

The Use of Game Theory in Voluntary Urban Readjustment Measures

Anja Jeschke and Alexandra Weitkamp (Germany)

Key words: Land management; Land readjustment; Spatial planning;

SUMMARY

Many fields of landmanagement contains processes of decisions: for example in planning of new building land, in rural readjustment measures or in urban development. Normally different stakeholders from administration, economy and citizenship are involved. Their objectives differ between emotional aspects and rational choice. It is rarely predictable, in which way the participation processes proceed, which aspects will be picked up and which results can be received. Game theoretical models could be very helpful in this context. Both, decision theory and game theory could be used as decision support models. While decision support theory is focused on one stakeholder, the game theory has the possibility to model the decision behavior of multiple stakeholders (players) in interaction. The behavior of different stakeholders can be modeled by the game theory, so the significant parameters of future processes can be predicted. Within game theory, the decision of a stakeholder is correlated with the actions of the other players. Game theory knows many kinds of games, e.g. if the stakeholders communicate with each other or if a repeat of the decision is possible. Precondition of the game theory is the knowledge about all of the stakeholders. Groups of stakeholders can be interpreted as one stakeholder, if they have the same objectives and behavior. This paper contains game theoretical modelling of decision processes in context of voluntary urban readjustment measures. The adaptation of the game theory for this field of action is focused in the analysis. Therefore, the stakeholders, their aims, possible force proportions (public-private also as private-private) and the extent of knowledge of each stakeholder should be identified. On this base different constellations of games are tested for their applicability within voluntary urban readjustment measures. Last but not least, possibilities and limits of modelling by existing constellations of games are presented.