

Summary of NIAM meeting held at IIASA on 21 March 2011

A meeting of the network for National Integrated Assessment Modelling, NIAM, was held at IIASA on 21 March in conjunction with the meeting on the EC4MACS Life project the following day. The agenda and full copies of presentations are compiled together with this summary on the NIAM web-site.

The meeting started with national teams summarising their activities and developments, some based on the GAINS model and others on independent models. A welcome development is the growing interest in EECCA countries in deploying GAINS, as reported by Katarina Yaramenka from Sweden who has worked with Stefan Astrom and colleagues to help this initiative. Work in progress by the Ukraine, Belarus and Russian Federation was described, and there is now an EECCA coordinating group led by SRI Atmosphere in St Petersburg. Another country newly implementing GAINS is France with plans as described by Simone Schucht. Other countries reported a range of developments: including the UK with UKIAM and validation of the BRUTAL urban sub-model, plus scenario analysis for combined heat and power, and extension to address protection of ecosystem Sites of Special Scientific Interest (Tim Oxley); work in Ireland addressing uncertainty and an impressive range of scenario analysis to support policy development (Fearghal King), and Italy with detailed urban air quality modelling of NO₂ down to a 4x4 km grid scale together with detailed source apportionment (Stefanova Milanova). Louisa Volta introduced the OPERA project and the development of regional scale integrated assessment modelling. Under this project she has been undertaking a survey of current IAM capabilities, and she summarised the questionnaires she has received so far (NIAM members are encouraged to fill in questionnaires and participate in this review, which will be placed on the NIAM web-site.

The following presentations were focused on specific topics of current interest, starting with collaboration between Finland and IIASA on short lived climate forcing, and the MACEB project (Mitigation of Arctic warming by Controlling European Back carbon). Sweden have been linking their research on biofuels to GAINS by incorporating it in a compatible script; and approach that can be used more generally to make research available for use by others. For several countries international shipping emissions play an important role: Paul Campling from Belgium talked about investigation of a scheme for emission trading to reduce such emissions.

The next session addressed emissions and how projected emissions to 2010 had evolved, causing problems both in meeting emission ceilings and for urban air quality. Fearghal King illustrated this with respect to the 2010 NEC target for Ireland. Road transport emissions are an example where projections based on expected reductions from Euro standards for vehicles had not been realised, and Leonidas Ntziachristos talked about key uncertainties in developing the COPERT model, and Jens Borcken from IIASA explaining how COPERT is used to define emission factors used in GAINS. Problems with road transport emissions continued in to a collection of papers on urban air quality, starting with Jan Aben and attainability of NO₂ limit values as well as NO_x emissions ceilings; and a forward look to Euro V/VI emissions from trucks in urban driving cycles. Having participated in an

intercomparison study of models used in the UK against measurements, UKIAM/BRUTAL had been applied to similar problems investigations of evolving emissions from road transport implying that increases in the fraction of primary NO₂ are as important as the increase in estimated NO_x emissions as real world measurements have become available. Work in the University of Stuttgart (Jochen Theloke) and in Spain for Madrid also addressed modelling combining different scales down to road-side concentrations; and Piotr Holnicki from Poland showed modelling for Warsaw with analysis of source apportionment and uncertainties.

The meeting concluded with Philippe Thunis from JRC Ispra outlining the FAIRMODE project focused on urban scale modelling, with specific work packages focused on evaluation of urban models and on emissions. NIAM modellers are encouraged to participate. Finally Bertrand Bessagnet from INERIS described progress in urban modelling for the EC4MACS project, with downscaling of the CHIMERE model to a 7x7 km grid and following a similar approach to the urban enhancement adopted previously in the GAINS model.

The meeting adjourned at 5.30 with thanks to IIASA for hosting the day and for the excellent food and wine tasting in a Heuringer which followed that evening.