Geophysical Research Abstracts
Vol. 13, EGU2011-9503, 2011
EGU General Assembly 2011

carbon footprinting of regional development projects

Dirk de Kramer (1) and Willem Hendriks (2)

(1) Witteveen+Bos, Engineering and consulting, The Netherlands (d.dkramer@witteveenbos.nl), (2) Witteveen+Bos, Engineering and consulting, The Netherlands (w.hendriks@witteveenbos.nl)

Scaling down the Dutch national system for greenhouse gas inventories to project size, offers policymakers a climate impact assessment tool. This will allow them to evaluate the climate effect of their decisions on regional spatial development beforehand. Changes in soil carbon content can be pivotal in determining both the effect of changes in allocation of land use and spatial planning, as well as the mitigation potential through strategic environmental management.

Ambitions to incorporate the principles of environmental sustainability and climate awareness are broadly supported by policymakers and other stakeholders, at all levels of governance and management. However, putting them to practice proves to be a major challenge for actors operating at the regional and landscape level. After formulating measurable and verifiable targets for greenhouse gas emission reduction, the question how to translate these into concrete and attainable measures remains unanswered. Recent scientific developments have provided new findings detailing the relation between the formation or sequestration of greenhouse gasses and soil management.

We have developed a methodology that produces estimates of the climate impact of projects at regional scale, by identifying and analysing the changes in land-use and management that affect greenhouse gas emissions. This amounts to a greenhouse gas inventory on project level, based on the Dutch national system, which is used to report to the United Nations for the Kyoto Protocol. Producing locally relevant emission factors is a mayor part of the methodology. The climate effect of a project is expressed as a net sum of emitted CO2-equivalents over the analysed time period, which can be compared to a baseline scenario representing the unchanged continuation of the current situation.

Here the principle applies, that an ounce of preparation is worth a ton of cure. By considering the climate impact of the various alternative forms of the regional development during the decision making part of the process, much emission can be avoided at this phase already; essentially for free. Also, quantifying the effect of the regional development on greenhouse gas emissions at this early stage, makes it possible to put the flexibility that still exists in the planning phase to optimum use. Choosing the most “climate friendly” version of the development could minimize the need for more expensive mitigating measures to attain the set reduction targets at a later stage.

To develop, test and demonstrate the climate impact assessment tool, a pilot study covering a regional development project in the Krimpenerwaard, The Netherlands, was performed. It showed groundwater management to have a potentially large influence on greenhouse gas emissions and identified the management regime which combines minimizing the subsidence with the reestablishment of natural vegetation as the project version with the lowest climate impact. Actually, the methodology predicts that choosing this version of the regional development, will result in the active sequestration of a years worth of emissions of 200.000 Dutch households, thereby supporting the national climate policy.