

Assessing ecosystem services based on statistical data and expert evaluation

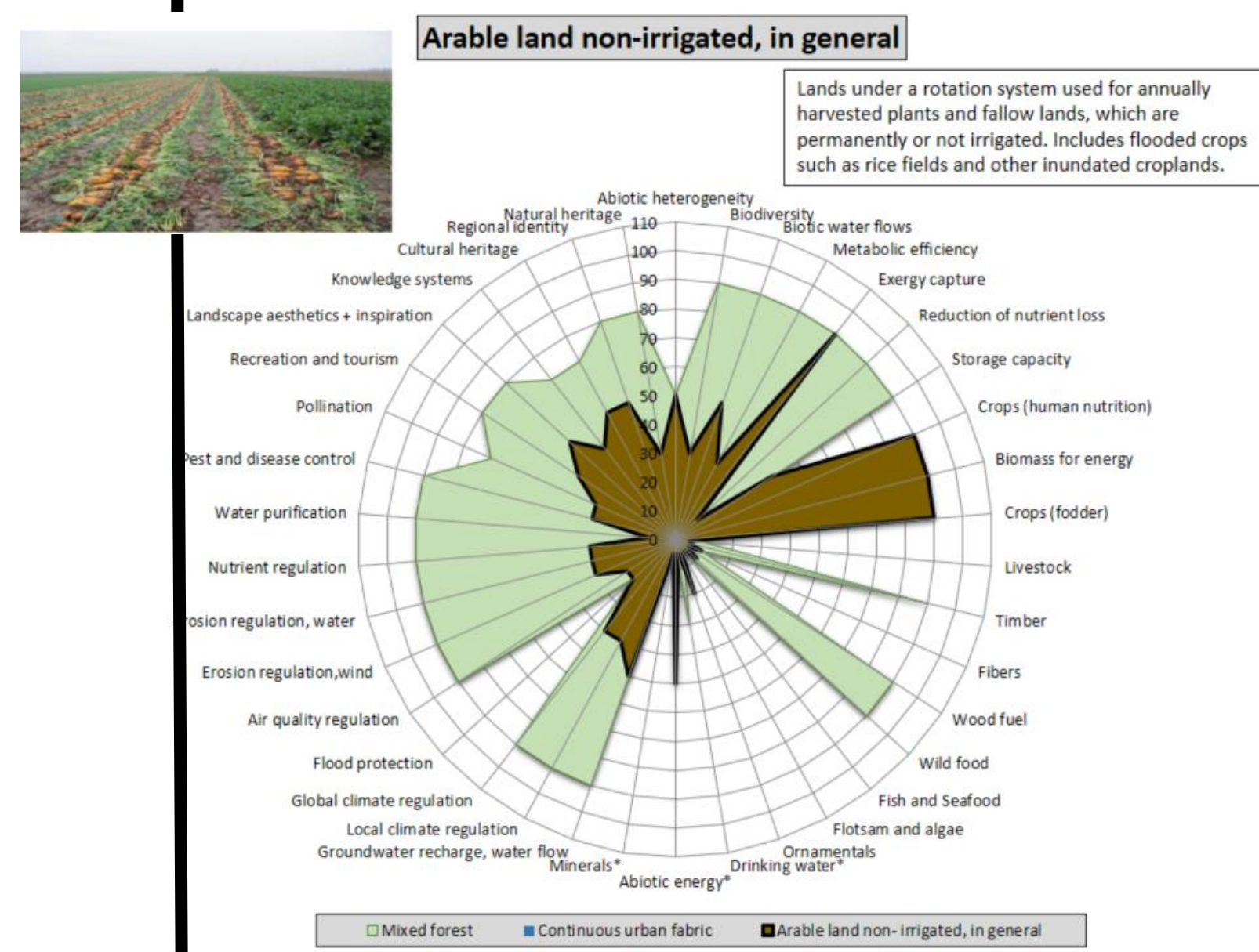
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(a) CAU Kiel, Kiel, Germany

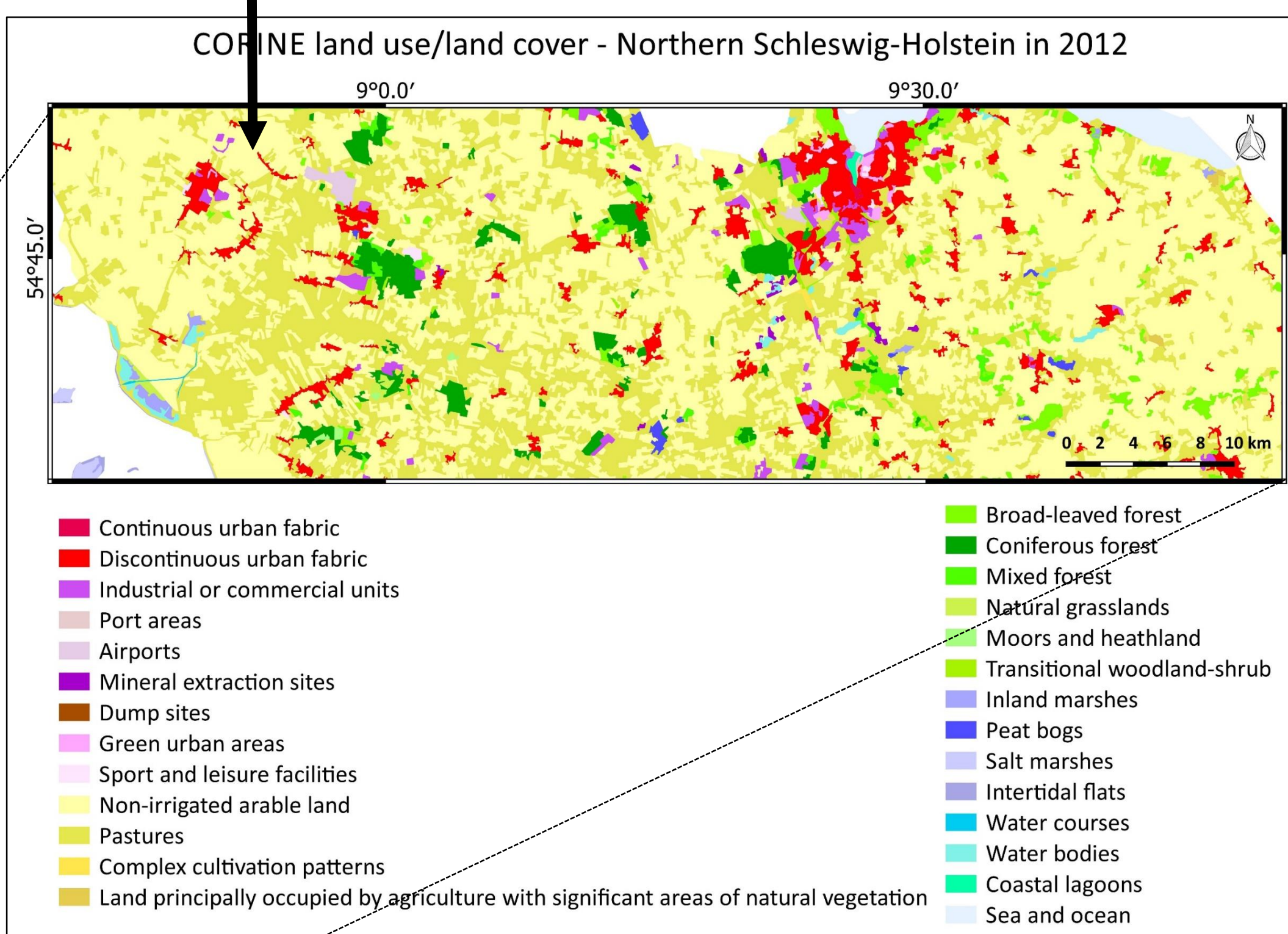
(b) Leibniz Universität Hannover, Hannover, Germany

The „ecosystem service matrix“ describes the potentials of different land cover and ecosystem types (x-axis) to provide different ecosystem services (y-axis).

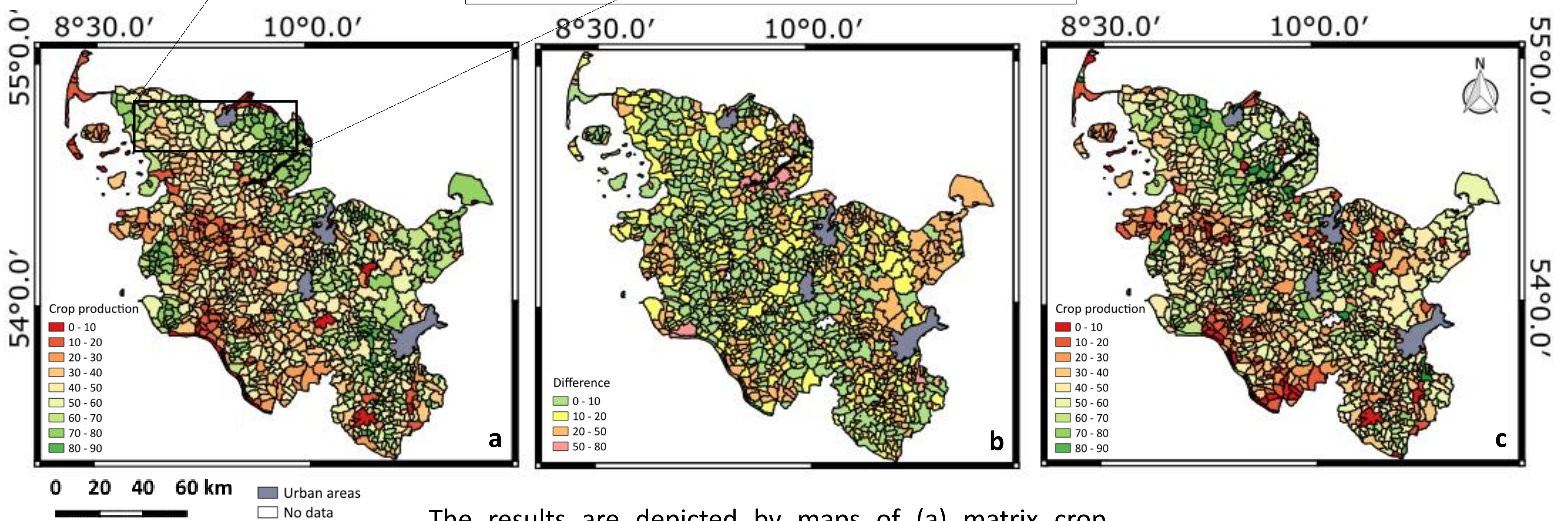
It has been developed and checked by more than 100 experts and expresses the probabilities of ecosystem service supply in scores between 5 (supply exclusion) and 100 (optimal capacity for service supply) for Northern German landscapes, coastal ecosystems and marine habitats of the Baltic Sea.



The official statistical data on harvest (yield per hectare) and agricultural areas from the agricultural census (Statistical Agency North, 2010) needs to be pre-processed before calculating the crop production (dt/ha*a), in particular due to the data privacy law, which leads to unavailability of certain data on the scale of municipalities. For reasons of comparability the crop production (dt/ha*a) is reclassified using a relative scale according to the results based upon the matrix approach.



Aggregation on municipality scale



The results are depicted by maps of (a) matrix crop potential, (c) statistical harvest data and (b) the differences between them. Map (b) demonstrates satisfactory agreement of the spatial distribution patterns (green + yellow), but also discrepancies (orange + red) e.g. referring to the catchment of *Schlei* and *Ostholstein*. These differences are based on the regionally preferred crop types, and they are the key elements of matrix optimization.



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