Capacity building for developing scenarios and models of biodiversity and ecosystem services in China

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Abstract

In response to global, regional, and thematic assessment and decision support activities undertaken or facilitated by IPBES, China has currently stressed the importance of capacity building in developing scenarios and models of biodiversity and ecosystem services. However, most current studies lack a detailed description of the principles and quantitative comparison of scenarios and models of biodiversity and ecosystem services. It may hinder further development and application of scenarios and models in China. Here, we firstly presented three broad classes of models, i.e., scenarios and models of indirect and direct drivers, biodiversity and ecosystem properties, and ecosystem services. Then, we comprehensively reviewed the key input and output, model types, analytical technique, model structure, spatial coverage and resolution, uncertainty in outputs of the models, combinations of scenarios and models used in (large) assessments, and introduction and application of scenarios and models in China. Finally, we discussed data gap for introduction and application of scenarios and models in China, by synthesizing existing data integration platforms funded by the National Natural Science Foundation of China, high-resolution earth observation system, ground-based monitoring and information-processing capabilities, and capabilities to acquire and process economic and social data. Thus, we suggest that the Chinese government and scientific community should establish a collaboration with global observation networks to enhance capacity building in the following aspects: 1) observing, data mining and statistics; 2) acquirement and processing of economic and social data with robustness; 3) promotion of data shared principles by making a commitment to long-term funding for collection, calibration and release of datasets; 4) integration of monitoring and evaluation mechanisms into policy-making at all levels to ensure that information will be available and accessible to all.

Keywords: Models, Scenario analysis, Data gap, Assessment

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