

The importance of monitoring the interactions between ecosystem and climate as a key activity in the Future Earth

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A **dynamic equilibrium** of the global climate system is maintained by its interactions with marine and terrestrial ecosystems. An evidence was obtained from a tower-observational study in a larch forest in the eastern Siberia, showing that the consistent vapor supply from the forest even in dry summers supported a humid climate contributing to the own succession. Climate warming with the permafrost thawing due to the human activities, however, may cause a shifting of the dynamic equilibrium between the forest and climate. The larch forest is also an irreplaceable biological resource, and the harvesting may also give unpredictable influences on the shifting.

Therefore, scientific findings on natural processes are closely linked with both policies of environment and biological resources, and it is particularly important that the national policy should comprehensively face this linking. The history of tower-flux observations is very short, only about 10 years, and '**monitoring on the interactions between ecosystem and climate**' based on it should continue for additional 50 years and more on an organizational basis.

However, it may be **not fundamental** that a new budget would be allocated to the flux monitoring in addition to the existing organized observations on meteorology, river flow, satellite, and so on. We must **not aim at winning funding competitions**, but our *Future Earth*, promoting *transdisciplinary*, should comprehensively **reorganize the observation systems on Biosphere** in response to the changing relationships of our human society to the global environment called as the *Anthropocene*.

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