

Statistical Tools Driven Science Policy Interface for Strengthening Biodiversity and Ecosystem Services

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Abstract

In lieu of ever so evolving landscapes, there is a constant pressure on biodiversity and the myriad of ecosystem services it offers. In order to strengthen science policy interface for biodiversity and ecosystem services for conservation of human well-being, nexus between biodiversity and conservation and sustainable development varied statistical tools are applied. Science policy interface with the Science Based Target Initiative is a evolving landscapes in ecosystem based restoration framework. Aligning it with statistical tools further adds to dynamics for ecosystem management. The statistical tool includes : Good Quality of Life (GQL) = Human Wellbeing and factor is under pressure and indicated as P* - Percentage of undernourished populace ; Nature Contributions to People (NCP) = Ecosystem Goods Services - impacted where in two factors are considered – being at risk, not at risk, unknown level of risk extinction. Anthropogenic assets: Institutional, governance and other indirect drivers (IGID) (Drivers and response level) – Percentage of category I nations in CITES, proportion of area of forest production under FSC and PEFC certification, proportion of areas under protected areas; Protected area coverage of key biodiversity areas; Species Protection Index, Protected Areas Connectness Index, Species Status Information Index; Direct Drivers (Natural and anthropogenic): Ecological footprint, Biodiversity Habitat Index (BHI), Forest area as of % of land area; Biodiversity Intactness Index, Species Protection Index; Protected area coverage of key biodiversity areas; Nature (at Status level) = Biodiversity and Ecosystem Systems: Biodiversity Habitat Index, Species Habitat Index, forest area as of % of land area, trend in forest extent (tree cover), Red list Index. These tools are based as per the CBD (Convention of Biodiversity), SBSTTA 20 draft indicator, IPBES task force for data and knowledge. Other notable tool that can be applied include: Bayesian modelling and decision analysis for ecosystem services assessment. Bayesian model and the decision tree for its computation relies on the following attribute : Management intervention, cost of intervention, threats, ecosystem structure and function in order to know the extent of restoration required as it includes ecosystem goods and services, with ecological production function, includes economic or multi attribute evaluation leading to economic and other benefits including net benefits and or tradeoffs. The key deliverables from the paper are application of strategic tools which increases the ease of facilitation of the ecosystem goods and services computation for resolving and restoring multi iterative challenges and processes to nullify.

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