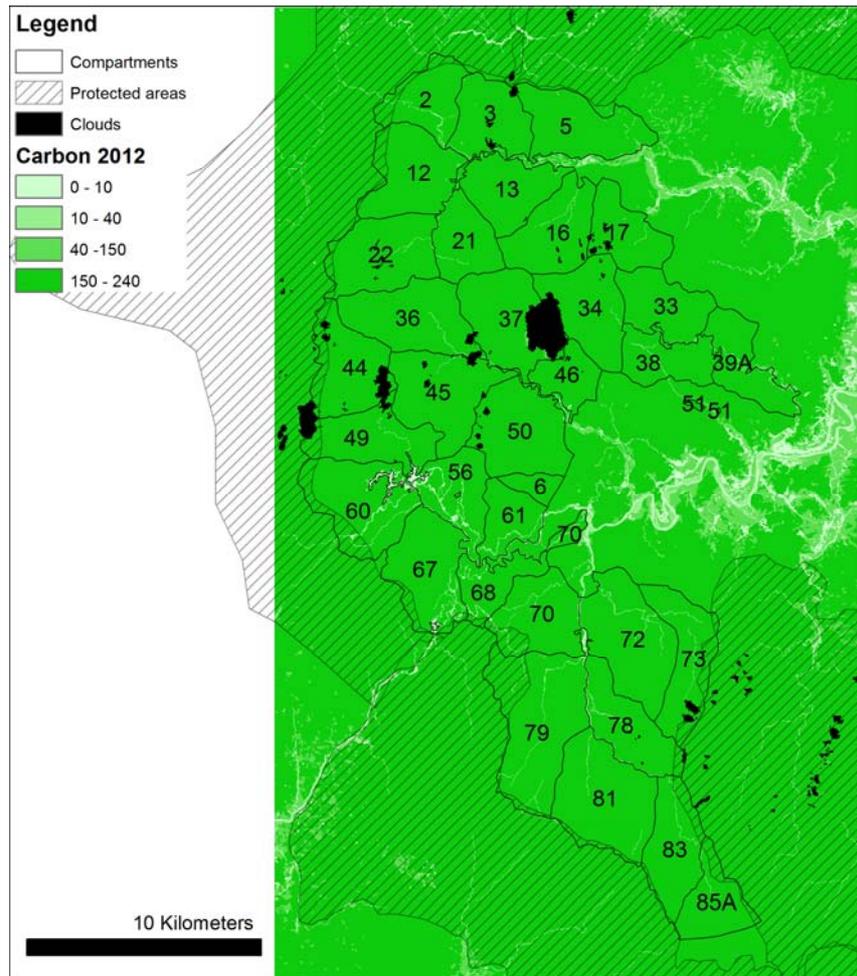


Carbon sequestration –Huong Son

In the Huong Son case study, the forest cover shows only minor changes between 2002 and 2012. The forest is however the totally dominating land cover type and the carbon storage of the area is hence an important ecosystem service. The main change that has occurred is the construction of a hydropower dam. The construction of the dam has of course lowered the carbon content in that specific area. The total amount of carbon gained or loosed during the investigated time frame would need support from in situ data to be reliable. A net carbon sequestration is expected as now harvesting activities are taking place and the net deforestation is low.



Carbon stock from land cover the dark green areas are high stock and the lighter green areas are low stock areas. As the dense forest is relatively homogenous, there is little variation within the analysed area. The striped areas are conservation areas and the compartments are digitised from the forest management plan, black are no data areas due to cloud cover.

Conclusions

Based on EO classification the Invest modelled carbon content of the forest becomes quite homogenous. Integrating crown cover percentage and tree heights give a much more heterogeneous result. Both of the methods do need to be calibrated to reflect the actual carbon content at any given location. Using field data for calibration of the relationship between crown cover and crown height as well as forest type, would greatly improve the calculations of stored carbon in the landscape. It would also make it possible to calculate the potential stocks and flows of carbon in the landscape if managed to optimise this relation with a global carbon budget in mind. However, doing this requires both new tools and new data, since the InVEST models do not run growth- or biomass-estimations, and high resolution data on crown heights are mostly unavailable.

Lessons learnt

To make sense from a carbon management point of view there is a need for more detailed information on both carbon content and management practices and their implications. The InVESTmodel was run with the same land cover in both the current and future baselines, but with a management grid. This approach did not seem to work, the management effects must be implemented in the future scenario and the forest be divided into a larger number of density and biomass classes. This means that landscape dynamics must be modelled outside of Invest.