

ECOSYSTEM SERVICE TRADEOFFS WHEN STRIVING TOWARDS A BIOBASED FUTURE

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ABSTRACT

With increasing demand for bio-based materials and forest biofuels the pressures on ecosystem services from forestry practices will increase. This calls for identification and assessment of tradeoffs between different uses of provisioning and other ecosystem services and establish management practices considering such tradeoffs. Traditional optimization parameters like carbon footprint or life cycle energy use will not be enough; impacts on ecosystem services must also be assessed.

The UN Millennium Ecosystem Assessment concludes that ecosystems and their ability to provide humanity with ecosystem services are under severe stress. Increased use of bio-based materials and biofuels must be furnished in ways not unnecessary worsening the situation, or locally destroy the provisioning of essential ecosystem services.

The Swedish county of Jämtland is used as an example, with 3.4 million ha of forest area and forestry as an important industry. At the same time the county has a large tourism industry - for skiing but also for experiences of undisturbed nature, hiking, hunting, fishing et c. The county is also marketing itself as a "Quality Food Area" having a focus on local food production and food experiences, with the clean and uncontaminated environment for agriculture, game and fish as a cornerstone. More intensive forestry may create conflicts between enterprises related to cultural ecosystem services and those provisioning services pushed for biofuel production.

We need to make possible the inclusion of tradeoffs between different types of e.g. cultural ecosystem services in sustainability assessments of increased forest biomaterial harvesting and production in Jämtland.

KEYWORDS Renewable energy, Biobased materials, Ecosystem Services, Tradeoffs, Forestry, Jämtland.