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## **Global Change and Baltic Coastal Zones**

### **Chapter 5: Global Change Impacts on Agricultural Land Use in the German Baltic Sea Catchment Area**

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#### **Abstract**

Global and Climate Change influence agricultural land use and production and, therefore, nutrient emissions into the Baltic Sea. The past development of agricultural land use and nutrient balances in German counties of the German Baltic Sea catchment are discussed. Crop yield estimations for winter wheat are made depending on historical data and on climatic parameters of Climate Change projections. Simulations with the agricultural sector model RAUMIS (Regional Agricultural and Environmental Information System for Germany) are conducted for the year 2020 to estimate the effects of differences in crop yields, as well as effects of the European Common Agricultural Policy and national regulations on agricultural land use. Results show that crop yields will increase on average until 2020, whereas under Climate Change yields increase less strongly with the exception of maize yields. Energy crops will be increasingly cultivated due to the current promotion of renewable energies. Altogether, decreasing nitrogen surpluses from agriculture can be expected. However, Climate Change and the cultivation of energy crops will lead to a less strong decline of nitrogen surpluses in the German Baltic Sea catchment area.