



web educational tools newsletter n.5

english

OIKOS

Originating Innovative methods to learn and teach Knowledge in the field of earth and natural sciences derived from an Original and combined use of applicative Software

OIKOS CITY: a risk management game to learn how to manage a territory

OIKOS CITY is a Risk Management Game in the theme of natural hazards. It intends to work as a "bridge" between the study of risks related to natural phenomena and their management.

phenomena and their management.

Aims of the Game

The player takes on the role of a mayor who has to manage the development of a city. This becomes a difficult task when having to face 6 natural risks (earthquakes, volcano, landslides, floods, beach/cliff erosion), which represent the didactic core of the OIKOS project.

The mayor needs to make choices about how to manage the expansion of the city, taking into account crucial social issues such as quality of life, security, employment, as well as limits in terms of budget and time. At the same time, if they want to be re-elected, the mayor needs to balance decisions with citizens' approval.

So, the game aims to show that each action taken can have both positive and negative consequences, especially when dealing with integrated and dynamic systems. Indexes follow various variables including population satisfaction, responsibility of the mayor, budget, number of people endangered, number of houses damaged or destroyed, etc.

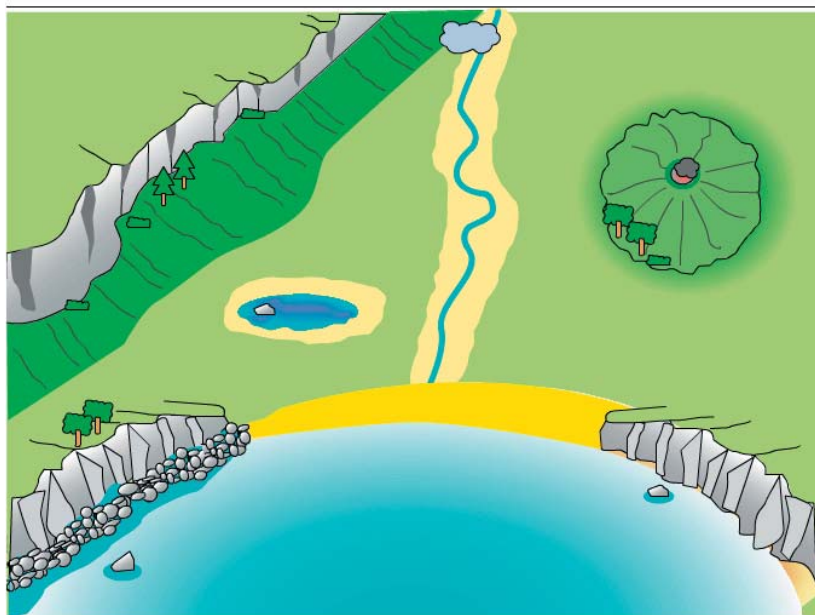
Relationship to the other OIKOS Web Tools

All the 6 phenomena/risks covered by the OIKOS Web Tools are managed in the game.

The player can tackle one of them (as in the simulation web tool) or, by increasing the level of difficulty, can combine a number of them in a complex management scenario.

Basic Rules

Basically, there is a "STANDARD" modality with pre-established conditions with a final score useful to create a TOP SCORER list. In this STANDARD modality the duration of the game is pre-established (5 years that represent the electoral mandate of the mayor) and all the 6 risks are activated at the beginning of the game. In this modality scores are "comparable" (all the players play in the same conditions).



We need you!

Welcome to OIKOS City. Houses need to be built, do you want to try? Press play to become the mayor.

Play Pause

Population: 0

Date: Aug 20 2007

Remaining time:

Budget: 20000000

Level of risk:

CASUALTIES 0 Satisfaction:

Protection:

Floods: Embankment Dam

Landslides: Fence

Maps:

land use morphology hazard

Advanced





University of Cyprus



University of Crete



INSTITUTO POLITÉCNICO DE LEIRIA



Universidad de Zaragoza



Universitatea Babe-Bolyai Cluj-Napoca

e-mail:
info@e-oikos.net

web site:
www.e-oikos.net

There is also an "OPEN" modality in which all is free (duration, no. of risks, etc...) with an intermediate score that will be given when the player arrives at an election date. At this point, the player can terminate or continue.



Players enter this OPEN modality when they modify one or more parameters abandoning, in this way, the STANDARD modality.

It is very important to notice that the score is null if the level of risk that the player has achieved is different from "no responsibility toward the risk".

The score is based on the "satisfaction" of people that live in the OIKOS CITY. In particular the following indicators are utilised:

- * pro capita debt
- * tax evolution
- * expenses evolution
- * phenomena occurrence without damages
- * number of new houses built
- * homeless status

Important Concepts

OIKOS CITY aims to put in evidence the following thoughts:

- * To be a decision maker is very hard work
- * The risks can and must be mitigated
- * The risks can and must be managed
- * The real world is a complex system
- * Monetary budget, level of risk and population satisfaction are very difficult to balance harmoniously

and finally
* a video game can be fun but also useful for learning purposes

Direct Didactic Possibilities

The main educational potentialities that the game offers are:

- * To learn about natural risks, not in an abstract way but in relation to real, everyday life and needs;
- * To view the natural phenomena/risks as a series of linked and or combined happening and not as a set of separate events;
- * To be aware that the management of a territory is multi-faceted with a great number of tangible and intangible parameters.

Indirect Didactic Possibilities

Indirectly, the following educational potentialities are available:

- * To implement the constructivist model by means of an interesting application;
- * To acquire the skill of risk management, (directly in natural risks, but indirectly to be able to apply this

know-how to other areas e.g. the financial or environmental risks);

* To move the common attitude from assessment towards management.

OIKOS CITY is not a surrogate of SIM-CITY

OIKOS CITY does not intend to appear as a poor version of the famous Sim-City game. In fact, even if in Sim-City some phenomena occur (volcano, earthquake, etc...), they are not supported by a scientific basis and the algorithm that calculates their effects operates in a statistic/stochastic way. Additionally, Sim-City does not work on-line.

On the contrary, the background of OIKOS City is strongly supported scientifically. For example, the interaction between phenomena, the return periods of phenomena, the impact on goods and populations together with other crucial behaviours are based on scientific indications.

Enjoy the Oikos City game!



On the 3rd of July 2007, in Heraklion (Crete, Greece), inside the CBLIS2007 - 8th International

Conference on Computer Based Learning in Science, the OIKOS Symposium has been held.

E. Kyza lead the session that was articulated on the following presentations:

- 1) THE OIKOS PROJECT: AN INNOVATIVE, WEB-BASED APPROACH TO TEACHING STUDENTS ABOUT ENVIRONMENTAL RISK MANAGEMENT
Eleni A. Kyza, George Olympiou, C. P. Constantinou, Mario Botte, Francesco Maria Guadagno
- 2) THE OIKOS MAPPING MASHUPS: INNOVATIVE EDUCATIONAL WEB-BASED APPLICATIONS
Mario Botte, Francesco Maria Guadagno, Paola Revellino
- 3) LEARNING HOW TO MANAGE A TERRITORY TAKING INTO ACCOUNT NATURAL RISK PREVENTION: THE OIKOS RISK MANAGEMENT GAME
Eric Leroi, Mario Botte, Francesco Maria Guadagno
- 4) THE APPLICATION OF OIKOS TOOLS AT THE UNIVERSITY LEVEL: ONE EXPERIENCE FROM A COASTAL MORPHODYNAMICS TRAINING COURSE
Jordi Serra, Pere Busquets & Jordi Vives

CONTACT



Università degli Studi del Sannio
Via Port'Arsa, 11
82100 Bevevento
Italia
tel: +39 0824 305136
fax: +39 0824 23013