# CASA dissertation: Literature Review

Student Number: 22186878

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## Introduction

Understanding where people live, and the social and economic characteristics of those populations, is core to providing adequate, efficient, and targeted services and investment.

Justification

This study is a novel addition to the field as it extends upon existing methodologies used to estimate total population and applies this to the estimation of the agricultural dependent population. Additionally, the case study of India is designed to assess feasibility and performance at a large spatial scale, comparative to partner research testing proof-of-concept in districts of Sri Lanka (unpublished). Understanding particularly the distribution of agricultural population in a region will provide a more accurate estimate of local demand on water resources.

## Literature Review

### Preamble

Introduction for the literature review; summarise the findings and topics that will be explored – ADP, India, and Spatial Disaggregation Methodology.

Text

### Agricultural Dependent Populations

Text

### Indian Context

Paragraph topic: Intro; What is the current situation in India for ADP?

India, the subject of this study, is one of the world’s largest countries by area, the third-largest economy, and is expected to become the most populous country by the end of 2023 (United Nations in India, 2022).

Paragraph topic: Administrative formation.

India is divided into 28 states and 8 union territories, each of which are further subdivided into districts and smaller administrative divisions.

Paragraph topic: census data – what is available? Opportunities/Limitations?

The most recent Census of India was conducted in 2011.

### Spatial Disaggregation

Paragraph topic: Define spatial disaggregation; Why is it important?

Spatial disaggregation is a broad term which applies to the process of transforming data from a set of source zones into target zones, such as a raster grid, at a higher level of spatial resolution. There is considerable interest in the process across both academic literature and in policy, particularly applied to estimating population at fine spatial scales, as this has important implications for service planning and delivery (Deichmann, 1996), disaster preparation and response (Schneiderbauer and Ehrlich, 2005), and public health interventions (Viel and Tran, 2009), among others.

## References

Deichmann, U. (1996) ‘A Review of Spatial Population Database Design and Modeling’. Available at: https://escholarship.org/uc/item/6g190671 (Accessed: 28 February 2023).

Schneiderbauer, S. and Ehrlich, D. (2005) ‘Population Density Estimations for Disaster Management: Case Study Rural Zimbabwe’, in P. van Oosterom, S. Zlatanova, and E.M. Fendel (eds) *Geo-information for Disaster Management*. Berlin, Heidelberg: Springer, pp. 901–921. Available at: https://doi.org/10.1007/3-540-27468-5\_64.

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Viel, J.-F. and Tran, A. (2009) ‘Estimating Denominators: Satellite-Based Population Estimates at a Fine Spatial Resolution in a European Urban Area’, *Epidemiology*, 20(2), pp. 214–222.