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## **Modelers and stakeholders: who is the boss?**

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Computer modeling has been regarded as an efficient way of solving problems. Yet it has a history of failure when applied to decision making. Models have not necessarily resulted in better decisions. There is a clear disjoint between analytical quantitative analysis and decision making. How do we make models more appealing and convincing for the decision makers?

One possible approach is to open up the modeling process and engage the model users, the stakeholders in the modeling process. This is known as participatory or companion modeling, or shared vision planning, or mediated modeling. This increases the transparency of the model and brings more trust to the results. In most cases we would claim that the model is a product of the stakeholder process and is designed to suit the needs of the stakeholders and the goals of the project. However in reality much of the modeling process is predetermined by the skills and preferences of the modelers who come with their set of tools and drive the process.

We review a series of modeling projects that involve stakeholders and classify the various tools that they have used. We then try to evaluate to what extent the modeling approaches may have predetermined the outcomes. We also argue that the stakeholder process could benefit from a community effort that would make models and data more readily available and interoperable to make it easier to switch from one modeling paradigms to another and involve models of varying complexitiy in the decision making process.