Appendix A

The six scientific publications that form the basis of this thesis include input from several co-authors. Here, the contribution of the author of this thesis to each individual chapter is outlined.

Chapter 2 of the thesis originates in the discussions about the uncertainty of LULCC representations in climate projections within the LUC4C project. I conducted the review of data and models, conducted all analysis supporting the arguments in this publication, and led the writing of the paper. All co-authors contributed to the chapter by commenting on different draft versions of the manuscript and providing information on the land-use implementation in the models discussed in the chapter.

The publications underlying Chapter 3 and 4 have been developed in close collaboration with Dr. Peter Alexander (P.A.) from the University of Edinburgh. Together with P.A. I developed the methodology to quantify and identify the uncertainty ranges in the LULCC model projections, which is applied at different scales in both chapters. The writing of the publication underlying Chapter 3 was led by P.A. with regular exchange between all co-authors. I conducted all analysis, including the adaptation of the map comparison methods to the fractional LULCC maps and the statistical analysis, and led the writing of the publication underlying Chapter 4. All co-authors provided comments on the manuscript prior to submission to the journal.

Chapters 5 and 6 have been developed in close collaboration with Annette L. Hirsch (A.L.H.) from the ETH Zurich (now at the Research School of Earth Sciences, Australian National University). I conducted the literature review and analysis to derive the spatially explicit global estimates of CA and led the writing of the publication underlying Chapter 5. The writing underlying the publication of Chapter 6 was led by A.L.H. with the dataset description written by me. Regular exchange and joint analysis of the results presented in Chapter 6 was done during a research visit at ETH Zurich in July 2017. All co-authors provided comments on the manuscript prior to submission to the journal.

I conducted all analysis in Chapter 7 and led the writing of the publication underlying the chapter. As with the other chapters, the co-author provided valuable input regarding the contents and the structure of the manuscript.