

ARTICLE



## Data, time, change and land-system dynamics

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### ABSTRACT

Time-related information in land-change studies is reviewed using case studies in JLUS and LAND. An explicit focus on time has potential for exploring process-based perspectives. We report how time is represented and patterns in pre-analytical choices are detected, identifying practices to enhance the relevance and impact of land-change studies. Results show 40% of the studies use two datasets; the modal timespan and interval between datasets are 10 years; 79% are durations up to 30 years; 73% are changes since 1972. Modal start dates are 1990 and 2000. Dates ending in 0 and 5 are over-represented and lack explicit justification. The prevalence of a 'two-date approach' restricts measuring and analyzing change, identifying temporal non-stationarity is precluded, and modelling change pathways and responses to underlying system dynamics are limited. An improved focus on time in dataset choice to develop improved understanding of dynamics and change offers broader insights into land-system functions.

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### KEYWORDS

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