

CONCEPT OF ADAPTING THE SEGAE SERIOUS GAME TO BREEDING IN MOUNTAIN CONDITIONS

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INTRODUCTION

Traditional educational methods are becoming less and less effective these days. The young generation, accustomed to being in the virtual world, quickly gets bored and does not absorb knowledge to the right degree. Hence, new methods are constantly being sought to replace or complement traditional teaching methods. Educational games are a modern and effective didactic tool, as they engage the attention of a pupil or student, to a much greater extent than traditional methods. The importance of educational games stems from their ability to facilitate the learning process, through interactive experiences that can be used effectively to impart knowledge and develop skills. The serious game **SEGAE** was developed by an international team of authors and is designed to teach students of agricultural schools and universities.

OBJECTIVES AND METHODOLOGY

The main goal of the game is to transform a dairy farm into an organic direction. The basic scenarios of the game correspond to typical farms located in the authors' countries (France, Poland, Belgium, Italy). In the basic scenarios, cows were not reared in mountain conditions, but such an expansion of the application is possible. The aim of the research was to analyze the possibilities of extension a serious **SEGAE** game to the conditions of mountain farming.

RESULTS AND DISCUSSIONS

The game's development was based on models of farm operations developed by the project teams. Based on these models, algorithms calculate the appropriate indicators and monitor the game's progress. Consequently, the desired game result is achieved.

The foundation of a **SEGAE** serious game is three basic elements:

1. an operation model (several modules working together),
2. an input database (including parameter values, conversion factors, output indicator values, and threshold values),
3. the user environment (interface, graphical elements, frontend and backend), and prepared game scenarios.

During the research, we determined which elements required modification to extend the functionality of the **SEGAE** serious game to include farming in mountainous environments.



In principle, adding mountain farming to the game does not require changes in the basic algorithms, however, in order to achieve such functionality, it is necessary to perform the following actions:

1. Change input parameters and calculation indicators. The conditions of mountain farming are significantly different from typical agriculture, hence it is necessary to develop new parameters and indicators.
2. It is necessary to introduce cattle breeds typical of mountain areas, as well as plants and cultivation methods.
3. Scenarios suitable for this type of activity should be developed.
4. In addition, it would be worth developing appropriate graphics, containing elements of a mountain landscape, which will make the game more attractive.

Modifying these elements is enough to expand the capabilities of the **SEGAE** game with the intended functionality.

CONCLUSIONS

Adapting the **SEGAE** game to mountain conditions is possible, but requires several modifications/extensions. The most difficult of them is to develop a table of indicators and input parameters, typical for mountain farms, as they differ significantly from those found on the plains. However, meeting this condition will allow for relatively easy construction of several mountain scenarios, which will create an attractive tool for young people to learn mountain farming. The **SEGAE** app was designed with a flexible approach, allowing users to create new scenarios. However, the scope of the proposed changes exceeds the user's capabilities, as the specifics of mountain farming differ significantly from those in flat areas. Therefore, it is necessary for the software developers to implement appropriate changes. Such actions are possible and highly desirable, as they will significantly increase the app's appeal and the number of interested users.