CARMATOP — a RAAK-SME project with benefits for industry, tourism education and the environment

NHTV has initiated the RAAK-SME project CARMATOP in March 2013 and since coordinated it. CARMATOP stands for Carbon Management for TourOperators. RAAK (Regional Attention and Action for Knowledge Circulation) projects are relatively large projects, with a max. of € 300,000 funding available from the Dutch Ministry of Education, Culture and Science (OCW) for each SME related project. The scheme is managed by Foundation Innovation Alliance (SIA). RAAK projects are driven by the industry, here small and medium sized enterprises. SME’s signal knowledge gaps, which universities of applied sciences, together with other partners, try to close.

The project goal of CARMATOP, with a total budget of € 440,000, is to develop and test new knowledge about the measurement of package tour carbon footprints and translate this into an easy to use application – a carbon calculator – which allows tour operators to integrate carbon management into their daily operations. Global tourism contribution to man-made CO2 emissions is around 5%, and all scenarios point towards rapid growth of tourism emissions. Tour packages have a high long-haul and aviation content, and the increase of this type of travel is a major factor in tourism emission growth.

Dutch tour operators recognise their responsibility, and feel the need to engage in carbon management. Carbon management is the strategic management of emissions in one’s business. This is becoming more important for businesses, also in tourism, because of economical, societal and political developments. For tour operators some of the most important factors for taking action are increasing energy costs, international aviation policy, pressure from society to become greener, increasing demand for green trips, and the wish to obtain a green image and become a frontrunner among consumers and colleagues in doing so. By engaging in carbon management, Dutch tour operators would become international frontrunners.

CARMATOP enjoys an extensive network. Project management is in the hands of NHTV’s Centre for Sustainable Tourism and Transport (CSTT), with professor Paul Peeters as project leader, and most researchers working for the CSTT are involved. CSTT has 10 years’ experience in measuring tourism CO2 emissions and developing strategies to mitigate emissions, for which it enjoys an international reputation. The project is a logical follow-up of CSTT’s work with carbon emissions. In 2010 and 2011, CSTT already calculated tour package portfolio emissions of touroperator Sawadee, and that project spurred ideas to develop a carbon label for tour packages among the small group of Dutch sustainable tourism frontrunner touroperators. Hence, CARMATOP also investigates the possibilities for and barriers to such a label.

The need for a comprehensive and validated tourism carbon calculator has been confirmed in the first phase study, an inventory of existing calculators. Most existing calculators focus on air transport only and the results for identical flights vary up to an order of magnitude. Also calculators for accommodations, non-air other transport modes and tourism activities. The researchers of CSTT managed to connect to a global database for flights, detailing emissions at the specific aircraft type in the specific airline seat configuration flown on a route. This provides tour operators with an instrument to reduce emissions by airline and route choices. Furthermore, a global accommodation database has
been build, containing modeled emissions for 450,000 properties. Detailed emission factors for some 20 transport modes and about 20 high emission tourism activities were calculated based on scientific and professional information. CSTT is confident to have created the most accurate and comprehensive tourism carbon calculator in the world.

Continuing the network, the **ICT Associate Professorship of HZ University of Applied Sciences** has longstanding expertise in linking varying databases of different organisations. Its key role is to create the semantic wiki for the carbon calculator, which links touroperator input with all necessary databases on carbon emissions. Web developer ibuildings creates the Graphical User Interface; the front end of the CARMATOP calculator. **ANVR**, the Dutch Association of Travel Agents and Tour operators, has joined for dissemination and networking purposes, and to ensure CARMATOP products will last. **Climate Neutral Group**’s experience with sustainable entrepreneurship and knowledge about carbon footprint (mitigation), and **ECEAT**’s broad sustainable tourism network, provide further essential inputs for CARMATOP. Finally, most of the **eleven touroperators** are sustainable tourism frontrunners in the Netherlands, and are the driving forces behind this project. TUI Netherlands, not an SME but very much a frontrunner, has participated in the development of this project and also joins in project meetings. After initial testing of the ‘draft’ calculator by three pilot touroperators this summer, and subsequent improvements of the tool, the other partner touroperators will follow by measuring portfolio emissions, with several more (external) touroperators joining in a third stage.

RAAK projects do not only fulfill an industry purpose. As universities of applied sciences run them, there should also be a clear link to and value for education. CARMATOP already has had several students involved in thesis research (ITMC and BSc Tourism) and placements at SME partners. This academic year should see the development of a carbon management training module, for use by touroperators and in NHTV tourism curricula. It is very clear that carbon management is here to stay, and NHTV students would have an advantage in knowing its ins-and-outs.

Internationally, CARMATOP has already drawn some attention, and opportunities of having the carbon calculator go international are being checked. The project’s goals and research have already been presented at international conferences in Greece (ICOT), Belgium (TTRA), and Germany (Freiburg and Potsdam).

With CARMATOP, carbon awareness has finally arrived on a large scale in the Dutch tourism industry. It has taken the CSTT many years to achieve this. If NHTV follows suit, by adding carbon management to its curricula, our students will come prepared for working in a more sustainable tourism future.

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For more information on CARMATOP, check [http://www.cstt.nl/Projects/CARMATOP/17](http://www.cstt.nl/Projects/CARMATOP/17) or contact Eke Eijgelaar ([eijgelaar.e@nhtv.nl](mailto:eijgelaar.e@nhtv.nl)). For an industry perspective, read this (Dutch) post by Gert Nieuwboer, director of SNP Natuurreizen: [http://www.mvonederland.nl/praktijkvoorbeeld/snp-natuurreizen-co2-calculator-voor-en-door-touroperators](http://www.mvonederland.nl/praktijkvoorbeeld/snp-natuurreizen-co2-calculator-voor-en-door-touroperators).