Forest carbon credits and climate change economics under the information-value nexus

Tuan Dung Bui

June 5, 2024

"Finally, he concludes the primary weakness lies in Kingfisher because he wasn't born with a singing voice and lacks a proper understanding of music theory! If Kingfisher stops being the conductor, the orchestra will surely play well again."

—In "Conductor"; *The Kingfisher Story Collection* (2022)

[SCIENCE COMMUNICATION]

The practice of trading forest carbon credits has gained significant attention as a strategy to combat climate change. By allowing companies to buy and sell credits representing forest carbon sequestration, it aims to create financial incentives for forest preservation. However, a recent report highlights the dangers of commodifying forest carbon if such financial mechanisms overshadow other vital environmental and social values. To understand the complexities of this issue, we can turn to the mindsponge theory (MT), particularly its information-value nexus hypothesis, for valuable insights.

The theory posits that individuals and communities absorb information like a sponge, filtering and retaining what they perceive as valuable. This value is a combination of both intrinsic qualities and the broader contextual environment. When applied to forest carbon trading, the theory can help explain how financial incentives interact with other values associated with forests, such as biodiversity and community livelihoods.

The information-value nexus hypothesis within MT suggests that information is not just passively received but is actively processed and sorted based on its perceived importance. In the context of forest carbon trading, the financial value of carbon credits is just one piece of information within a larger nexus. Other vital pieces include the ecological role of forests, their cultural significance, and their contribution to local communities' well-being.

One primary concern raised by the report is that focusing too heavily on the financial aspect of carbon credits can lead to neglect or undervaluation of other critical aspects. For instance, a forest preserved for its carbon sequestration potential may not necessarily maintain its biodiversity if the preservation strategy doesn't consider the needs of various species. Similarly, local communities that depend on forests for their livelihoods may find their access restricted in a push to maximize carbon sequestration, leading to social unrest and economic hardship.

The information-value nexus hypothesis proposed by the theory helps us realize that reducing forests to mere carbon offsets simplifies a complex ecosystem into a single commodity. This reductionism can lead to policies that ignore or underestimate the additional value forests provide. To create truly effective and sustainable forest conservation strategies, it is crucial to adopt a more holistic approach that acknowledges and integrates multiple values.

This integration means recognizing that forests offer a wide range of benefits beyond carbon storage, including water regulation, habitat for species, and cultural services. Policies need to ensure that the financial incentives for carbon sequestration do not undermine these other benefits. For example, projects should involve local communities in decision-making processes and prioritize biodiversity alongside carbon targets.

Moreover, the implications of the theory also emphasize the dynamic nature of the information-value process. Values and priorities can change over time, influenced by new information and shifting contextual factors. Policies for forest carbon trading should, therefore, be adaptable and flexible, allowing for adjustments as our understanding of ecosystems and community needs evolves.

One practical application of this theory could be the evaluation of carbon offset projects based on a broader set of criteria that includes social and environmental impacts alongside carbon metrics. This multidimensional approach ensures that the intrinsic and contextual values of forests are considered in decision-making processes.

Generally speaking, the mindsponge theory provides a valuable framework for understanding the complexities of forest carbon trading. By recognizing the diverse values forests offer and the dynamic process by which information is interpreted, we can develop more comprehensive and sustainable conservation strategies. Ensuring that financial incentives do not overshadow other critical environmental and social values is essential for the long-term health of our forests and the communities they support.

References

[1] McDermott C, Mensah EK, Hirons H. (2024). Buying and selling forest carbon as a commodity is dangerous if it trumps other environmental and social uses – new report. https://theconversation.com/buying-and-selling-forest-carbon-as-a-commodity-is-dangerous-if-it-trumps-other-environmental-and-social-uses-new-report-230146

[2] Vuong QH. (2023). *Mindsponge Theory*. Walter de Gruyter GmbH. https://www.amazon.com/dp/B0C3WHZ2B3

[3] Nguyen MH, Jones TE. (2022). Building eco-surplus culture among urban residents as a novel strategy to improve finance for conservation in protected areas. *Humanities and Social Sciences Communications*, **9**, 426. https://doi.org/10.1057/s41599-022-01441-9

[4] Keenan TF, Williams CA. (2018). The terrestrial carbon sink. *Annual Review of Environment and Resources*, **43**, 219-243. https://doi.org/10.1146/annurev-environ-102017-030204

[5] Nguyen MH, Jones TE. (2022). Predictors of support for biodiversity loss countermeasure and bushmeat consumption among Vietnamese urban residents. *Conservation Science and Practice*, **4**(12), e12822. https://doi.org/10.1111/csp2.12822

[6] Francis M. (2021). 'Sacred forests' in West Africa capture carbon and keep soil healthy. https://theconversation.com/sacred-forests-in-west-africa-capture-carbon-and-keep-soil-healthy-158325

[7] Vuong QH. (2022). *The Kingfisher Story Collection*. https://www.amazon.com/dp/B0BG2NNHY6