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Modeling land use change inevitably involves modeling of an individual behavior of land users in addition to modeling of spatial environment. The processes in the latter usually follow some physical laws. However, it is less straightforward for a modeler how to describe the process of human decision making (Berger and Schreinemachers 2006; Brown and Robinson 2006; Stites 2006). As it is observed by ABM-modelers, it is relatively easy to model the mechanical part of an ABM such as spatial environment, because their dynamics is described by a set of straightforward deterministic rules (with some uncertainty intervals sometimes). In contrast, for human-beings it is not possible to say exactly how they (i.e., we) make decisions. Theoretically, land use behavior is well formalized in economics. Farmers' (von Thünen 1826 (reprinted in 1966)), households' (Alonso 1964; Strazsheim 1987) and firms' (Fujita and Thisse 2002) decision making with respect to land is fully based on the assumption of a rational maximization, equilibrium, and representative behavior. In reality people are boundedly rational, their behavior is often unrepresentative, they choose different strategies in the same situation, their decisions are biased by previous experiences and emotions, and people sometimes make irrational decisions. All these observed characteristics of human behavior make it difficult to use stylized theories of human decision making at the micro level. Thus, how people make decisions (e.g. about land use) remains a black box for a modeler. The only way to open it a little bit is to analyze real world micro level *data*. These data could probably be obtained either by observing a land-user decision-making in the controlled environment (for example in the setting of a role-playing game (Barreteau et al. 2001; Bousquet et al. 2005)), from interviews with stakeholders and during participatory workshops with them, or by gathering data in the form of surveys (Brown and Robinson 2006; Fernandez et al. 2005). During this workshop we would like to discuss challenges and open questions with respect to using survey data for feeding ABMs. No doubts that surveys provide very valuable data about micro level decision making. However, the following issues might arise here:

1. It looks more straightforward to parameterize the initial agent population in the ABM with empirical data than to generate agent behavioral rules. If one uses statistical data for the latter then he can actually run into a problem of transferring aggregated data into agent rules, which are supposed to be heterogeneous (e.g., ask an agent to reproduce if she reaches a certain age) (Axtell et al. 2002). What is the best way to interpret survey data in term of agents' rules? Should we better categorize survey subjects into several groups and then clone them in the ABM? Or assign each agent a

specific rule adopted from the survey with some probability (which might correlate with the percent of the sample, which has chosen it)?

2. Very often surveys produce qualitative measures. How can those measures be translated into formal agents' rules accurately? For example, how can we accurately transfer a likert scale into agents' behavioral rules? May the middle point choice of one agent on a likert scale mean the same as the low point choice for another agent? Can we use a respondent's stated choice as realistic? Some studies show that the intention to do some action stated in the survey does not always imply that people will actually do that. Is this fact worth considering in transferring survey data into ABM rules? If so, then how should we account for it?

3. With respect to climate change influencing human demands for housing: we are particularly interested in how perception of risk of flooding affects households' location choices in and outside flood-prone areas. How is it incorporated in the individual choice for housing and consequently in the aggregate demand for housing in the urban zone? Intensified climate change not only implies more risks and actually reduces supply of land available for development. Increasing storm and flood frequency, for example, may make people more aware of these risks and may change their location preferences.

4. Surveys produce answers on a typical situation (under investigation) in the field of study and a set of socio-economic characteristics of each respondent. Would it mean that the whole population can be divided into groups on the basis of their socio-economic characteristics (e.g. age, income) and each of the groups will be associated with a particular type of behavior?

5. Micro calibration and macro validation: comparing results of simulations runs (when micro behavior is calibrated with survey data) with statistical macro measures.

We are interested in discussing these questions in general and in application to our case study in the Netherlands in particular. We are working on an ABM simulating urban dynamics in a coastal city (Filatova et al. 2007; Filatova and van der Veen 2007). In parallel we are performing a survey on risk of flood perception and location choices of households in the province of Zeeland in the Netherlands. We hope that this workshop will provide possibilities for sharing our experiences and a ground for a brainstorming session.

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