



## NAUJŲ LEIDINIŲ RECENZIJOS REVIEW OF NEW BOOKS

### INFORMATION MODELS FOR DEVELOPMENT

(Review of the book of V. Rudzkienė and M. Burinskienė)



The study of Vitalija Rudzkienė and Marija Burinskienė covers a topic that nowadays is – against the background of global climate change – considered as indispensable for any future development: sustainable development of towns and regions. With their particular focus on the Lithuanian case, they investigate a country that has undergone fundamental transformation processes in the past decade.

On the way to develop their model the authors take several steps:

- discuss the ‘criteria systems’ to assess sustainable development (chapter 2)
- discuss methodological aspects, in particular of development paradigms (chapter 3)

Vitalija Rudzkienė, Marija Burinskienė. Plėtros krypčių vertinimo ir valdymo informaciniai modeliai. Monografija. – Vilnius: VGTU leidykla Technika. 2007. – 408 p. ISBN: 978-9955-28-217-4

- present a definition of the appropriate type of model and overview on statistical methods applied for assessment of development directions (chapter 4)
- present an in-depth analysis of the Lithuanian situation (chapter 5)
- describes the methodological approach for scenario building and exemplifying this approach by scenarios for the development of Molėtai region (chapter 6)
- elaborate on measures for the implementation of the concept of sustainable development (chapter 7)
- discuss the results and make recommendations (chapter 8).

The authors’ starting point is the deduction of indicators to create a ‘criteria system’ for the assessment of sustainable development. In doing so, they refer – in a first step – to factors in the context of economic development, education, health and environment while taking up the international discussion. To create a valuable criteria system, Rudzkienė and Burinskienė define a set of indicators that fit to the special situation of Lithuania; at the same time, they take into account the problem of carrying capacity, which means measuring the maximum use of a resource without affecting the sustainable development, and of defining threshold values. The indicator development finally highlights the ‘standard of living’ as an indicator that has received much attention in the recent past both by international and national Lithuanian scientists.

In chapter three, Rudzkienė and Burinskienė go through the long list of theories and concepts that exist for explaining ‘development’. They start by the more conventional concepts as there are the ‘drift paradigm’, the ‘material paradigm’, the ‘neoclassical economics paradigm’, but also the ‘ecological para-

digm' and the 'entropic perspective'. In the further course of the chapter, the authors develop more complex approaches like 'complex nonlinear models of sustainable development' and models of 'evolutionary economics' and 'evolutionary processes'. They point out that "environment changes are substantially dynamic and nonlinear, and insignificant changes in parameters may cause unexpected, dramatic and far-reaching results". Therefore they come to the conclusion that increasing significance has to be attached to "components that give an integrated view of nonlinearity, irreversibility and parameter diffusion of the system parts".

Rudzkienė and Burinskienė start chapter four by describing types of models and by defining the appropriate model type that they intend to develop. They deliver an extensive and detailed discussion about statistical methods that can be applied for the assessment of development directions focussing on their methodology for the discrimination of economic data storage patterns of multi-dimensional structures.

Thus having built the ground, Rudzkienė and Burinskienė address the development of their own model. The first step is elaborated in chapter five by an in-depth analysis of the Lithuanian situation concerning urban development, foreign investment, standard of living and housing with a particular attention to the gap in the standard of living between towns and regions, and social capital development. The authors describe and explain extensively the results of the statistical analysis that they have performed. By the use of regression and discriminant analysis methods they get the necessary parameters to build a valid model for the case of Lithuania.

The aim of the model developed by Rudzkienė and Burinskienė is to support political decision making and planning in Lithuania based on the idea of sustainable development consisting of a combination of economic growth, social progress and sparing use of natural resources to maintain the ecological balance and to ensure favourable living conditions for current and future generations. The analysis and the recommendations that the model can provide are not directly given but are generated by scenarios. In chapter six, Rudzkienė and Burinskienė outline the methodological approach for scenario building and the role that the model plays within the scenario building process. Using the example of scenarios for the Molėtai region development, the authors show – in a first step – the analysis of current trends in the respective region, and discuss – in the second step – alternatives to the current development in the Molėtai region. The 'alternative development' is highlighted by concrete measures that need to be taken if the alternative shall be achieved.

Chapter seven is dedicated to the elaboration of measures for the implementation of a sustainable development concept. It clarifies how sustainable development of regions can be achieved actively. The authors name as particular assets

- the participation of citizens in the adoption and implementation of decisions
- the strategic environmental outcome assessment, and
- the environmental impact assessment.

Description of these assets contains a clear distinction between the strategic level and the operative level of these political and/or planning activities.

In their 'Conclusions and Recommendations' of chapter eight Rudzkienė and Burinskienė stress – as one main conclusion – the obvious need for modelling and scenario building in planning processes on the one hand, but at the same time the fact that there *are* models that can provide this necessary support. While they recommend acting most carefully when using models, they also underline their well-founded and science-based belief that scenario analysis will become the main method for the assessment of future changes and for rational decision-making.

The study of Vitalija Rudzkienė and Marija Burinskienė about 'Information Models for assessment and management of development trends' is a brilliant and also very useful scientific work from two perspectives: On the one hand, it provides a perfect source of scientific discussion and work concerning both indicator systems for sustainable development and modelling of complex processes. On the other, it develops a coherent and consistent model for analysing and supporting the planning of sustainable development in both the theoretical and the practical field by applying the model to the case of the Molėtai region in Lithuania. By this approach the study may be employed by the reader – particularly if he or she is a planner – as kind of a 'handbook', but also as a motivation and stimulus for a deeper reflection on general political objectives for the development of a region or a nation and the necessary strategies to follow these objectives. In this respect, the study may be of outstanding importance in particular for politicians.

In all, I expect that given its scientific solidity and its practical usability the study of Vitalija Rudzkienė and Marija Burinskienė will receive a lot of attention in the field of both science and politics, not only nationally but also internationally.

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