

# GISCAMÉ - about

## Overview

GISCAMÉ is an innovative software tool, which was developed to facilitate the evaluation of different land-use management scenarios regarding the impact of land use pattern changes on ecosystem services. GISCAMÉ is a combination of three different methodological approaches:

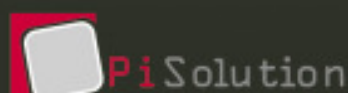
- Modified 2-D cellular automaton
- Geographical information system (GIS) module
- Multicriteria assessment framework

## Benefits

- GISCAMÉ supports the testing, visualization and evaluation of the effect of changes in land-use patterns, which result from spatial planning measures. One advantage of GISCAMÉ is its simple entry and online handling with low cost technical requirements regarding to end-users' technical facilities. In fact, a widely available set of maps based on CLC 2000 and geographical, topographical and climate data sets is used as a standard. For each new region, these data sets can easily be imported into the system's map management module. The system also offers the possibility to go in-depth, specifying complex planning restrictions and testing variable planning measures.
- GISCAMÉ aims firstly at the support of planners by simulating alternative land-use scenarios and by an evaluation of benefits or risks for regionally important ecosystem services. Second, GISCAMÉ supports the integration of information on environmental and landscape conditions into impact assessments. Third, GISCAMÉ supports the integration of impacts of planning measures on ecosystem services.

## Exemplary features

- Consideration of landscape metrics (LSM) such as habitat connectivity, landscape fragmentation and diversity
- Attribute action management system (AAMS) to design and compare attribute dependent land-use scenarios
- Water erosion risk assessment module (WE) to visualize the mass movement risk at landscape scale
- Multi-scale approach: linking the impact of local measures with the impact on selected parts of a region
- Admin-centre with multiple opportunities for adapting the evaluation base and for designing regionally
- Interface to established GIS-tools (import / export), scenario documentation and result fact-sheets
- Own data and multiple digital maps can be stored



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## Target Groups

### Regional planners / planning bureaus

GISCAMÉ enables fast screening of the relative benefit of alternative planning scenarios and supports the identification of "best alternatives".

### Municipalities

GISCAMÉ supports fast consensus building in participatory planning processes and provides the transfer of expert knowledge into public consultation in planning processes.

### Research institutions

As an innovative land-use management tool, GISCAMÉ provides a large set of impact assessment features and instruments to test ecosystem reactions on a landscape level.

### (Higher) Educational facilities

With its wide variety of applications, GISCAMÉ can be used as a teaching and training tool to convey knowledge regarding the ecosystem understanding and planning issues.

### Schools

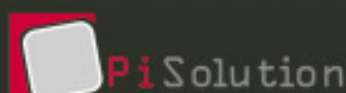
An educational version of the software supports teaching of environmental education topics on primary & high school level.

## Application Fields

Main application fields of GISCAMÉ are training and education in understanding the effects of spatial planning measures as well as the interactions of different land-use types at a landscape level. One example regarding this special application field is the Dresden University of Technology where its students used the multiple options within GISCAMÉ to map changes in land-use patterns. The scientific results were used in their bachelor and master thesis.

GISCAMÉ can also be used for the initial estimation of possible positive or possible planning corridors for infrastructural planning. Delivering a forum of exchange and discussion between different actors, GISCAMÉ delivers a new innovative approach. Another application field is REGKLAM. In this example, GISCAMÉ was used for the comparison of different land-use scenarios with regard to their impact on environmental services and their ability to mitigate undesirable development trends under climate change in the metropolitan area of Dresden, the capital of the federal state Saxony, Germany. GISCAMÉ is also used as a support for planning approaches regarding the recultivation of opencast mining in Germany, in the field of land-use changes from forest areas in Slovakia as well as in the field of regional land-use planning (Germany, Poland, Czech Republic). It is also used for the development of regional climate change strategies in rural areas and urban centres as well as for the development of management strategies for watersheds.

WASCAL is another application field of GISCAMÉ. Within the project, the feature-rich software allows to analyse land-use strategies in 10 countries of West Africa.



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