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Title: *Identifying intervention hubs with systemic impact for sustainable development of Arctic systems*

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A main challenge in Arctic systems is to identify environmentally viable economic scenarios that also address social and cultural constraints, values, and priorities, that are resilient to change. Local cultures and individual goals may be substantially different from ecological-economic sustainability scenarios. Still, data-driven scenarios may serve as the basis for social innovation processes, both to offer feasible ideas and to backup trade-off discussions with data. By looking at the system from a broad, network perspective, the main points of leverage for sustainable change may be identified, making the system easier to understand.

It is common knowledge that important currency flows exist between economic sectors in a local community. For example, even if neighbouring businesses do not directly exchange money or goods, they do indirectly via people and social interactions. These critical local economic interdependencies are impossible to characterize from publicly available data on currency flows. Even the best available data downscaled from coarser and larger scale accounts fail to capture these complex local interdependencies. The same is true for dependencies and feed back loops between the socio-economic system and ecosystem services. We thus present a systemic approach for developing a meaningful local socio-ecological-economic influence map for an Arctic community's implicit currency flows between all sectors by mining the collective knowledge of key economic actors.

Thus, for our research aim of finding and predicting simple solutions for sustainable growth and resilience of Arctic systems, we propose (i) an inter- and transdisciplinary approach to look at complexity and interconnectedness of multiple economic, ecologic and social factors using a network approach; (ii) a pioneering approach of qualitatively gathering influence data between economic sectors; (iii) an ecological-economic framework to identify hubs and leverage points in the system; and (iii) a social validation process that tests the development scenarios that are derived. We hereby present first empirical evidence from the ArcAlpNet project, comparing Arctic-Alpine network governance.