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## Development of land use matrix using geospatial data of National forest inventory

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**Abstract.** Calculation of land use and land use change matrix is one of the key elements for the national greenhouse gas (GHG) inventory in land use, land use change and forestry (LULUCF) sector. Main purpose of the land use and land use change matrix is to present comprehensive and harmonized land use and land use change information nationwide over certain time period. Information on land use and land use changes is further used to calculate other parameters important for determination of carbon stock changes and GHG emissions like the stock changes of living and dead biomass, as well as basic information on applied management measures. Aim of this study is to improve methodology for development and maintenance of land use and land use change matrix in the national GHG inventory system using geospatial data information of National forest inventory (NFI) and auxiliary data sources. Creation of land use and land use change matrix is performed in semi-automated way by using GIS tools, which eliminates possible impurities of reported data and have made the calculation process less time consuming than before. New calculation method takes into account present land use data from NFI and land use data from two previous NFI cycles, considerably reducing uncertainty of the estimates, and takes into account land management practices which may alter the land use category in long-term. Auxiliary data, like national land parcel information systems (LPIS), has been introduced to increase certainty, consistency and accuracy for determination of final land-use category. Year-by-year land use change extent detection is carried out by using linear interpolation and extrapolation method is used for the consecutive years for which NFI data are not available.

**Key words:** ERA-GAS INVENT, land use and land use changes, national forest inventory, greenhouse gas inventory.