Climate Game

General information

The game structure is chosen to contain a mixture of different elements, taken from games such as Risk, Civilization, Populous, Transport Tycoon, Sim City.

The game has to focus on a target group of youngsters between 12-26 years of age.

As was discussed; the game is to be developed as a "web based multi user game ", which means that it is a game which has several players and is located at a specific URL. The chosen language is English, as it is thought that the people targeted understand sufficient English to comprehend the information as provided, and perhaps the English can even have an added effect at an educational level, in helping children to understand and learn English as well as playing this game.

Game Play

The players in the game can choose an area on the world to represent a specific cultural area of the world. This means that when a player chooses a country, such as china, this player does not only play china, but this country is representative for this area and hence the country represents the area of the world it is located in. In this case china is the example for the whole of south east Asia.
Still under consideration is the amount of players which have to be included in one game as a representing a part of the world.

The countries under consideration are:

- China
- America
- Europe
- Middle east
- Russia
- Indonesia
- Africa

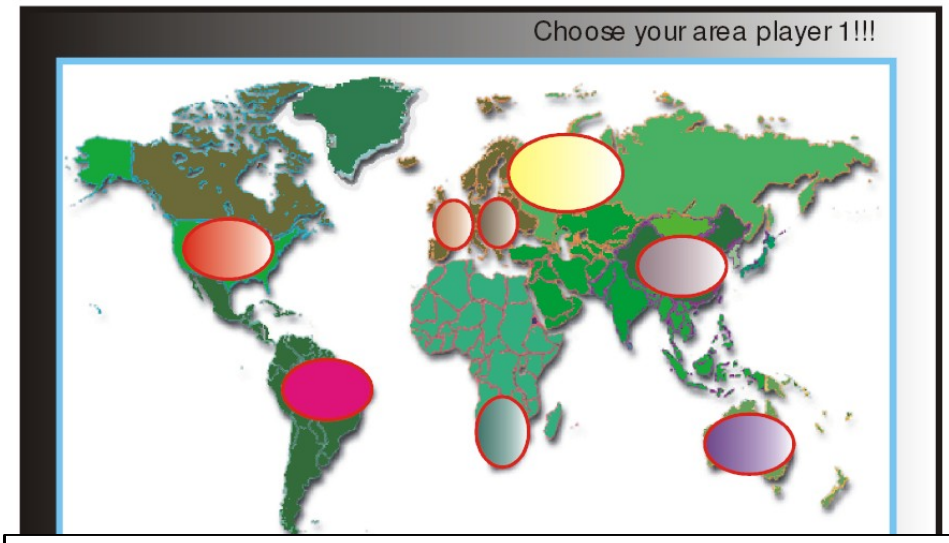

Fig 1: Example of screenshot when choosing an area/ country to play.

The option of entering the game has been proposed via a “sandbox qualification”. This implies that the player has to prove him/herself in an area outside of the game, in order to participate in a running model/game. The idea is to have several games running simultaneously on one website. Once through the initial “sandbox stage” (which can be used to teach the players the operations/aim of the game) the player can choose on running game which has still has room to accommodate this player (to visualize this we can choose a forum like structure, showing which games are running, how many players are presently participating and what the difficulty level is of the running game).
When the player decides to quit the game, there should be a possibility to introduce an A.I. user, thus providing room for the game to continue.

Game Play
Objectives:
There are several options when a player enters the game. Either the objective of the game is generated randomly and the player has to fulfil this objective to end the game, or the game ends when “the world is in equilibrium” and the player is still in the saddle as “ruler”.

Other ways in which the game can end, in a bad way, are:

- Sinking of the ‘island’
- Natural disasters destroying the island/world
- Rioting inhabitants when the chosen policy is too soft
- Coups of the industry; via scandals perhaps
- Diminishing or failure of crops, causing starvation.

When the player enters the game, this should be at a fixed starting point with fixed conditions for the model to run, such as the conditions as they were when the first IPCC report was presented in 1996. This information gives the boundary conditions of the game.
Furthermore, the climate sensitivity can either be at random, or at a fixed level. Both provide a means to set the difficulty level for the players. Other factors usable for setting different difficulty levels are either the “hockey stick scenario” (by choosing one of the different predicted scenarios) or by including the area which was chosen by the player. (e.g. when one chooses Africa, different boundary conditions apply than when one chooses America.)

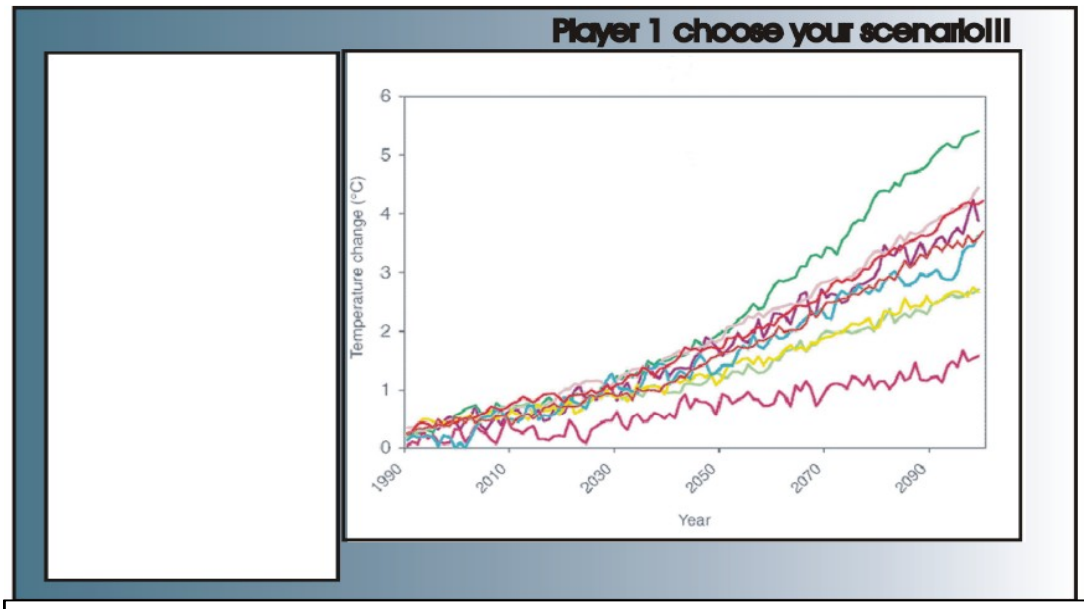

Fig 2: proposed screenshot when using the hockey stick scenario. The open text area on the left can be used to explain in layman’s terms what the different scenarios envision. Possibly even provide links to the specified scientific inforation.

When the player enters the game, a small ‘historical’ film can be shown (composed of our own collected materials/animations) to familiarize the player with his/her chosen country. This could be accompanied by a voice over, stating the goals of the game, the players role in the game and it’s objectives. A (rather silly) example of text is given below. The film could start with the general stuff of the country, and gradually shifting towards a film which has more and more images of climatic events in the country, eventually ending with an anchor man who interrupts the film. He gives a short update on the current situation in the players country, and the game begins. After this film, the player sees his/her area, represented in a graphical way as an “island”. (see figure below) The area should represent several geographical features such as the ratio nature : housing : industry, dependent on the area which was chosen by the player.

Example text:

“You are the leader of a nation, a leader of men. And in these troubled times you have to be brave and just to lead your country into the next era, setting an example for the rest of the world. The aim of the game is to obtain the most neutral state for your country, thus providing a healthy life for your citizens. There are some clouds gathering at the horizon however, as the world turns and turns and your nation prospers, it would seem that you are not alone. There are other capers about!! And to make things worse, it would appear that you will have to share the world’s riches with them. But can you manage your country in these changing times? To aid you, you are provided with advisors, wise men who have all have undisputed reputations in their field of expertise. You however, have the final choice in the path your nation chooses to follow. Now the people call upon you once more, to be steadfast and righteous, and to provide the future for all generations to come. “

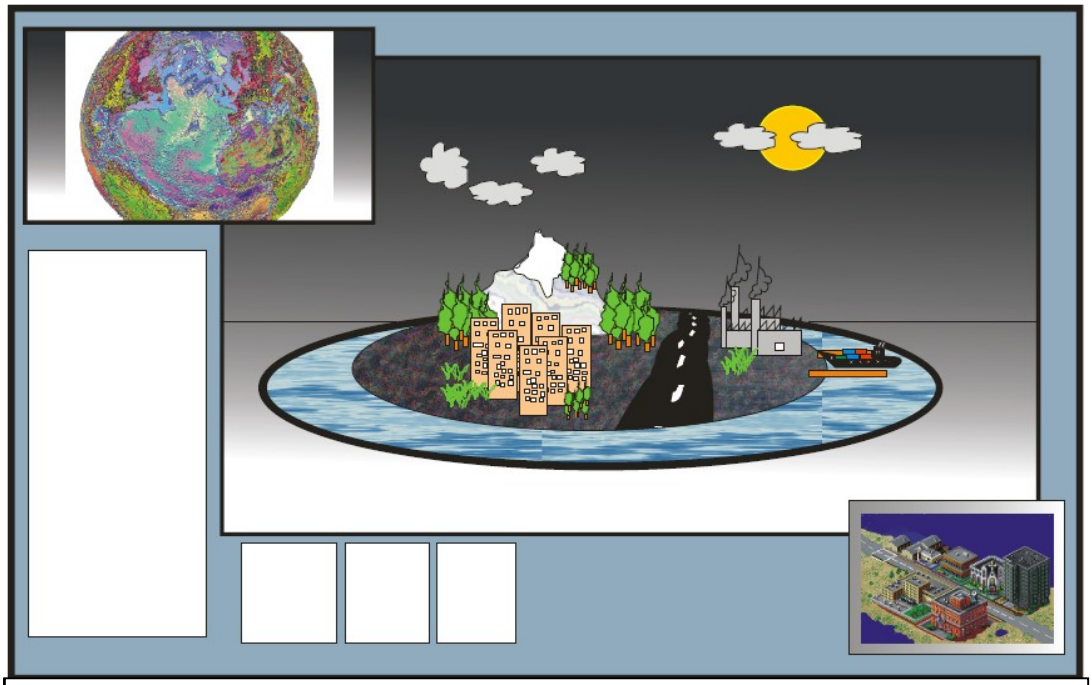

Figure 3: Screenshot of the island avatar. The globe above could perhaps be rotating, showing the players location as well as the disasters location (such as storms). The open text area on the left can be used to explain different information, or for pull down menus. The areas underneath can be used as representatives for the welfare of the people, the amount of pollution in the land and other important issues. The Figure depicting a city was originally intended to zoom into a small scale menu of the game, but can easily be changed into a “decisions menu”.

The player then start to participate in the game following turns. The idea is as follows:

The players all have to do several and a number of things in one turn. They have to make their decisions, meaning to invest in their different areas (knowledge, industry, resources, happiness, protection). After this the calculations are made by the model, taking into account the climate sensitivity (the response of the climate to varying forcing mechanisms).

A very important aspect for the players should be the constant wager between 'mitigation and adaptation'. I.e. this implies the constant choice of a player to either invest in reducing his/her emissions or investing in durable fuels or science development, or to choose a turn of adaptation in which he/she chooses to ignore the prevailing protocols/climate governing and instead decides to invest his resources into the development of ,for example, dikes.
To enforce this decision-making process we can use the changing climate, via rising sea levels, flash floods and more thinkable disasters, these changes can either be at random (to force players to change path) or induced due to the decisions that the player makes.
This is all changed in the decision phase.

One aspect during the game should be the acquiring of "power". The amount of power is measured through the skills of the player to maintain his/her expertise on all levels of the climate game. (vu climate star??). The idea was to implement these capabilities in a sort of quiz like structure. The most logical way to include this element is to incorporate moments in the game where the player has to justify his/her decisions in a press conference (game induced player test) or via a voluntary quiz when the player thinks that he/she is ready (self induced player test). Both tests, when passed give a player more power, either via easier access to resources/technology/money/knowledge, or through an increase in the score. Or both. Where and how the aspects of knowledge en emissions and such are incorporated in the game is still to be ascertained.
Either way: one way to visualize the self induced test, is to build a structure where the player can take these tests. For example, libraries can be used to gain knowledge, but cost so and so much. When the library is built, the player can access more scientific papers, learn more about the climate changing, about social-economical coherence within this subject and so on. Likewise, building a press conference room/ town hall, gives way to calling and giving press conferences, in these sort of structures. These are all ways to incorporate the mitigation/environmental friendly choice of game play. However, we also want to have a scenario in which people, when devoting too much resources to science/education/ mitigation, start to complain about this chosen path. Even worse, devoting too much resources in environment can cause the player to become more vulnerable for the "more fragile" sectors of the game.
Given the fact that we want to put the player into a position of ruler, a logical step would be to include the food supply and wellbeing of his/her inhabitants. So in short the pattern in the game should break down to this: using too many resources for research, crumbles the infrastructure, threatening things as agriculture, water, biodiversity, happiness of the people). General disagreement of the people.
The areas we can think of what could be seen as the more fragile areas in an adaptive or environmental way are:

- Water scarcity
- Decrease in biodiversity
- Drought/Flooding
- Change in Vegetation
- Heat waves
- Urbanisation
- Manure, oil, nitrification -->pollution of the soil
- Usage of fossil fuels

Game and climate modelling.

The game uses randomly generated natural disasters, so a coupling between the calculated data (players actions) and the random data (model parameters) should be incorporated. These need to be visualized and can be used to show that climatic effects some times have thresholds, after which the system does not react as predicted.

Player – player interaction.

The game will most likely be a multiplayer web based game. Player to player interaction is therefore desirable, this can be achieved via a chat like interface, giving room to trade/sell resources (perhaps via an emissions stock market?), forming pacts between countries/ players, political messages (spreading false info, playing one side against another). All this should be a separate part of the game for the players to interact, send messages, and so on.

Interactive films.

The main goal of the films would be to serve as learning material. Being either interactive or not, it can be used as a means to visualize the changing climate, the different learning scenarios or even the natural disasters. Furthermore the interactive films can be used to their full potential when considering the game induced player tests, such as the press conference.

In general, this is the outline sofar, more in-depth exploring has to be conducted into the game play, yet it is a firm basis until now.