

Biodiversity Observations and assessment in the global scale in order to achieve the post-2010 targets.

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[Abstract]

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This study was carried out to design a strategic research and development project on biodiversity observations and assessment in the global scale that will be promoted from 2011 to 2015 by the Ministry of the Environment. We reviewed achievements of the previous biodiversity observations and assessment in the levels of genes, species, and both terrestrial and marine ecosystems. Then, we concluded that major challenges to be attacked are (1) to quantify the rates of species loss in association with rapid habitat loss, (2) to quantify the loss of ecosystem functions/services in association with species/habitat loss, and (3) to develop evidence-based strategies to identify areas to be protected urgently. To carry out a project for tackling these challenges, we recommended organizing five teams that will study on (1) integration by modeling spatial patterns and temporal trends of biodiversity, (2) patterns and trends of terrestrial species/genetic diversity, (3) patterns and trends of terrestrial ecosystem functions/services, (4) patterns and trends of freshwater biodiversity and ecosystem services, and (5) patterns and trends of marine biodiversity and ecosystem services. To design projects in these teams, we organized a series of workshops on species/genetic diversity, forest ecosystem, freshwater biodiversity and marine biodiversity by inviting qualified researchers in these subjects and identified major tasks to be performed and effective strategies to be adopted. We concluded that specimen-based approach, plot-based approach, area-targeted approach and remote sensing approach should be integrated with statistical modeling of spatial distribution patterns by incorporating both natural and social explanatory variables.