

CONTRASTING POLICY TARGETS? - EVALUATION OF POLICY INSTRUMENTS AND CERTIFICATION SCHEMES IN NORWEGIAN FORESTRY

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The Government of Norway has stated that they will increase the level of harvesting in general, and also increase the production of bioenergy based on woody biomass [1, 2]. At the same time there is a high focus on maintaining biodiversity [3]. One way of combining these two targets are through implementing measures for maintaining biodiversity into all forest management. This is ensured through certification schemes and through legal statutes. All in all there exist a wide number of instruments aimed at securing an ecologic and social sustainable forest management. Earlier studies on the effects of environmental constraints on available woody biomass or economic have mostly been based on rather rough estimates [4]. Given the ambitious political targets it seemed necessary to investigate the actual effect of all the environmental constraints affecting forestry today. We have performed a study aiming at describing the effect of environmental constraints on the area of productive forest available for forestry, and on the effect on growing stock that can be harvested. All constraints are analyzed according individually, and considering overlap with other constraints. The analysis is based primarily on data from the National Forest Inventory.

In total, approximately 28% of the productive forest area in Norway is restricted in different degrees. We have separated the productive forest into Forest Management Alternatives (FMA). *Conservation* (FMA1) through Nature Reserves and National Parks alone cover 2.3 % of the productive forest. *Area Protection* (FMA2) through key habitats (MiS-figures), buffer zones and protected landscape areas and habitat protection areas cover additionally 10.9 % of the productive forest. Forest areas with a *Combined Objective Forestry* (FMA3; social forestry/multiple use) such as urban forests and mountainous forest cover 13.2 % of the productive forest. This leaves slightly above 70 % of the productive forest left for *Production Forestry* (FMA4). However, also in the production forest there are restrictions on the available volume for harvesting, as measures such as protecting game habitats, recreational areas, and cultural heritage are taken. In total > 20 % of the standing volume cannot be harvested due to environmental restrictions [5]. A cost-supply analysis revealed that the main source for increased biomass extraction in Norway need to be the productive forest where there is a substantial potential for utilization of harvest residues [6]. Thus, the high level of environmental constraint on the area and volume accessible for harvesting might lead to difficulties in reaching the political ambitions of increased harvesting levels in future.

References

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