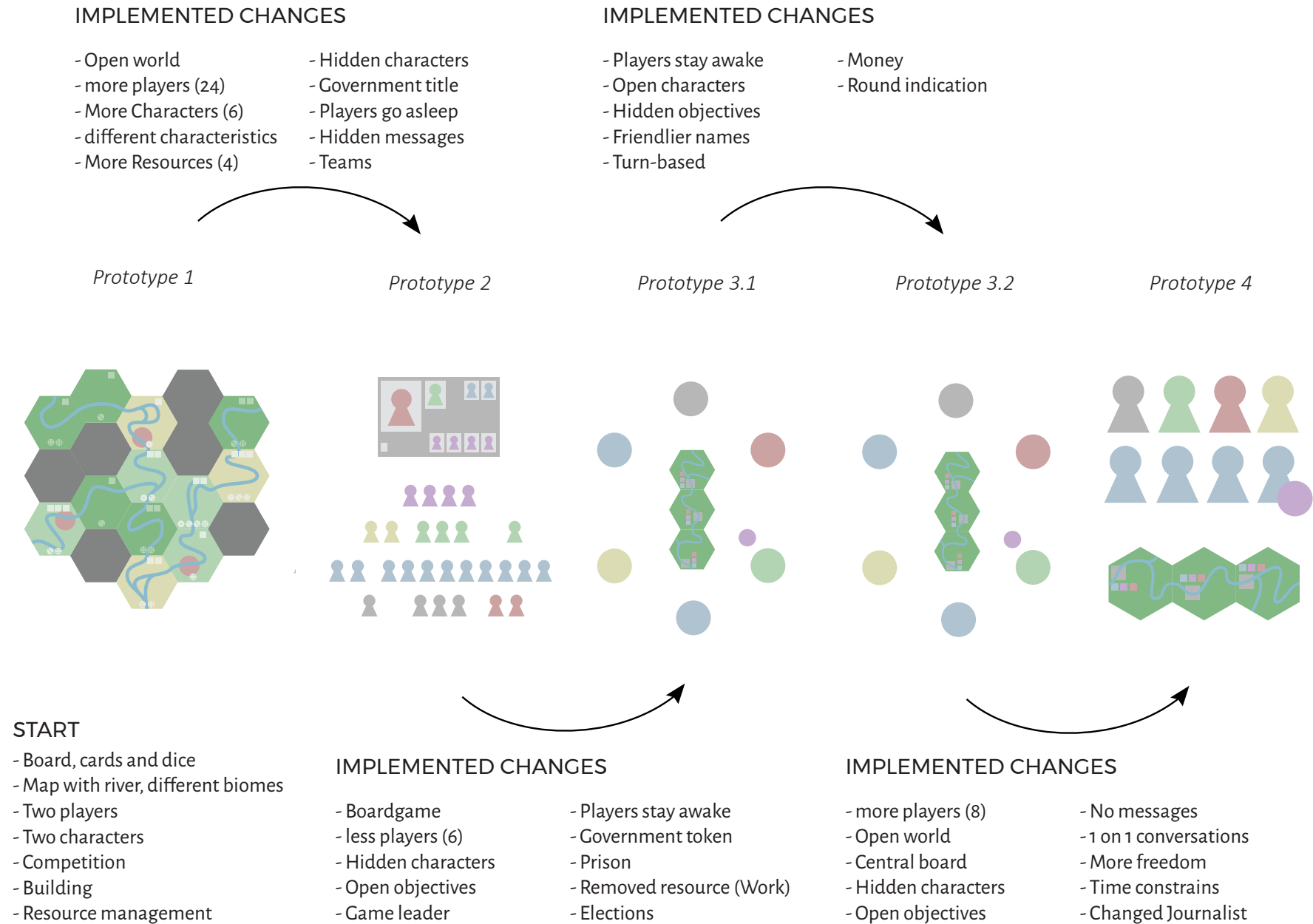


Figure 92: Overview of prototypes and implemented changes

PROTOTYPE ONE

Initially designed to simulate the building process, Prototype one is a two-player resource management building game. Resources could be acquired by rolling the dice, each throw allows you to manipulate something on the field. The prototype lacked, story, depth and interaction and was quickly discarded. Government, Expert and Bank (Formerly Investor) characters are used for the first time, although incorporated as game mechanics.

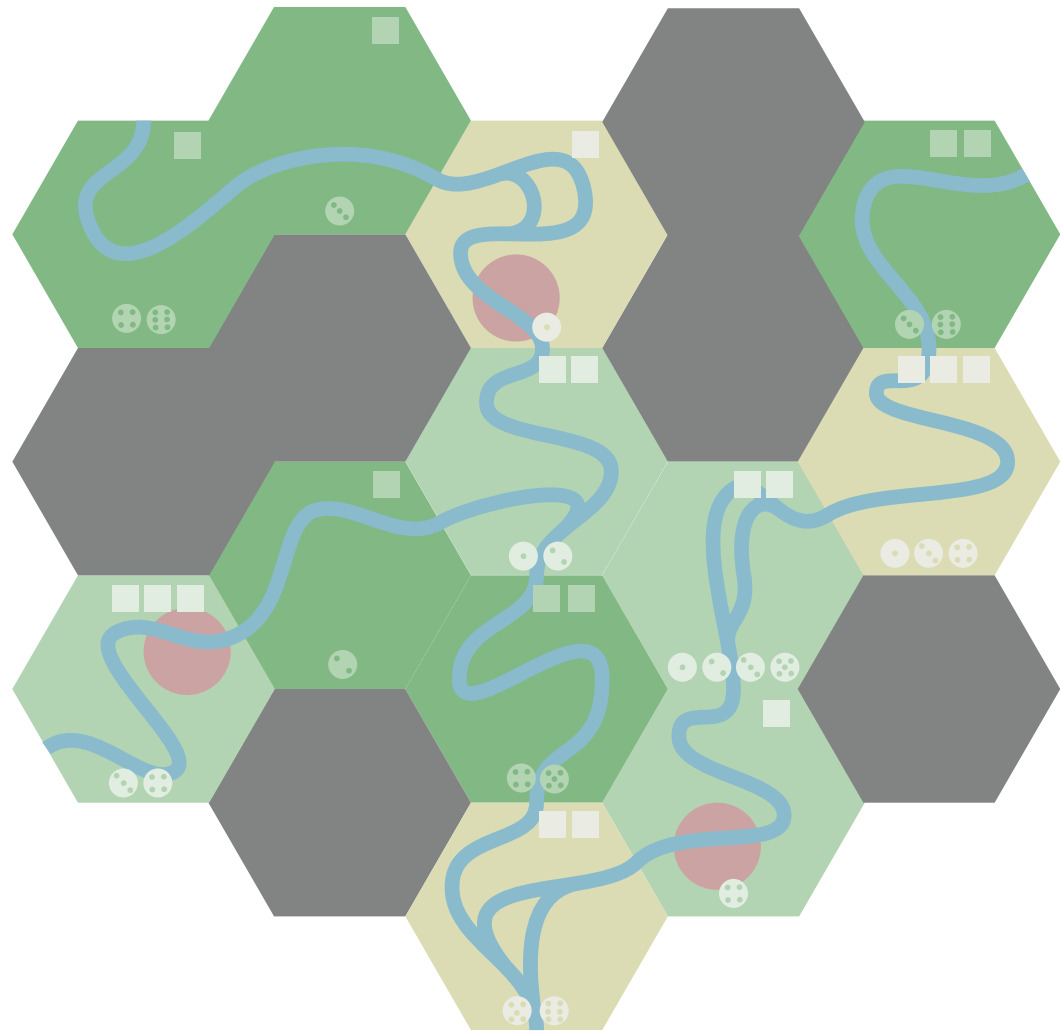


Figure 93: Playing field Prototype 1



Figure 94: Prototype 1

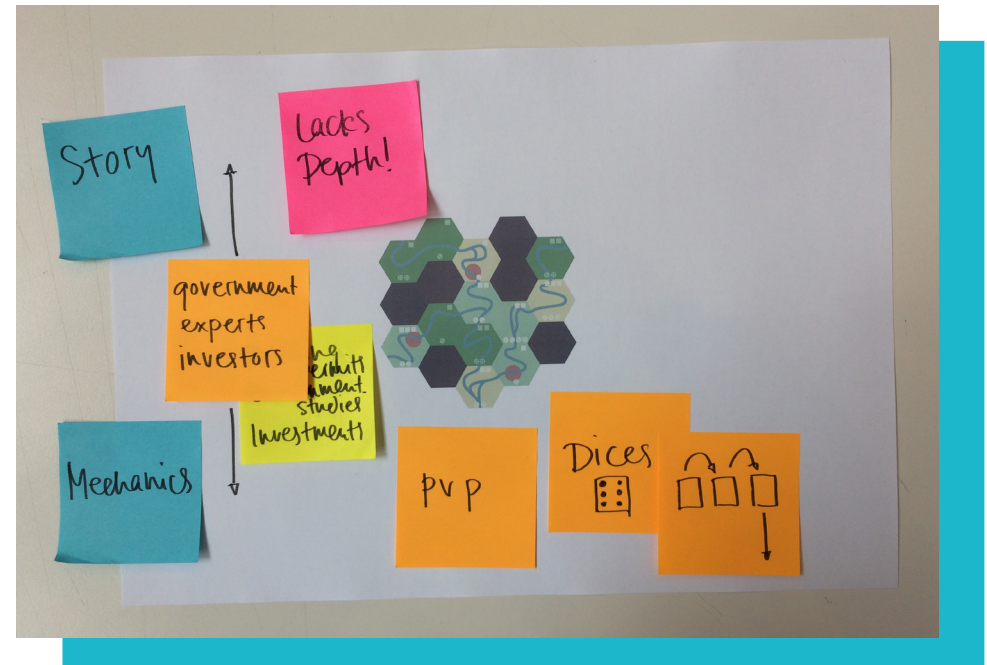


Figure 95: Analysis Prototype 1

PROTOTYPE TWO

To encourage interaction, and simulating the decision making process, prototype two is incorporates elements of the murder game and the werewolves of millers hollow. In between 10 and 24 players get a assigned a secret character, with different traits and objectives. All players can write hidden messages to one another. The prototype is tested, with fewer people, but already proved to be quite chaotic. Interactions between players, and messages send, show elements of the desired story and transfer effect.



Figure 97: Prototype 2

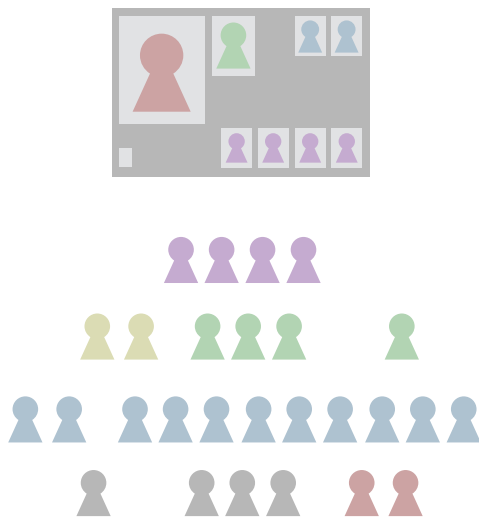


Figure 96: Overview Prototype 2

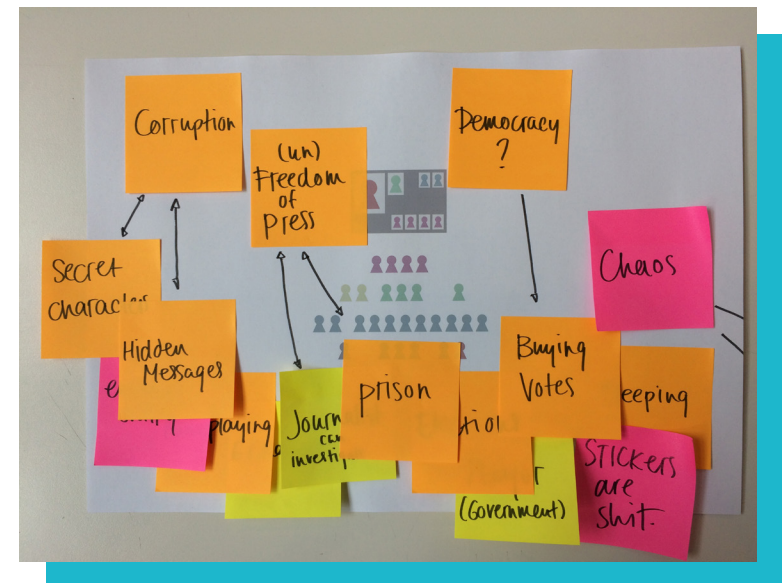


Figure 98: Analysis User test Prototype 2



Figure 99: User test Prototype 2

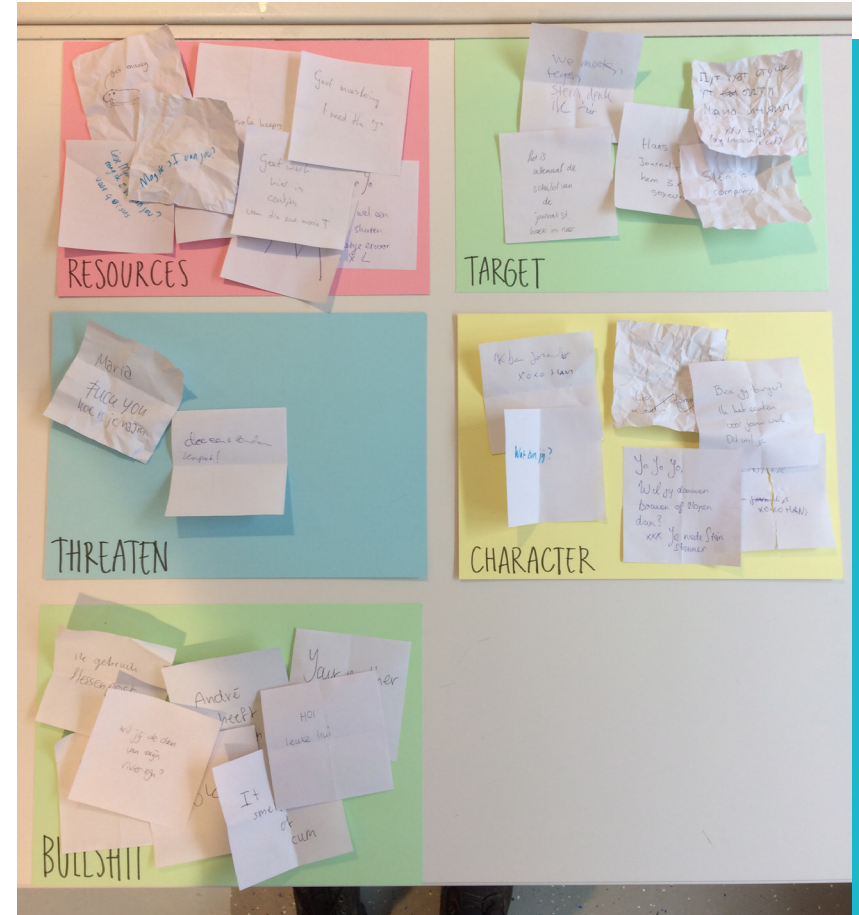


Figure 100: Messages Prototype 2

PROTOTYPE THREE.ONE

Based on the previous prototype, but redesigned to avoid chaos. Completely written rules and guidelines proved to be effectful. The number of players are decreased as well. New gameplay mechanics include: Players going 'asleep' every round, characters waking to perform their actions, as well as electing a mayor. Writing hidden messages proved to slow the game down significantly. But the messages written showed the desired corruptive elements.

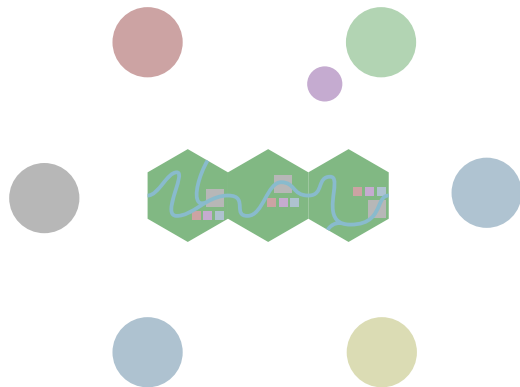


Figure 101: Overview Prototype 3.1

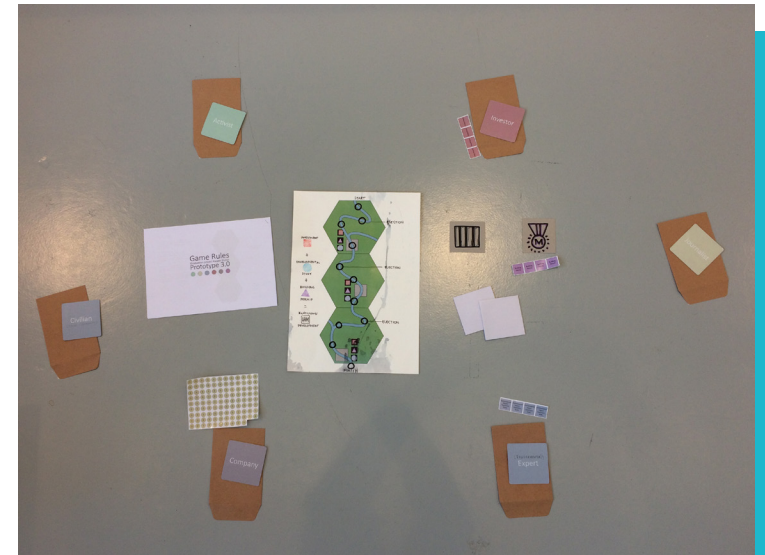


Figure 102: Prototype 3.1

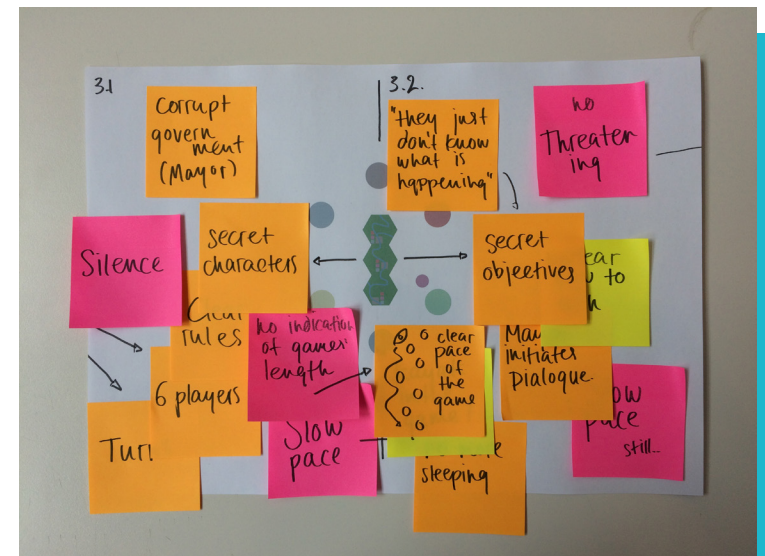


Figure 103: Analysis User test Prototype 3



Figure 104: User test Prototype 3.1

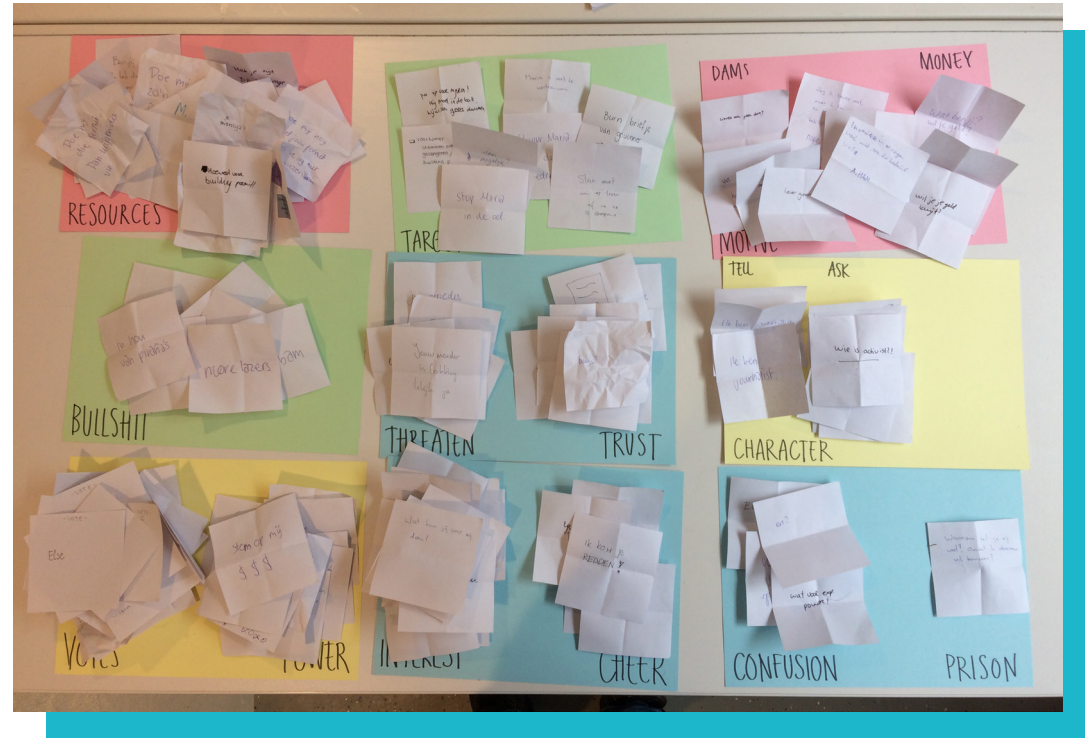


Figure 105: Messages Prototype 3.1

PROTOTYPE THREE.TWO

Played at the Balkan River Tour 4 in Romania with participants, mostly kayakers, of that week. Small changes were made. Introduction of a turn based system, instead of 'falling asleep'. Indication of what round, and game progress is added. Characters are known to other players, but objectives are secret. Character names are changed from scientific to more personal, easier and friendlier names. Investor became Bank, Local community became Local, etc. Writing messages slowed the game down, again. Open characters provided a better opportunity for role playing and character immersion, and thereby a more experience-oriented gameplay.

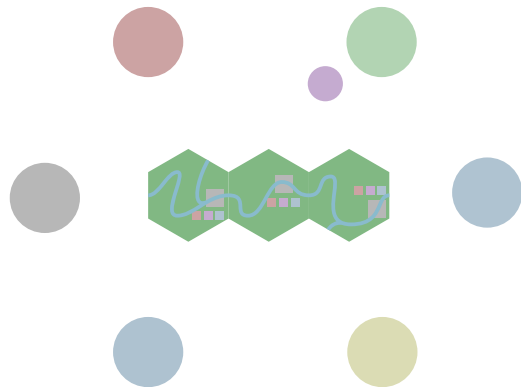


Figure 106: Overview Prototype 3.2

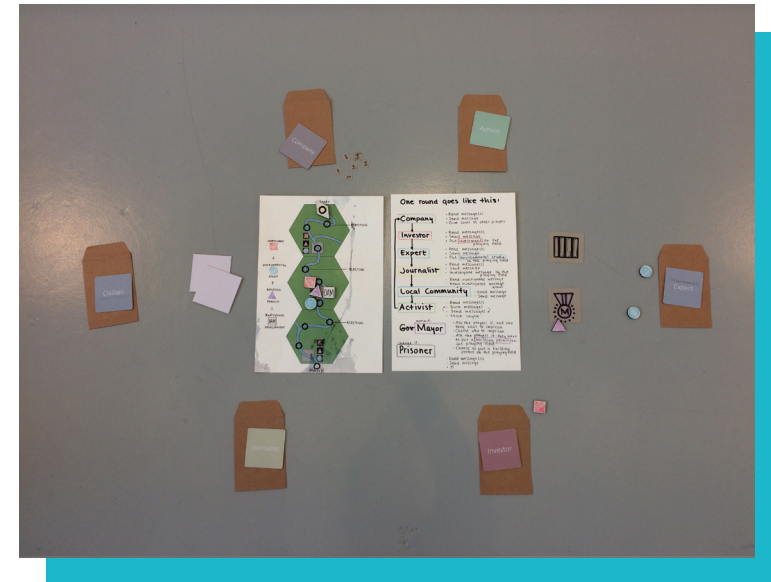


Figure 107: Prototype 3.2

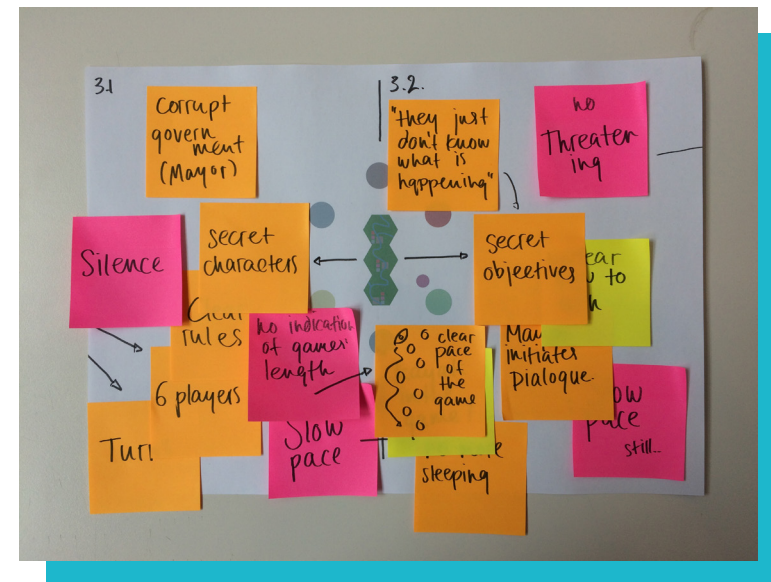


Figure 108: Analysis User test Prototype 3



Figure 109:
Collage
User test
Prototype 3.2

PROTOTYPE FOUR

Played at the Balkan River Tour 4 as well. Later renamed as the 'party version'. Completely open world, at a campfire setting. Set times for all players to meet again, free time in between. Character immersion was superb. Players came up with their own narrative, were heavily involved and emotional. Too chaotic for a more formal setting, although several aspects are integrated in the final version (Break cards, Rakija, Character props). This version might be further developed in a more informal educational tool for future Balkan River Tours (or similar events).

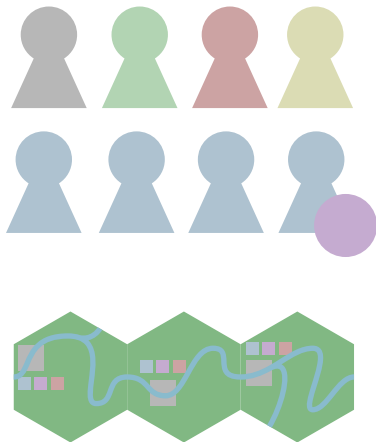


Figure 110: Overview Prototype 4

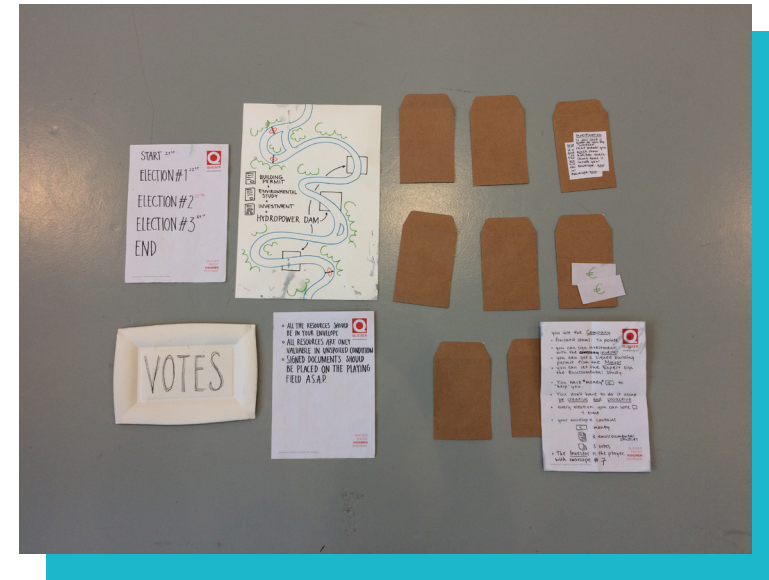


Figure 111: Prototype 4

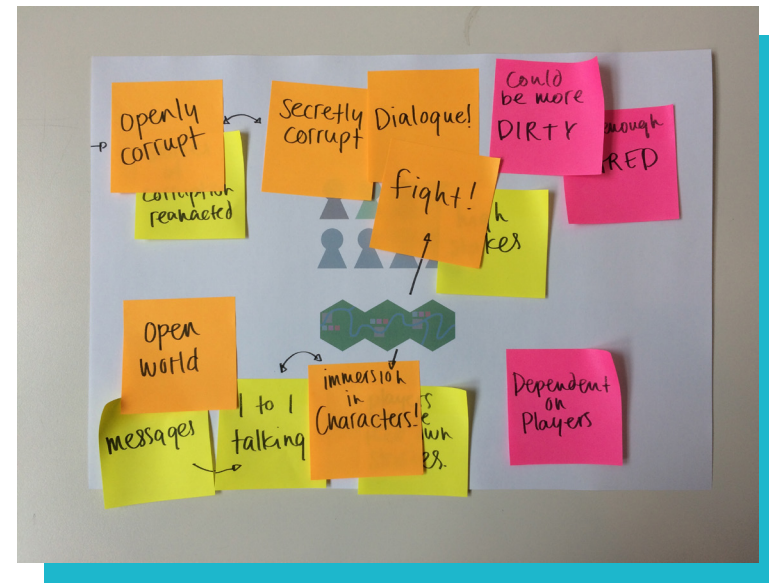


Figure 112: Analysis User test Prototype 4

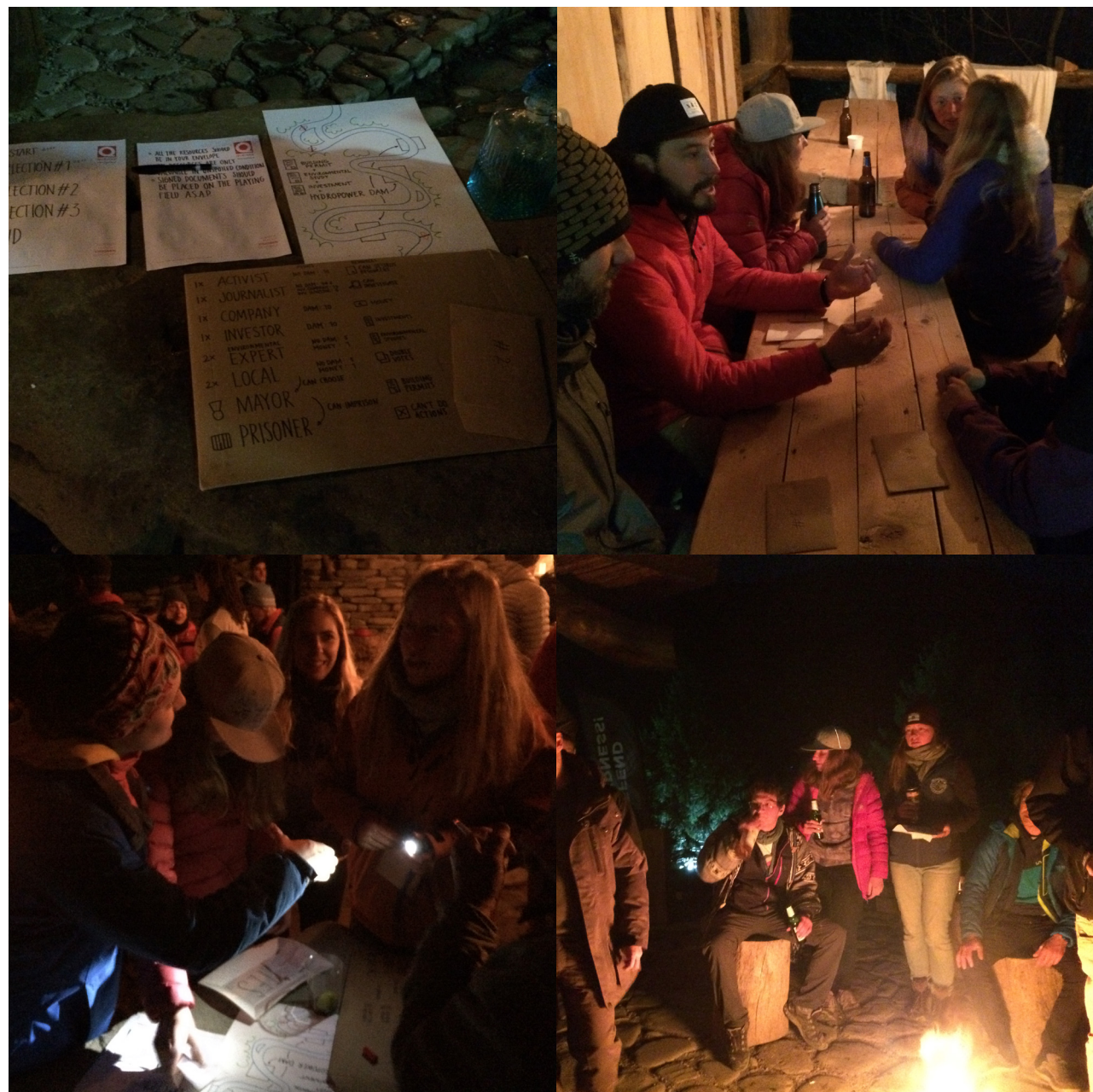


Figure 113:
Collage
User test
Prototype 4

J BRAINSTORM CARDS

The brainstorm cards are recreated from the cards used during an &RANJ workshop. The cards show various element of different well known games. The cards are used in several brainstorm sessions, in some cases in combination with the prototypes for brainstorm (Appendix X).

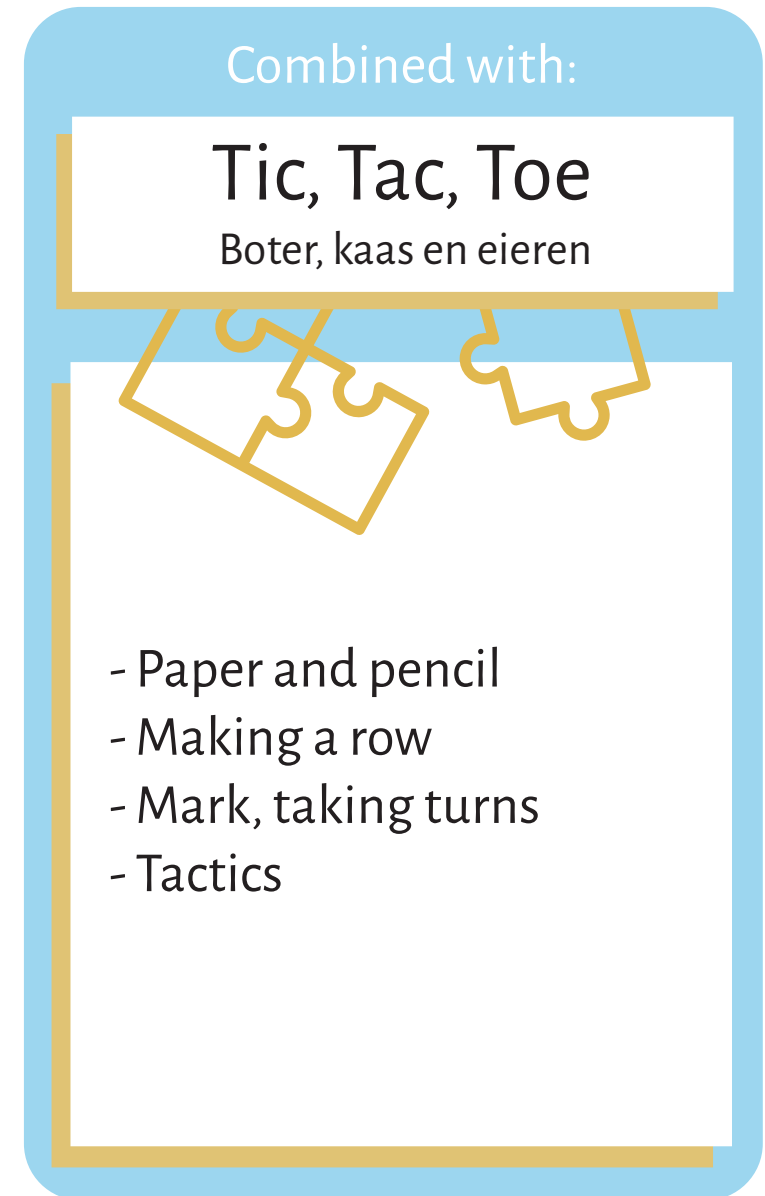


Figure 114: Close-up brainstormcard

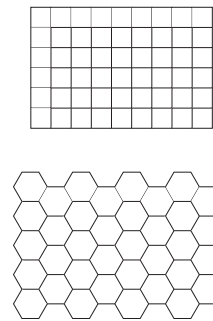


Figure 115: Selection of brainstormcards

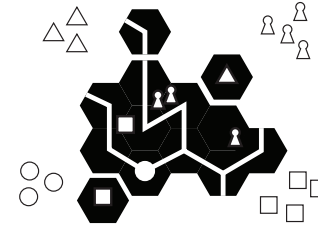
K PROTOTYPING FOR BRAINSTORM

Brainstorming, both with and without the brainstorm cards, proved to be insufficient in idea generation. A set of brainstorming tools specific for game design was developed and used. Prototype 0.1 was paper with different geometrical shapes that are regularly used in game design, and could be drawn on. Prototype 0.2 was a set black tiles and white pawns that could be drawn on and experimented with. Players could make up their rules, the effect of their pawns, and position of their tiles, while playing. Creating a dynamic environment for a brainstorm in gamification. Prototype 0.3 merely incorporated curved rivers on the tiles.

Prototype 0.1



Prototype 0.2



Prototype 0.3

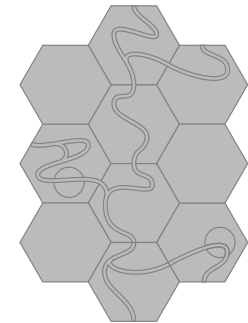


Figure 116: Overview brainstorm prototypes



Figure 117: brainstorm prototypes 0.2 and 0.3



Figure 118: brainstorm prototypes in use

EXISTING GAMES

Several existing games have been tested, analyzed and used as inspiration for the different game mechanics that have been chosen in the game. The most important were: The resource management, and top view playing field of Catan. The characters and elections from the Werewolves of Millers hollow. And lastly, the open world, and dilemma cards from Terra Nova.



Figure 119: Catan



Figure 120: Werewolves of Millers Hollow



Figure 121: Terra Nova

M STORYBOARD CHARACTERS

The complete storyboard (Chapter X) is derived from the Character storyboards (figure X till X). The character storyboards are directly derived from the Story (Chapter X) and inspired by Interviews, Observations and Literature.

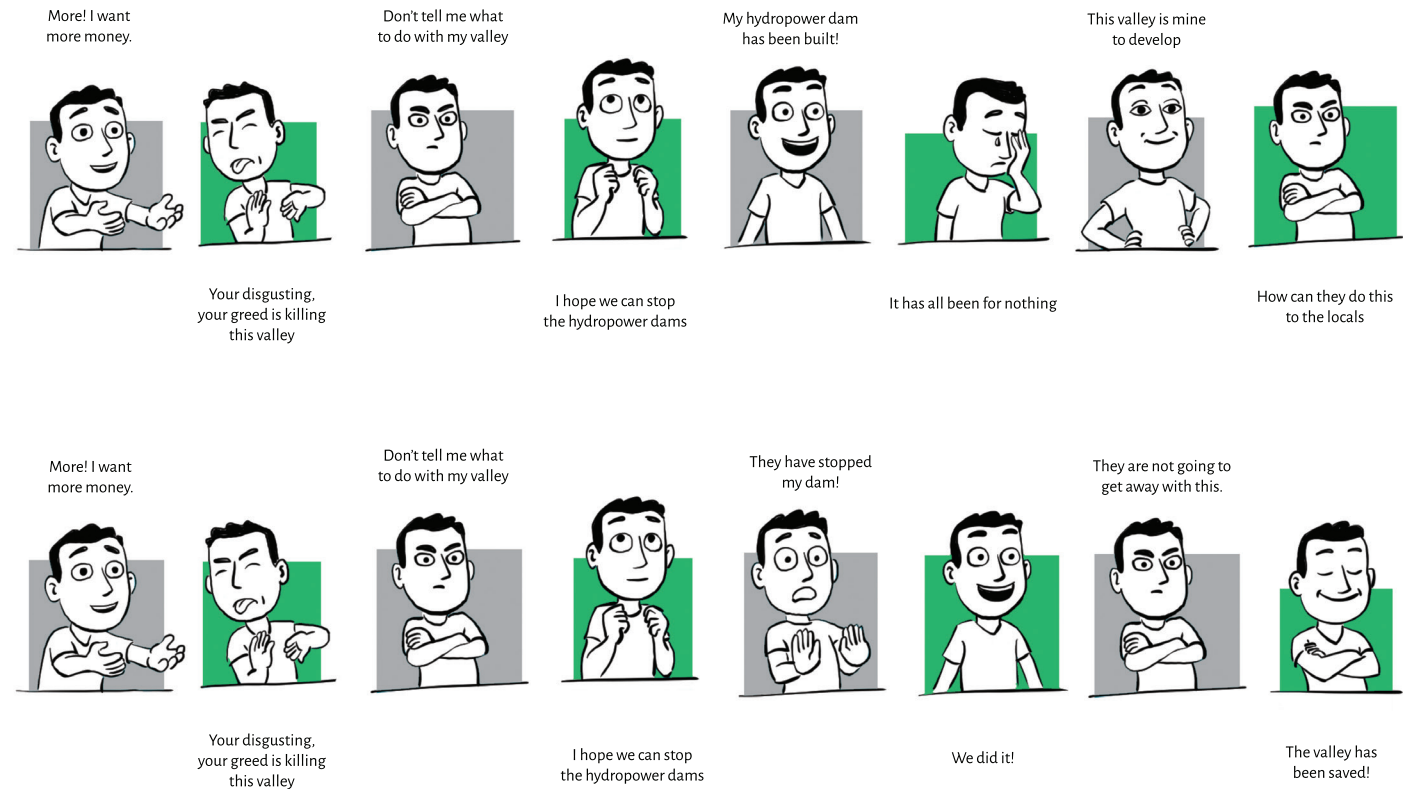


Figure 122: Storyboard of the Company and the Activist

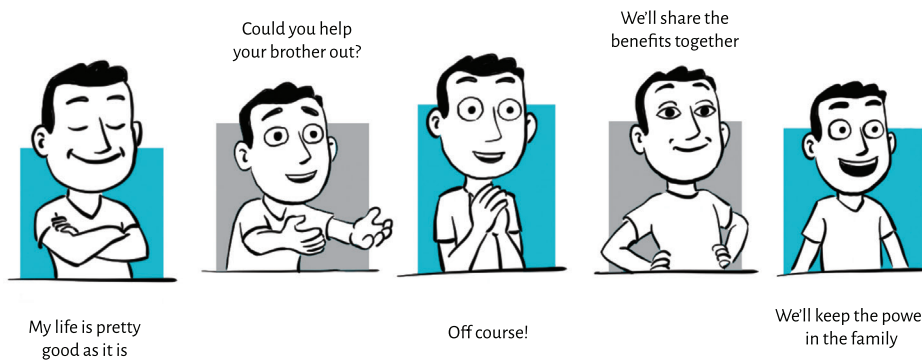
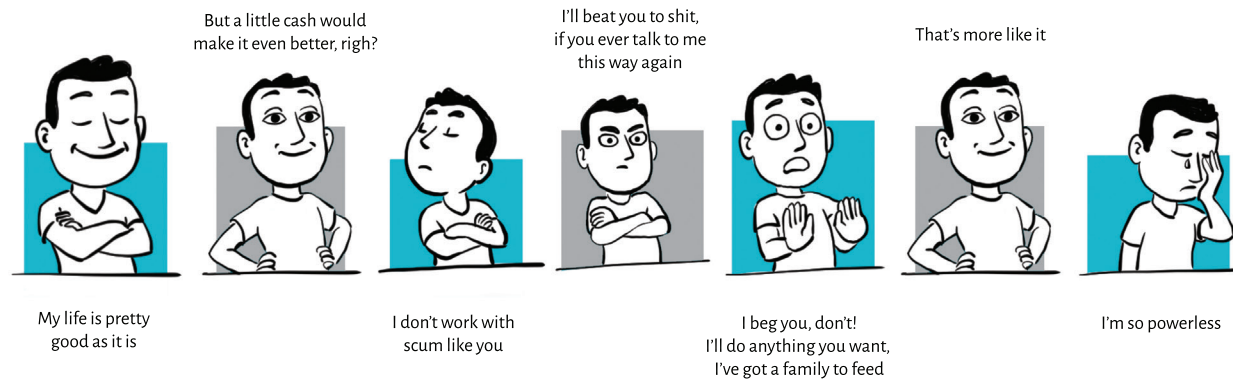
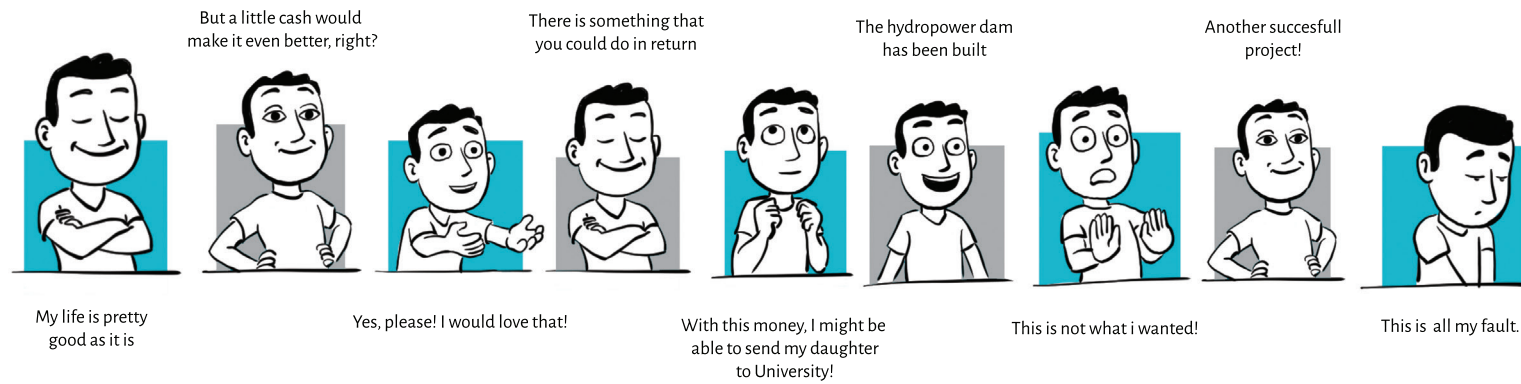


Figure 123: Storyboard of the Company and Local community

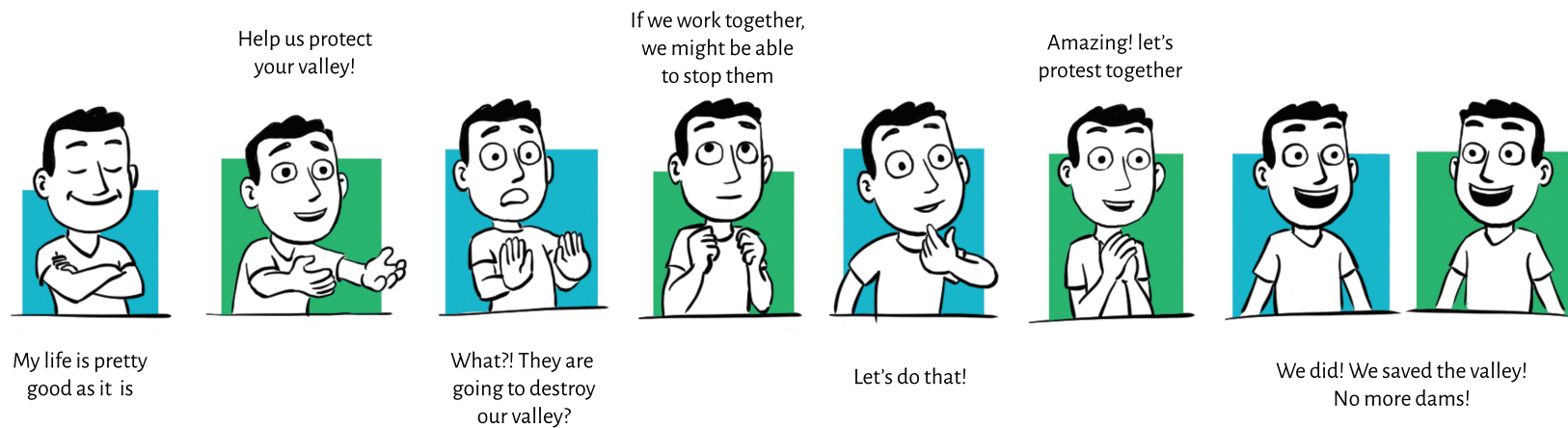


Figure 124: Storyboard of the Local community and the Activist

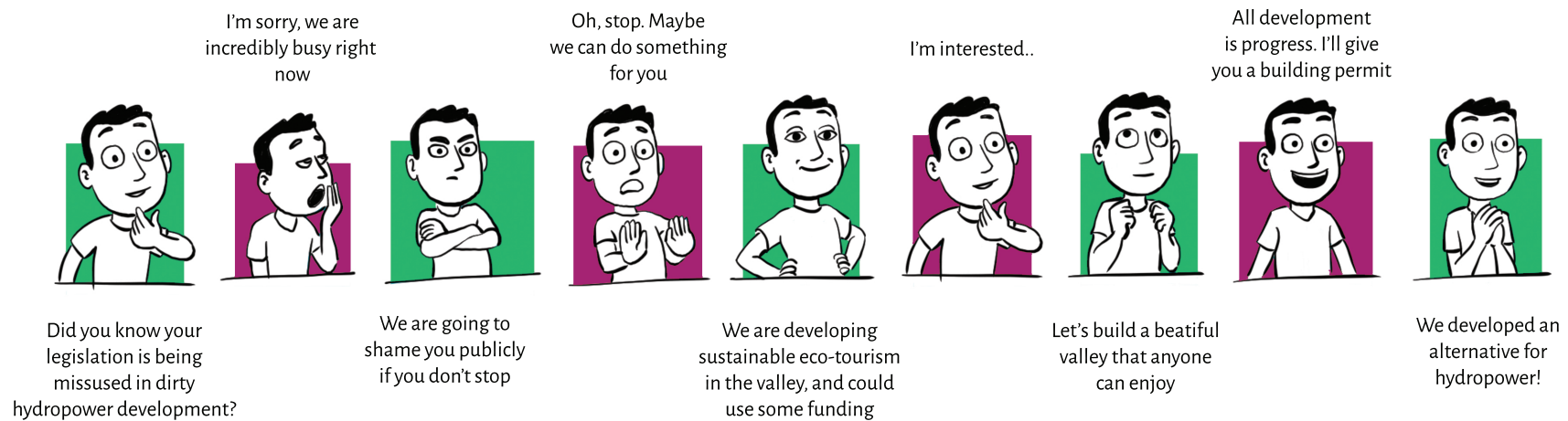


Figure 125: Storyboard of the Mayor and the Activist

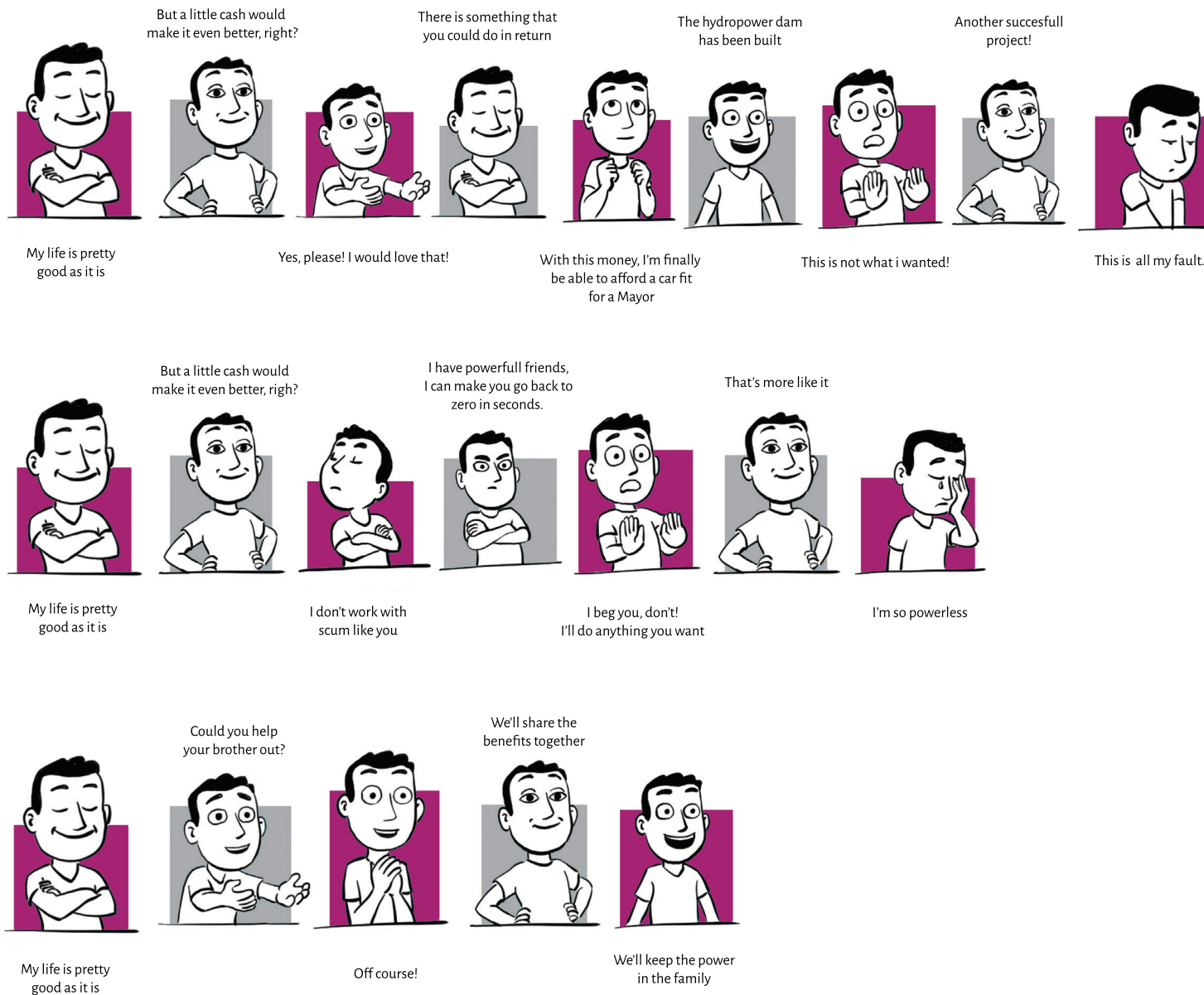


Figure 126: Storyboard of the Company and the Mayor

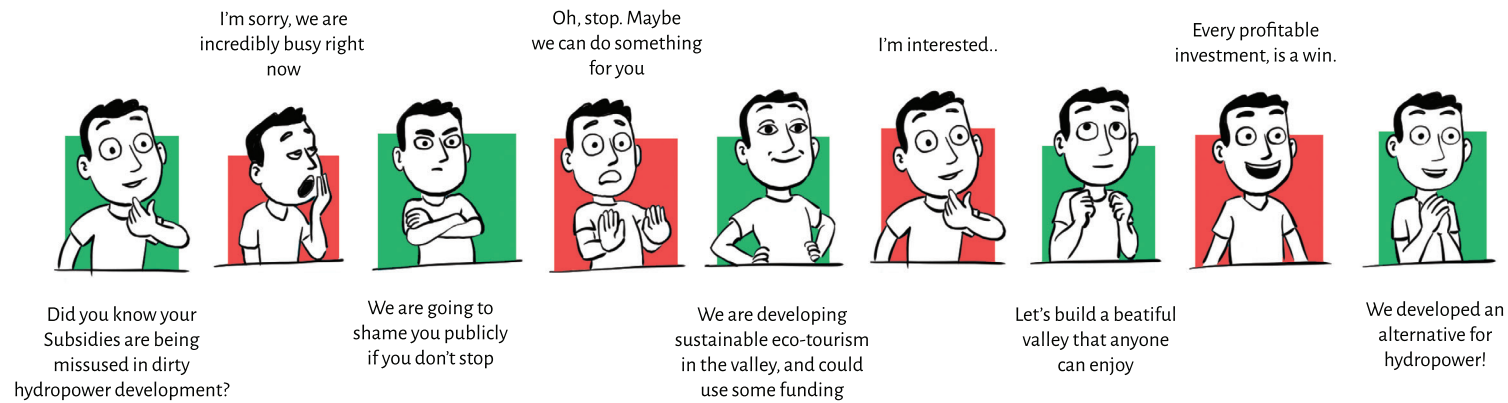


Figure 127: Storyboard of the Bank and the Activist



Figure 128: Storyboard of the Bank and the Company

N SOURCES STAKEHOLDERMAP

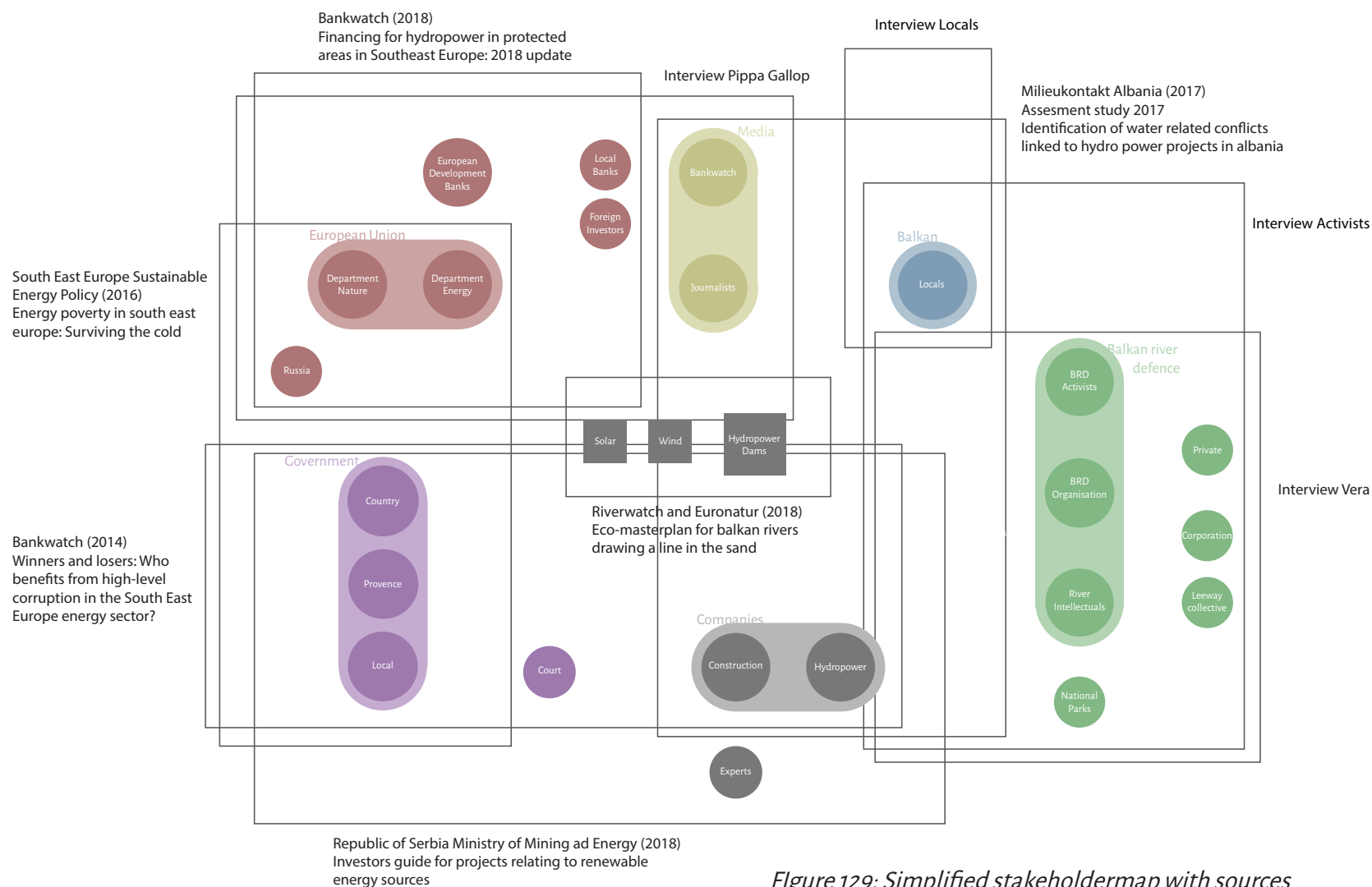
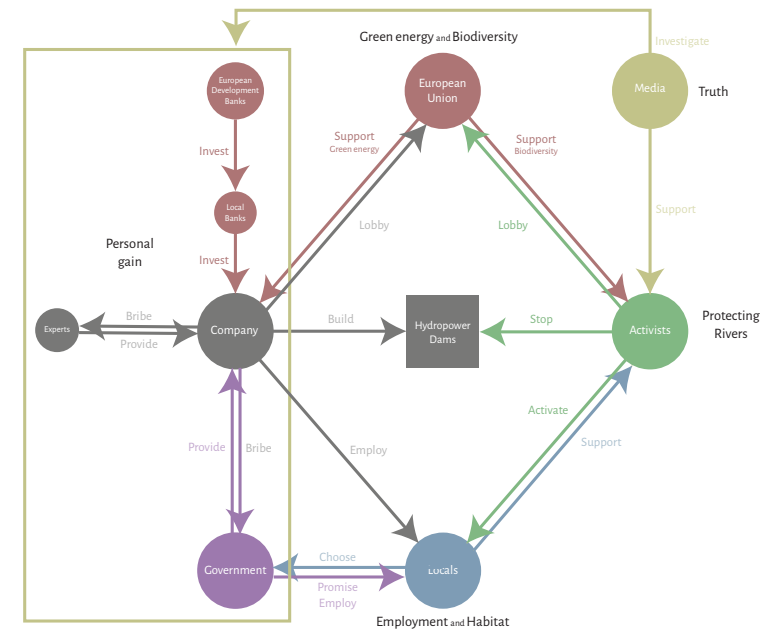
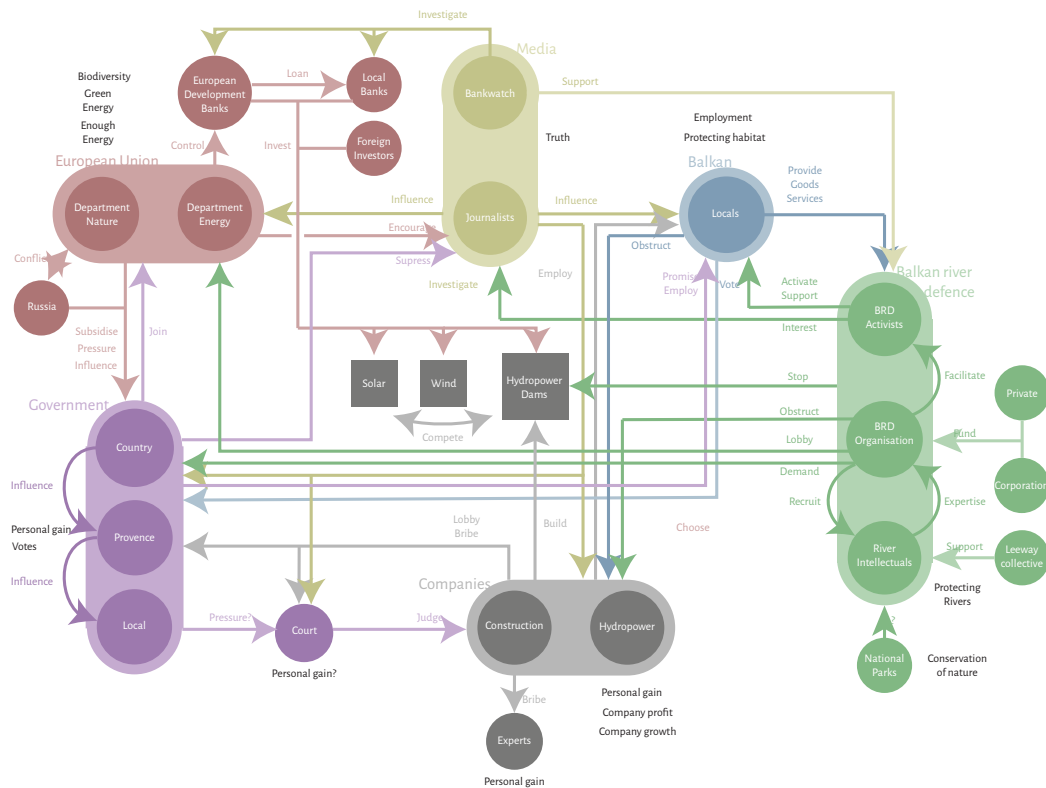


Figure 129: Simplified stakeholdermap with sources

ABSTRACTION STAKEHOLDERMAP



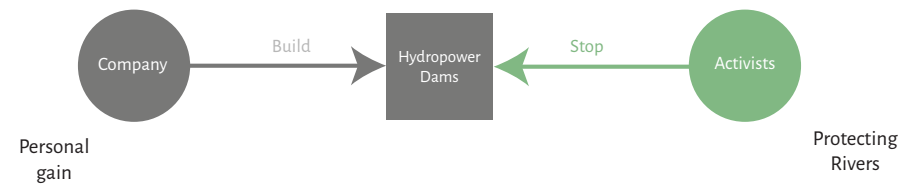
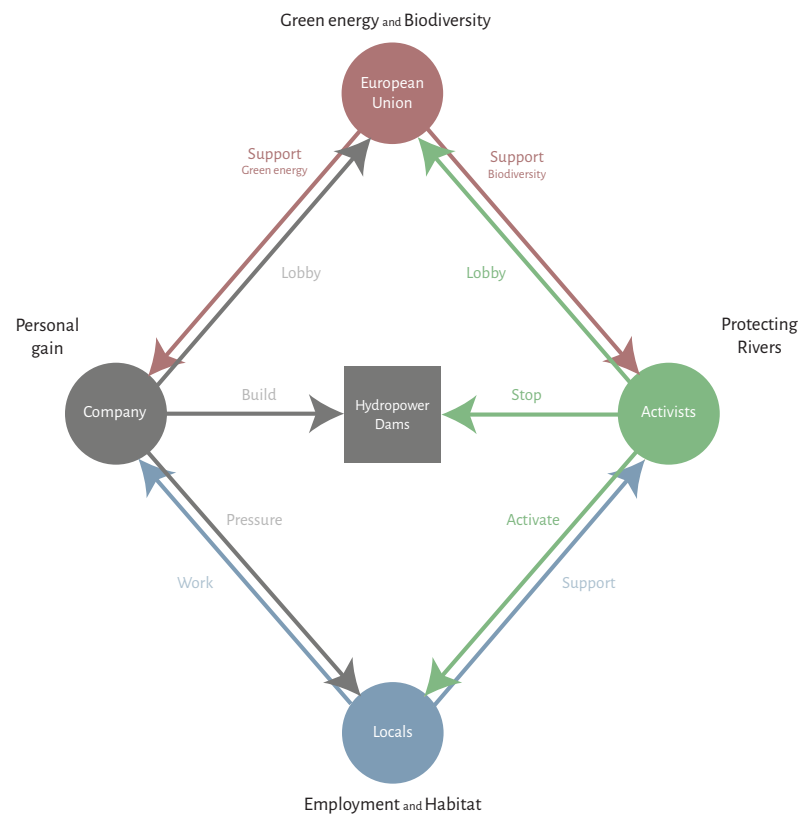


Figure 129: Abstractions stakeholermap

P GAME INSTRUCTIONS

Instructions given at the start of the game |

Dear players, welcome to your valley.

You will each experience the valley in a different way. For some it is the place they were born, some want to protect its beauty, others see the potential for its development.

Each of you has a character card in front of you. This will be you, for the rest of the game.

Note that each character has a corresponding colour. If something has that colour, it means that it has something to do with you, so you have to read it.

The character with the most points at the end of the game wins.

Now give this letter to the following players, and read it out loud

THE COMPANY

I am the Company. I come here to bring jobs and prosperity to the valley. We need a source of green energy, let us develop this place together.

Do this:

Take the grey tie in front of you, and put it around your neck. Show the valley you mean business.

Read the character and rule cards in front of you.

THE ACTIVIST

I am the activist, I come here to save this valley from the destruction of hydropower dams. We need to protect the local community, and the wilderness.

Do this:

Put two middle fingers in the air, point them at the company and scream 'no more dams!' (or something similar)

Read the character and rule cards in front of you.

THE BANK

I am the bank, I invest in viable and sustainable projects that generates a profit, and benefit the people. If you have an investment opportunity, please come and see me.

Do this:

Take the red tie in front of you, and put it around your neck. Show the valley you mean business.

Read the character and rule cards in front of you.

LOCALS

We are the locals. Our families have lived in this valley for generations. We live in our homes close by the river, which our grand-parents built. We love the valley we live in.

In front of you, you can find your 'household'. These are the parts of your world you call home. It consist of your house, the nature you live in and the happy memories you have of these places. You can extend your household during the game. The dots on the bottom of the card, tell how much points it is worth.

First, pick up the pawn on top of your home card, and put it in one of the three green circles on the board. This will be the place you, and your family lives.

Second, pick the memory card. Think of your happiest memory of the place you grew up, the house, the forest or the river. What you want. Describe that place and feeling on the backside of the card (square), and draw it on the front (circle). Read your card out loud to the rest of the players, and put the card in front of you (in your household).

Read the character and rule cards in front of you.

MAYOR

I am a local of this valley, but I am also the mayor. I promise to serve you, the people of the valley. I might be strict, but I am just. Together we will make this valley prosper.

Since I have made the laws of this valley, if any rule of this game is unclear, I will have the final say in the matter. This does not mean you can make your own rules, only interpret existing ones.

Do this:

Take the black hat in front of you, and put it on.

Read the character and rule cards in front of you.

LET'S START

Now you know who you are, it is time to name your river. Discuss with everyone what the name will be, and write that down on the black box on the top left of the board.

Before we start, two strict rules:

- No peaking the deck
- No stealing

Remember, if any rules are unclear, the ruling Mayor has the deciding vote

If everybody is ready, you can start the game by picking the top card of the deck. Each card should be picked by the character with the corresponding colour, and should be read aloud (except when stated otherwise).

Together you will determine the future of your valley. Good luck.

Figure 130: Game Instructions

Q OVERVIEW ELEMENTS

Element	Story	Emotions	Universal Needs	Game Mechanic
		(P. Desmet, S. Fokkinga, Human Experience Catalog, 2018)		
General				
Core values	There are a lot of groups of people involved with hydropower development. All have different opinions and core values.	See different characters	See different characters	Characters
Equality	Not all of the different groups involved, are treated equally, or have the same resources.	See different characters	See different characters	Characters have different traits.
David vs. Goliath	Fighting against hydropower development is an uphill battle, with unfair resources	Anger Hope		A-symmetrical gameplay. At the start, the character that develop hydropower dams are more powerful than others. At the end it is the other way around.
River	The river is the place of development, and subject of all the fuss.			The river is the playground
Development	The rivers of the Balkan are threatened to be developed. There are over 3000 plans for hydropower dams.			The core game mechanic, and win condition, is building dams. Players are either trying to achieve this, or obstructing it.
History				
Competition				
Hydropower Company				
Hydropower Companies	Companies are developing rivers. Not for sustainable sources of energy, but for greed.	Pride Desire Hate	Impact Acknowledgment	The Company character.
Construction Companies	Companies are constructing the hydropower dams. Not for sustainable sources of energy, but for greed.			
Local Banks	Local banks fund hydropower development, and share in the profit.	Pride Desire	Impact	
Foreign Banks	Foreign banks fund hydropower development, or fund local banks.	Desire	Impact	

European Union investment funds	European Union Investment funds, invest in hydropower development. But more often invest in Foreign or local banks. Making it hard to track the flow of money.	Challenge	Morality	
Corruption	The level of corruption in the Balkan differs between countries. Compared to the rest of Europe, it is generally pretty high.	Desire	Stimulation Impact	The company is encouraged to cheat
Bribing	Companies bribe anyone. Government officials, Mayors, Policemen.	Desire	Impact	The company is able to impact (influence) the government, local community and Environmental expert. The company starts with the resource: bribes
Nepotism	The power is kept within the family. Officers appoint people of their own family. These families can be found in both the government and companies.	Pride Love	Relatedness Security	Some players share their win conditions.
Violence	People who are not willing to be bribed, are threatened with violence.	Fear	Security	The company is able to impact (threaten) the local community
Fine	Anyone who is against the hydropower companies, can expect a visit of the police. People can get fined for made up stuff.	Fear	Security	The company is able to impact (punish) the local community
Employment	A lot of local people are employed by the government or energy company. They are highly dependent, and risk losing their job.	Anxiety	Autonomy	The government is able to impact (punish) punish the local community
Local Community				
Locals	There are a lot of people within the local community affected by hydropower development.	All the below	All the below	The Local Community character
Information	The local community is not informed about their valley's development.	Confusion	Acknowledgment	At the start of the game. The local community has less information than the other players.
Acceptance	The local community doesn't know better. People have grown up under communist	Reluctance	Autonomy	

	regime, and are not used to standing up to a government.			
Destruction of Habitat	A hydropower plant can flood the whole valley. The local community is forced to leave the home and village their ancestors lived in.	Anger Sadness Regret	Autonomy Belonging	Once a dam has been built. There is a negative feedback for the Locals, and a visual change on the playing field.
Media				
Investigative Journalism	Several journalists are investigating the corruption at big power companies within the Balkan.	Virtuousness	Morality	The Journalist Character, which can investigate other players.
Bankwatch	Bankwatch is an organisation which investigate suspicious flows of money. They believe public money should be spend on the benefits of the people.	Virtuousness	Morality	
Freedom of press	The freedom of press in the Balkan differs between countries. Compared to the rest of Europe, it is generally pretty low. There are cases known of Journalists being imprisoned, or even murdered.	Fear Hope	Impact Morality Autonomy	The Journalist character can be targeted by the government.
Influence	Journalism is influencing the people, by explaining what is really happening	Challenge	Impact	The Journalist can impact (influence) the local community
Government				
Democracy	All the countries of the Balkan are democracies.	Hope	Autonomy	All the players can vote for their government.
Social Democrats	All countries are ruled by the social democrats, old communists. The same people	Desire Reluctance		The company and acting government can impact (influence) (cheating) the election.

	stay in power, making it ill-functioning democracies. See: Bribing, Nepotism.			
Europe	All countries of the Balkan are members of the European Union, or candidate members.	Hope	Competence Acknowledgement	
Paris climate agreement	The reason that Europe invests in hydropower is to reduce the CO2 emission, stated in the Paris climate agreement	Challenge Reluctance	Competence Purpose	
European goals on biodiversity	Europe invests in plans to improve the biodiversity on the continent	Challenge Reluctance	Competence Purpose	
Activists				
Balkan River defence	Organisation which wants to stop hydropower development in the Balkan peninsula	Challenge Virtuousness Anger Nostalgia	Purpose Autonomy Morality	
Balkan River Tour	Once a year Balkan River Defence organises the Balkan River tour. The goal is to bring kayakers from all over the world together, to protest against hydropower development together with the local community.	Inspiration Virtuousness Energetic Reluctance	Impact Relatedness	An event that can be triggered by the activist
Balkan river tour Participants	People that want to fight against hydropower dams, and want to kayak, in varying degree.	Virtuousness Amusement Energetic	Belonging Stimulation Purpose	A resource that can be used by the Activist
Balkan river tour Media team	People that want to fight against hydropower dams, and want to shoot nice pictures and movies, in varying degree.	Virtuousness Inspiration	Stimulation Purpose Competence	
Lifestyle	Kayakers are dirtbags. Protesting is rock 'n roll. They are loud and drink beer.	Energetic Excitement	Autonomy Fitness	Encourage the 'Dirtbag' attitude for the activist
Guerrilla tactics	Balkan river defence wants to stop hydropower development by empowering the local community to make a stance. Organise	Energetic Excitement	Purpose Relatedness	The activist can impact (influence) the local community Bold colours of the game

	protests, kayak tours and clean-ups. Use graffiti and stickers.			
Free river fund	Organisation which helps local river conservation projects with funding	Challenge	Impact Purpose	
Riverwatch	Organisation which wants to stop hydropower development with research, reports and European funding	Challenge Envy	Impact	
Alternatives				
Eco-tourism				
Solar				
Wind				
Nuclear				
Biomass				-
Nature				
Biodiversity				
Environmental Impact Assessment Study				
Beauty of free flowing rivers				
Nature parks				
Natura 3000 sites				

Figure 131: Overview Story, Emotions, Universal needs and Game mechanics

R DEFINITION CORRUPTION

Corruption is a form of dishonesty or criminal activity undertaken by a person or organization entrusted with a position of authority, often to acquire illicit benefit, or, abuse of entrusted power for one's private gain (D. Kaufmann, P.C. Vicente, 2015).

To put it easy, corruption can be explained as unfairness in decision making. In every decision several arguments have different weight. One might argue which arguments carry the heaviest weight, but the pro's and con's are clear. In the case of corruption, this is disturbed.

In question of developing hydropower (picture X), one should ask themselves what is more important: The impact on biodiversity, the negative impact on the community and the availability of alternatives, or the necessity of renewable energy and the positive impact on the community

Often, but not always, this should results in no hydropower development. The corruptive argument of personal gain however, makes the balance often scale to the side of hydropower development (picture X).

Personal gain can come in many forms. Money, Products, Favours or Power for oneself, their friends or family.

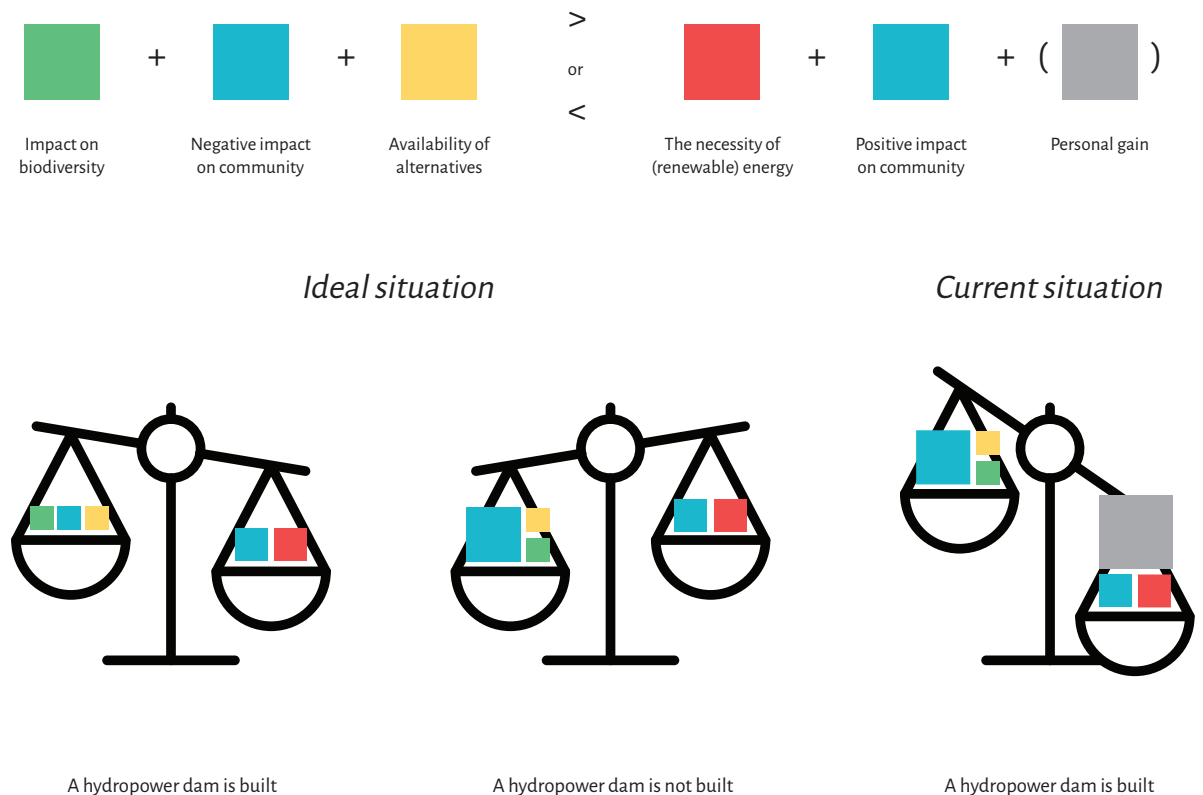


Figure 132: Corruption illustrated

S VISUAL STYLE AND COLOUR STUDY



Figure 133:
Study visual
style



Figure 134: Colour study 120

TEVENT CARDS AND PLAYING FIELD

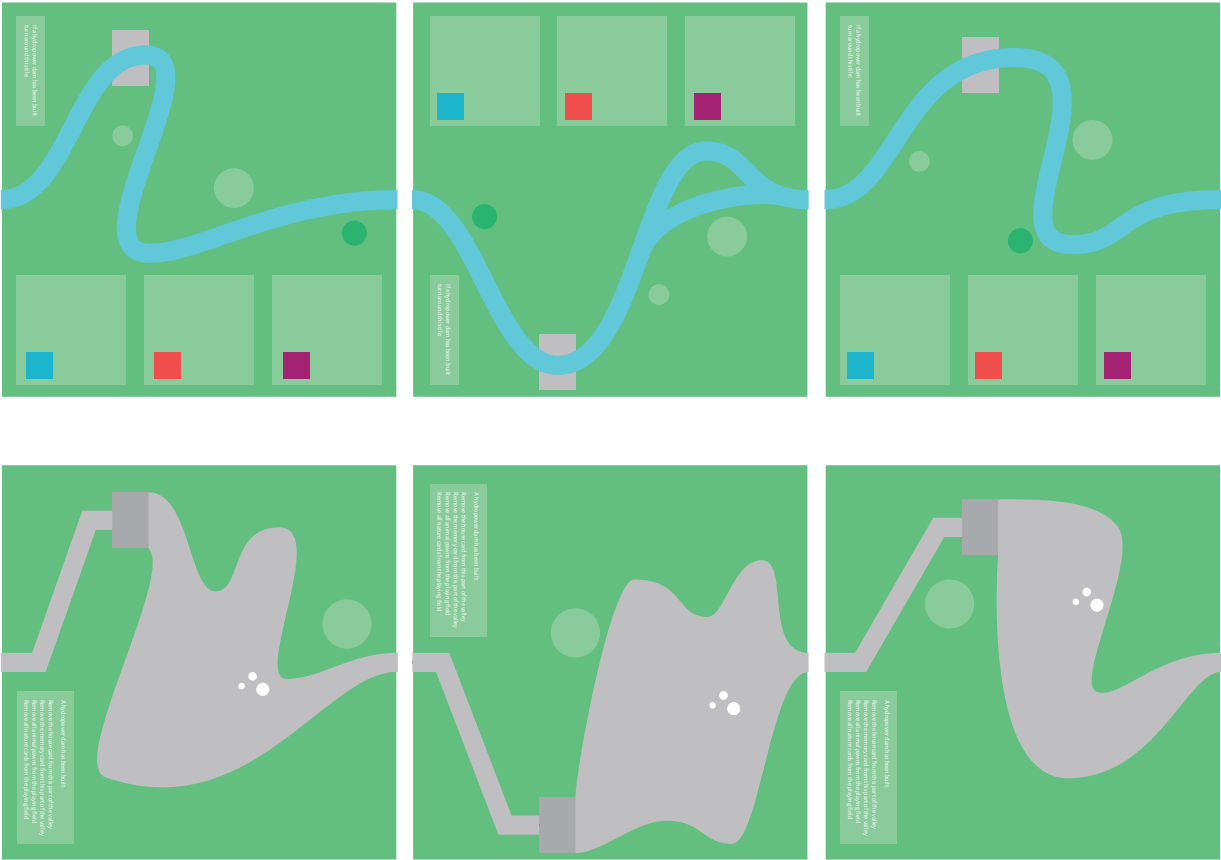


Figure 135: Playing field

1

MAYOR

The municipal office is in need of a new secretary. Which of the locals are you going to hire?

The mayor can change the owner of this card for an infinite amount of times.

SECRETARY



The owner of this card will be paid 1 money each payday + 

1

MAYOR LOCALS

You live in a democracy, and every four years, a new mayor is chosen. Who will be the next mayor? What are his/her plans for the future of the valley?

CAMPAIGN



In a few turns, You will choose a new Mayor. Who is going to participate in the election?

1

COMPANY BANK

The future of your company might be in danger. Are you willing to beat someone to shit for the good of the company? Be careful, some might say a culture of violence isn't a good climate for long term investments.

DON'T READ THIS ALOUD
A threat can be just as effective as the action

BEATEN UP



If this card is given to you, You have been beaten up pretty bad. Until you can pay the hospital bill, you can't perform any actions

   -  

1

LOCALS

There nothing for you here anymore. A lot of young people are leaving the valley, hoping to find a better future. Are you leaving as well?

LEAVING



Discard all household cards, and put this card in their place. You no longer partake in this game 

1

MAYOR LOCALS

The day is there. You can choose who will represent you for the next four years. Did the old Mayor do his job, or is it time for a change in government?

ELECTION!



Everybody writes a name on a piece of paper and gives that to the (old) Mayor. The local with the most votes will be the next Mayor.

1

MAYOR LOCALS

Disobedience needs to be punished. Who cares what really happened?

PARKING FINE



Your car has been parked wrong. If this card is given to you, you have to pay the fine. Right now. - 

1

ACTIVIST MAYOR

The activist comes with an interesting proposition. A lot of people might be willing experience the beauty of your valley, once the facilities are there. Are you, the mayor, going to encourage eco-tourism?

ECO TOURISM



When this card is put on a building permit spot the playing field. Eco-tourism can be developed there, with an Investment

1

MAYOR BANK

The future of your valley might be in danger. Are you willing to lock someone up for the good of the valley? Be careful, the bank will say that bad prest is bad for business.

IMPRISONED



If this card is given to you, You can not perform any actions. Also minus three points for the bank - 

1

MAYOR LOCALS

Disobedience needs to be punished. Who cares what really happened?

SPEEDING TICKET



You have been caught speeding. If this card is given to you, you have to pay the fine. Right now. - 

1

ACTIVIST LOCALS

There are plans to develop the valley. Activists are coming to protest against the hydropower dams. Are you going to join the activist in their protest? If you do, the mayor should think twice before he/she agrees to grant a building permit.

PROTEST!



As long as one of the locals is willing to protest, this card can be placed on a building site, preventing a building permit to be put there.

1

COMPANY LOCALS

*DON'T READ THIS ALOUD:
This promise is empty, and this card invalid. You can control the dam with your smart-phone, but they don't have to know.*

JOBS!



The owner of this card will be paid 1 money each payday + 

1

ACTIVIST LOCALS

Tourism provides jobs for the local community. Who are you going to hire?

JOBS!



The owner of this card will be paid 1 money each payday + 



Figure 136: Event Cards

U PROJECT STAKEHOLDERS



Balkan River Defence (hereafter abbreviated as BRD) is the organisation that arose from the Balkan River Tours. Their main goal is to help local communities in the struggle for conservation of their valley. Raising awareness by kayaking as much rivers as possible and organising protests. They organise meetings with the local government, and try to show them the potential of eco-friendly tourism.

When we were drinking rakija and camping with the locals, they (Riverwatch, WWF) were sleeping 40 kilometres from her, in some fancy four star hotel.

- Rok, BRD founder

In comparison with other NGO's, the philosophy of Balkan River Defence is to actively involve the local community, instead of focussing on 'reports and numbers'. They want to make them understand how beautiful their valley is, what they're about to lose, and how to stop that.

'DIRTBAG' ATTITUDE

Balkan River Defence wants to show that river conservation can be Rock 'n Roll. They aren't what one might call 'regular activists'. Organized protests are a way to keep in contact with fellow kayakers, and often followed by a social gathering, including locals. Kayakers can be pretty in-your-face, they are self-proclaimed 'dirtbags', which can be perceived as obnoxious by other kinds of activists.

'We're fucking dirtbags. Kayakers that don't shower, that drink beer and are loud'

- Rok, BRD founder

Ways of protesting involve stickers, graffiti and protest signs. But more importantly, they show their vision and attitude with superb handling of both the regular-, and social media. Everything is photographed and videotaped professionally and distributed to Social media, newspapers and local radio stations. This has also resulted in a self-made award winning documentary.

This English girl started dancing through my friends performance, and people were laughing at it. I thought that was pretty disrespectful. I support their (BRD) goals, but they are just not my people.

- Volunteer, Let's do it Romania



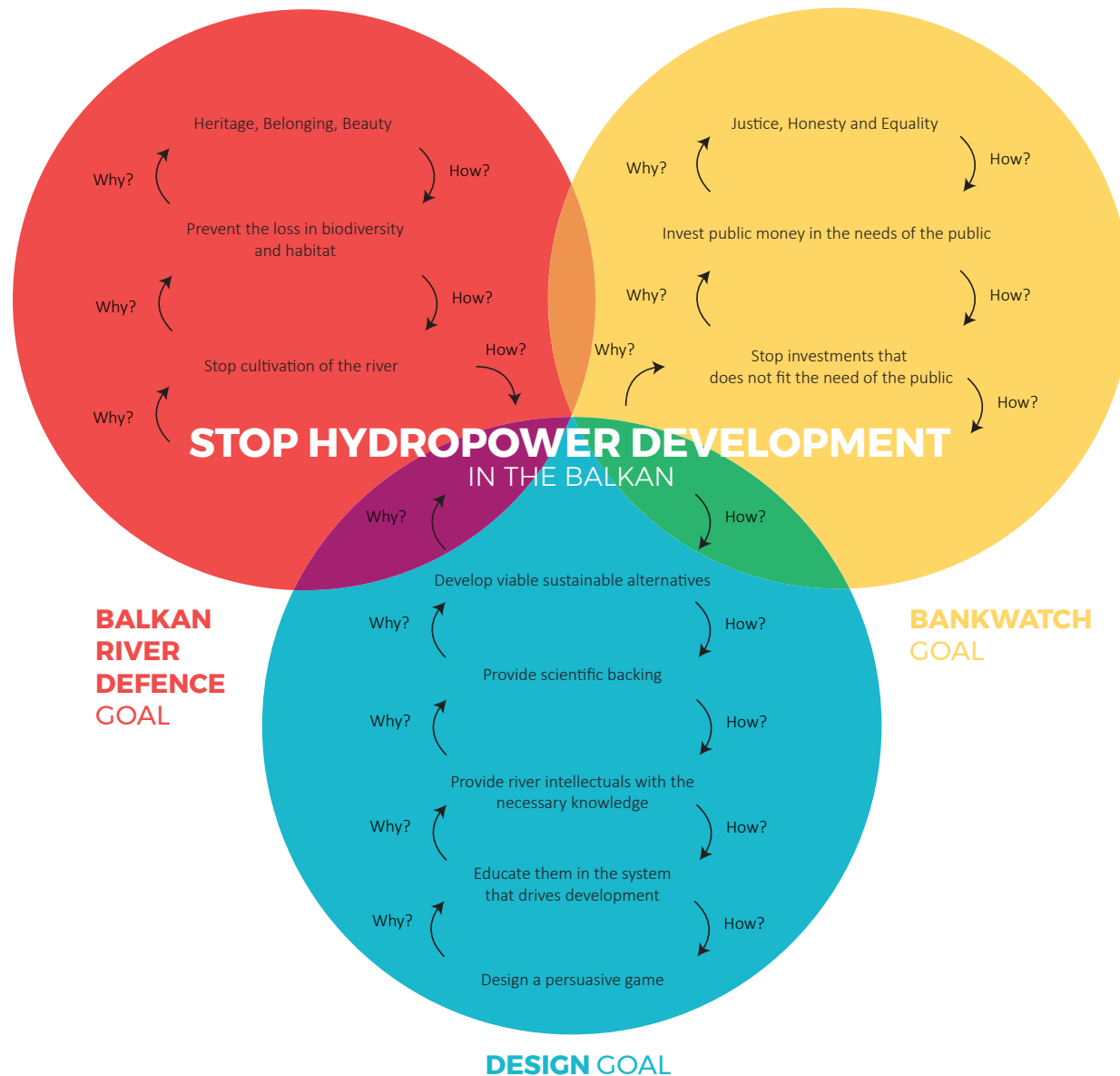
Bankwatch is an organisation that exposes the risks of international public finance and brings critical updates from the ground. They monitor public finance institutions that are responsible for hundreds of billions of investments across the globe. The banks and funds they watch are often obscure but always important entities that function outside public scrutiny. They believe that the billions of public money should work for people and the environment.

As the largest network of grassroots, environmental and human rights groups in central and eastern Europe, they work together with local communities and other NGOs to expose the influence of these banks and provide a counterbalance to their unchecked power. One of the NGO's they work with together, is Balkan River Defence, and they have agreed to help in this project.



It is a growing network of students and professors that see more value in the free-flowing rivers than only kilowatts. Each working on their own discipline, their combined story shows the widespread impacts that dams can have. The network enables students to understand the bigger picture, learning from peers from different disciplines. The goal of the network is to exchange ideas that will have an impact on preserving wild, free-flowing rivers. Disciplines involved range from Water Management to Anthropology and from Political Sciences to Tourism. An unsolved question in one research field can lead to an answer in another field. Where Balkan river defence uses kayaking as a means of protecting rivers, the River intellectuals use their knowledge.

By doing this project I am using my knowledge for river conservation, making me a River intellectuals as well.

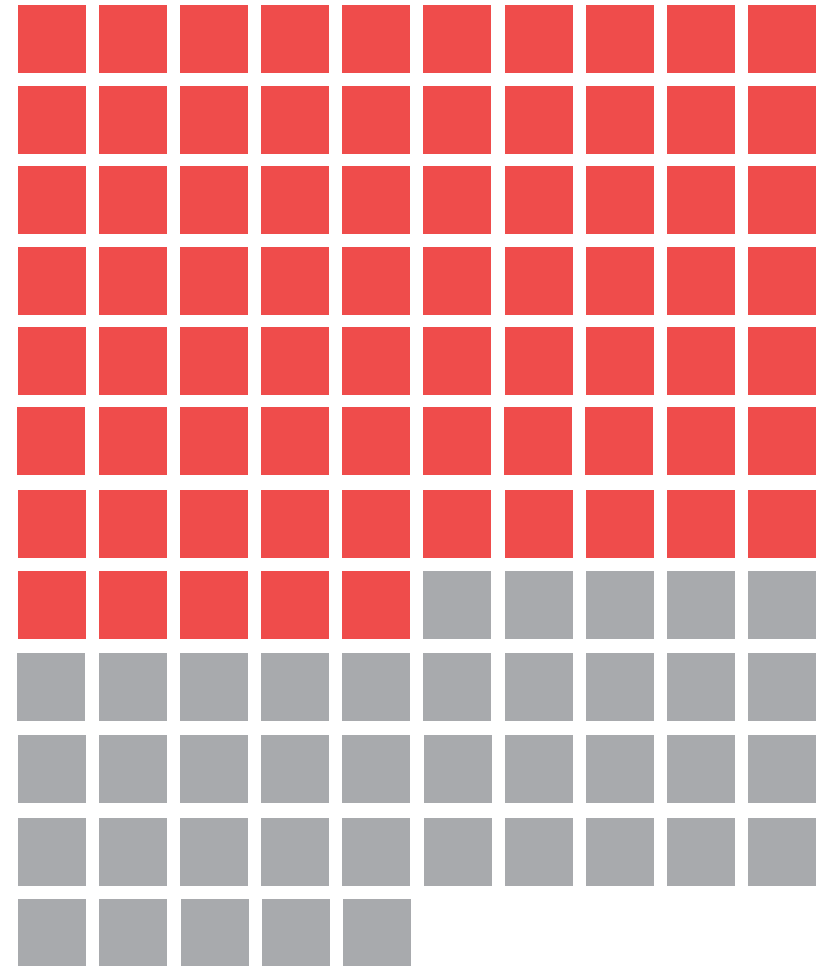


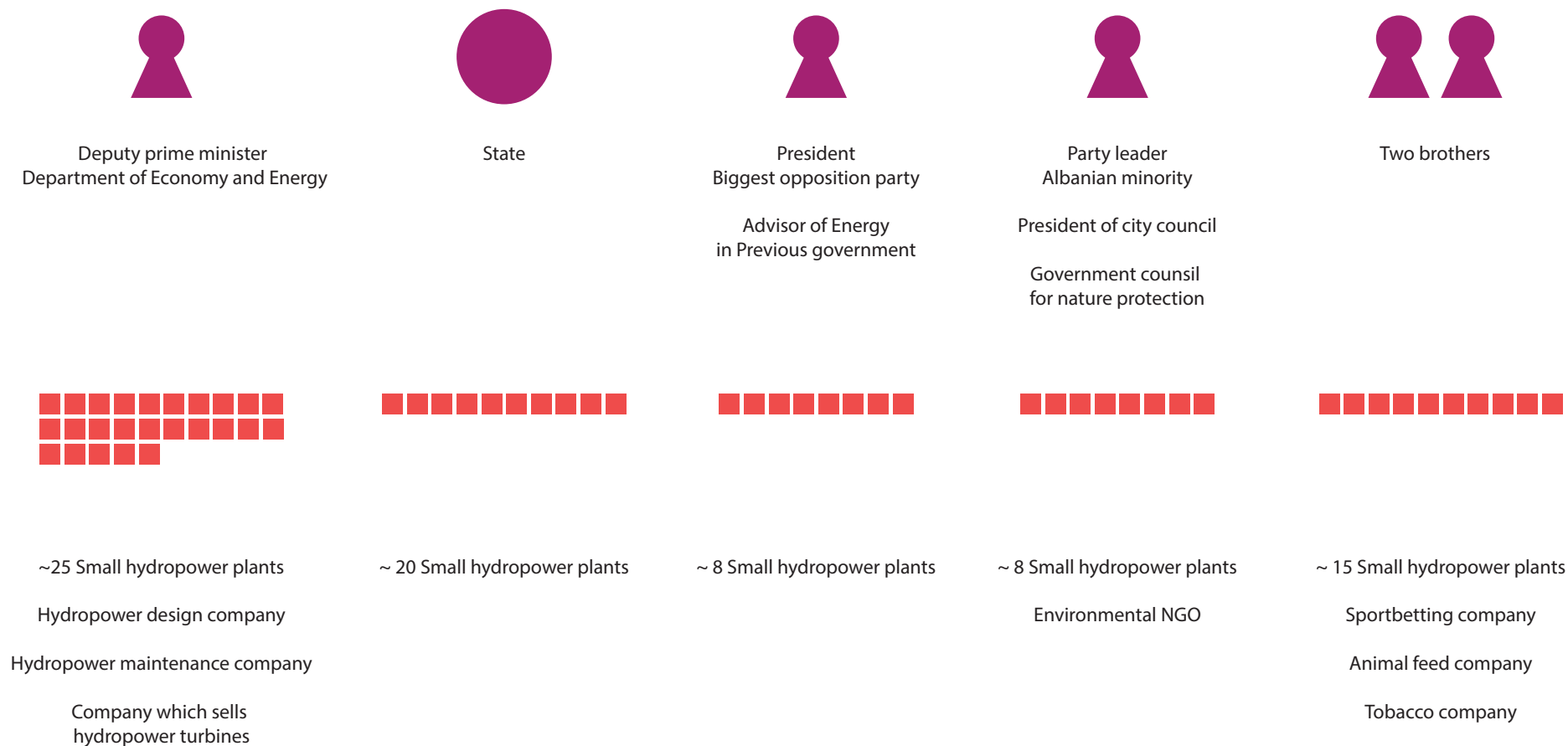
Picture 137: Combined design goal abstraction for the project, BRD and Bankwatch

SCASE STUDY NEPOTISM

North Macedonia (former Macedonia, the country changed its name recently) has a total of 115 Small hydropower plants). The majority of these (75 out of 115, figure X), are owned by only a few people. Wealthy, powerful, and either political, or politically connected. For instance, the Deputy prime minister of northern Macedonia, which is head of the department of Economy and Energy, owns around 25 Small hydropower plants using an umbrella company. These small plants are only feasible due to heavy subsidies, and a set price at which energy can be sold. You can guess who makes the legislation about these subsidies. Exactly, the department of Economy and Energy, of which he is the boss. Other small hydropower projects are owned by the state, a minority leader, or the president of one of the opposition parties. All these plants are, however, constructed and maintained by the same company, which is, surprisingly, owned by the deputy prime minister. 15 different hydropower plants are owned by two brothers, who made their fortune in sportsbetting and tobacco, and are supposed to have ties with the mafia. Worst of the story is that, one of the environmental NGO's, which is supposed to protect the environment, is owned by the minority party leader. This organisation has actively stopped the creation of national parks, in favour of hydropower development.

~ 75 / 115 Small hydropower plants in Northern-Macedonia





Picture 138: Macedonian hydropower dams and owners