

Where and how do satellite observations fit in carbon budget calculations across scales In the GEO Carbon and GHG Initiative?

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The main aim of the GEO Carbon and GHG Initiative is to facilitate cooperation to develop a coordinated system of domain overarching observations for monitoring and evaluating changes in the carbon and other cycles, and GHG emissions as they relate to human activities and climate change, and to provide decision makers with timely and reliable policy-relevant information. One of the principal tasks in the GEO Carbon Initiative, Task 4, envisages examining consistency in carbon budget calculations from local through to global scales. This task recognises the existence of major initiatives at each scale e.g. the Global Carbon Budget, RECCAP, National reporting and Urban budgeting by city authorities e.g. C40, Carbocount_CITY. However, these budgets, while perfectly defensible tend not to be inter-consistent. The objective of this paper is to continue the discussion on what data are needed when and where to address this inconsistency with an emphasis on satellite data products and focusing primarily on the terrestrial domain and its coupling with the atmosphere.