



# JRC Newsletter

News Events Open positions

NOVEMBER 2009



## Thinking out of the Kyoto basket

In a few days, the world's leaders will meet in Copenhagen to tackle climate change. Their intense discussions will cover many aspects like economic development, technological and social issues. But the scientific background to COP15 talks – in terms of the pollutants consid-

ered and their impacts on the temperature of our planet – will be essentially the same as that of the talks in Kyoto, back in 1997. There will be difficult enough problems to resolve at COP15 without complicating the science any further, but there *have* been some significant scientific developments since Kyoto, which point the way to a new phase of policy issues to tackle in the period following COP15.

*"There are air pollutants, not included in the Kyoto 'basket', which nonetheless lead to global warming."*

Of particular importance in the next phase of climate change mitigation discussions is an emerging evidence: there are air pollutants, not included in the Kyoto 'basket', which nonetheless lead to global warming, *and* which also have adverse impacts on human health and the environment, vegetation and crops. Key examples are Black Carbon (BC) and tropospheric ozone. BC has an estimated ~650 times stronger warming effect than an equal mass of CO<sub>2</sub>. However, as BC has a relatively short atmospheric lifetime – of the order of days rather than several decades like the Kyoto greenhouse gases (GHGs), its impacts on climate as well as on public health will be regional. Consequently, some of the most efficient mitigation strategies are likely to be formulated at regional level. Tropospheric ozone has the third highest warming effect after CO<sub>2</sub> and methane, and is an air pollution problem at a range of spatial scales, from local to global. However, again, the first steps of developing an abatement strategy are likely to be most effective if built on existing policy instruments, most of which operate at regional level.

A workshop, organised last October by the Swedish EU Presidency, focussed on these air pollution and climate change interactions, building on an earlier meeting under the auspices of the Convention on Long Range Transboundary Air Pollution (CLRTAP) in 2008. At the same time, scientific assessments are under way on the so-called *short lived climate forcing* (SLCF) agents, one of them being organized by the UN Environment Programme (UNEP). Mindful of such scientific evidence, the October workshop in Sweden stated for the first time concrete advice for policy-related actions. Recognising the regional nature of the SLCFs, it recommended that in revising the Gothenburg Protocol, we should go beyond setting emission ceilings for sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia, that the revision should also address climate effects of air pollutants and SLCFs, including BC, CO and methane, and that CLRTAP should urgently create a dedicated group for this - to investigate the emerging physical and economic aspects. We will discuss these in the CLRTAP Executive Body in December, when revising the Protocol and the Long Term Strategic vision for the Convention.

Reducing the SLCFs however is not all a one-way street. There are difficulties in store, and to continue the motor-ing metaphor, there is a 'bumpy road' ahead as a recent study by the JRC has shown. As nations reduce emissions of sulphur- and nitrogen-oxides to protect human health and the environment, the cooling effect of the aerosols from these emissions will be reduced, leading to a short to medium term warming. This will give even more urgency and impetus to reduce both SLCFs *and* the longer lived GHGs (like CO<sub>2</sub>) adding further challenges for governments. Such policy issues at the air pollution/climate change interface will in turn pose questions for the science community - which the JRC and colleagues elsewhere are well placed to provide answers to over the next few challenging years.

PROFESSOR MARTIN WILLIAMS  
Chair, Executive Body of the UNECE Convention  
on Long Range Transboundary Air Pollution

## ENVIRONMENT

<http://peseta.jrc.ec.europa.eu/>

### Assessing the economic impact of global warming

If the climate expected in the 2080's occurred today, the EU would face yearly GDP losses between €20 and €65 billion, depending on the temperature increase in Europe (2.5°C to 5.4°C). This is one of the forecasts of the final report of the PESETA study, published by the JRC Institute for Prospective Technological Studies (IPTS). The PESETA study also looked at different regional impacts of climate change across the EU. Damages would occur mainly in Southern and Central Europe, while Northern Europe would be the sole region to benefit, in economic terms and for the aspects studied, from climate change.

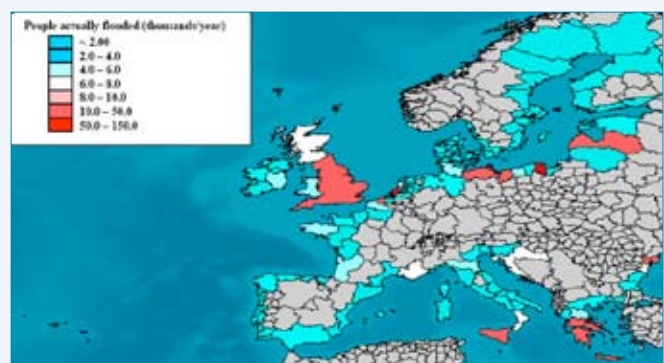
The final report of the PESETA project (Projection of economic impacts of climate change in sectors of the European Union based on bottom-up analysis), assesses the annual economic impact of climate change in Europe with regard to agriculture, river flooding, coastal systems and tourism, without considering adaptation policies.

In PESETA, several temperature and sea level rise scenarios for the 2080s are considered for Europe, with temperature increases ranging from 2.5°C to 5.4°C and sea level rise scenarios varying between 48 and 88 cm.

The research estimates that the overall damage to the EU economy (GDP loss) would be between €20 and €65 billion per year. The economic well-being (welfare) of Europeans,

which has historically grown at around 2% yearly, would improve less due to global warming. A temperature rise by 2.5°C could reduce welfare by 0.2% whereas a rise by 5.4°C could halve the approximate annual EU welfare growth.

The overall cost of global warming could be, however, much higher, as the study only focuses on four sectors of the economy and does not take into account non-market impacts in fields such as biodiversity and ecosystems or natural disasters. PESETA delivers a first approximation to the estimation of climate change damages, subject to many uncertainties in future climate characteristics and future economic structure.



Coastal systems: people actually flooded (1000s/year) across Europe, for the A2 Scenario, 2085 (ECHAM4, 5.4°C), without adaptation

## ENVIRONMENT

<http://www.ec.europa.eu/dgs/jrc/index.cfm?id=5420>

### Internationally harmonised test procedure for non-road engines adopted



The development of the new procedure included various tests under real-life conditions

A new test procedure for non-road mobile machinery (NRMM), developed by scientists at the JRC Institute for Environment and Sustainability (IES) in cooperation with experts, *inter alia*, from the United States, Europe and Japan, has been adopted as a global technical regulation by the United Nation's Economic Commission for Europe (UN-ECE) World Forum for Harmonization of Vehicle Regulations (WP.29).

Internationally harmonized test procedures for emission control contribute to reducing pressures on the environment and to more efficient use of energy. They also facilitate innovation and competitiveness by allowing manufacturers to develop engine models that can meet internationally consistent emissions regulations.

The new global technical regulation, which describes a worldwide harmonized full test procedure for measuring the emission performance of NRMM engines, follows the work of an international working group chaired by the JRC. It can now be used by any contracting party as a basis for harmonized emissions testing legislation. The European Commission, as contracting party, is already preparing implementation of the new harmonized procedure via an update of the relevant "Regulation 96". Elements of the global technical regulation will also be used for an amendment of the Directive 97/68 related to emissions from engines used in non-road mobile machinery.

The major aim of UN-ECE is to promote pan-European economic integration.

To this end, UN-ECE brings together 56 countries located in the European Union, non-EU Western and Eastern Europe, South-East Europe and Commonwealth of Independent States (CIS) and North America. All these countries interact and cooperate under the aegis of the UN-ECE on economic and sectoral issues. UN-ECE provides analysis, policy

advice and assistance to governments and gives focus to the United Nations global mandates in the economic field, in co-operation with other global players and key stakeholders, notably the business community. The UN-ECE also sets out norms, standards and conventions to facilitate international co-operation within and outside the region.

JRC-IES, with its Vehicle Emissions Laboratories (VELA) that comprise chemical and physical analysis labs as well as seven major testing facilities, has long-standing experience in providing scientific support to the development and revision of legislation, as well as for assessing new measurement techniques and procedures.

## TRANSPORT

<http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=2779>

### *Road infrastructure charging: case studies on selected corridors and main impacts*

The internalisation of external costs is a main priority of the EU transport policy. Charging heavy duty vehicles according to the “polluter pays” principle is one of the policy options used in an effort to reduce the negative impacts of transport on the environment. In parallel, the need to optimise the use of infrastructure, reduce congestion and increase the efficiency of the transport system can be met by the “user pays” principle. In this context, the European Commission is proposing the amendment of Directive 1999/62/EC on road infrastructure charging. The proposal foresees the application of charges on heavy duty vehicles that are proportional to the damage they cause in terms of pollution, noise and congestion. It also establishes the methodology to be followed for the estimation of external cost charges as well as the areas of their application.

The proposed amendment is currently being discussed between the European Commission, the European Parliament and the Council to ensure that the proposed measure meets the policy objective of reducing the external cost of freight transport while minimising the negative impacts for the freight transport sector and economy as a whole.

As part of the process, the JRC Institute for Prospective Technological Studies (IPTS) was requested to analyse additional corridors and indicators. The research carried out by the IPTS combined data from actual operations with models that simulate the level of charges under varying assumptions. It concludes that the overall benefits of charging for external costs outweigh the limited negative price impacts on individual transport operators.



*Reducing traffic congestion is one objective of road infrastructure charging*

## BIODIVERSITY

<http://www.teebweb.org/>

### *The role of healthy ecosystems and biodiversity for a more sustainable economy*

Nature’s capacity to provide vital services and functions such as fresh water, benign climate and natural ecosystems for recreational activities is often cheaper to sustain than having to invest in technological solutions to compensate for lost functions. Protecting and restoring biodiversity is also an essential step in the transition to a more sustainable economy, and protecting ecosystems can be a very cost effective measure for this purpose. This is confirmed by a report to policy makers presented by The Economics of Ecosystems and Biodiversity (TEEB) project, a major independent global study providing an economic angle to an environmental topic.

While the societal and economic benefits of healthy ecosystems are increasingly recognised, it is important to provide sound scientific definitions of ecosystem services. Most of the current measures and indicators of biodiversity and ecosystems were developed for purposes other than economic assessment. Therefore they do not show clear relationships between components of ecosystems, their biodiversity and the services or benefits they provide to people. The corresponding lack of relevant information is hampering the ability to fully assess the economic consequences of the loss of ecosystems and biodiversity.

The JRC Institute for Environment and Sustainability (IES), which has contributed to the TEEB report through work on “Measuring biophysical quantities and the use of indicators”, is strengthening its research efforts on understanding the properties of healthy ecosystems, methods for assessing land cover changes as well as the status of the marine environment around the world. The science-based mapping of ecosystem services, which logically comes before any useful economic evaluation will be an important aspect in IES’ work programme 2010. Such information is of key importance for monitoring the sustainable use of natural resources.

## NUCLEAR ENERGY

<http://www.iaea.org/inisnkm/index.html>

### *Fission and Fusion: common challenges in materials research*

The JRC's Institute for Energy (IE) and the International Atomic Energy Agency (IAEA) co-organised a topical meeting on "Development of new structural materials for advanced fission and fusion reactor systems". The meeting was held on 5-9 October and hosted by *Fusion for Energy* in Barcelona, in order to stimulate cross-fertilisation between fusion and fission materials research and between theoretical and experimental research activities. In total, 45 experts from 16 different countries participated in the meeting and presentations covered areas such as materials for nuclear fusion as well as innovative nuclear fission reactor systems.

Many of the challenges faced by materials research for next generation nuclear fission systems and by the thermonuclear fusion reactor are actually the same, in particular regarding high temperatures and levels of radiation damage which structural materials will have to withstand. This is why a variety of advanced materials are being envisaged for both applications and why materials development can benefit from cross-fertilisation.

The topical meeting aimed at improving the communication between the two distinct research communities.

## NUCLEAR RESEARCH

<http://irmm.jrc.ec.europa.eu>

### *The future of nuclear data research*

The JRC has co-authored a report which sets out recommendations for how the EU should tackle nuclear data research in the coming years.

High-quality nuclear data describing the nuclear reactions taking place in advanced reactors and the fuel cycle are essential for the design and safe operation of current and future nuclear power plants. The tight safety margins envisaged for new, advanced nuclear energy systems, such as Generation IV, put challenging constraints on the accuracy of nuclear data.

In anticipation of this need for an intensive programme of nuclear data

research, representatives from the research community and industrial end-users of nuclear data came together in the collaborative project CANDIDE. Their final report sets out a set of recommendations, or a roadmap, for sustainable nuclear data development:

- A long term commitment to modern nuclear data research in Europe;
- Support for the facilities that are capable of producing the required nuclear measurements and stimulation of high-accuracy measurements on key reactions of interest to advanced reactor development;
- To provide the capability for advanced nuclear model development;



*Low-scattering set up for activation studies at JRC-IRMM's Van de Graaff laboratory*

- To ensure flexible implementation of improved nuclear data libraries in nuclear technology and design.

## NUCLEAR ENERGY

[http://ec.europa.eu/energy/nuclear/forum/forum\\_en.htm](http://ec.europa.eu/energy/nuclear/forum/forum_en.htm)

### *Monitoring the status of human resources in the nuclear energy sector*

A European Human Resource Observatory in the Nuclear Energy Sector has been established by the European Nuclear Energy Forum (ENEF). The launch meeting took place in Brussels on 8 October and has started the process of the Observatory's implementation, for which the JRC's Institute for Energy (IE) presented an implementation plan.

JRC-IE will be in charge of the Observatory's operations, providing necessary infrastructure, networking and long-

term stability. Some of the activities will focus on set up and maintenance of a database and the conduction of regular analyses and reviews. Also, further tasks include the tendering of specific studies, production and the distribution of regular communications.

The mission of the Observatory is to provide qualified data and high-level expert opinion on short- and long-term needs regarding human resources in the nuclear field in the European

Union. To meet these objectives the Observatory should engage in several activities, some of which are:

- Regular reviews of new surveys and analyses on the human resource situation;
- Specification, tendering and quality management of specific studies;
- Organisation of workshops on specific subjects;
- Additional polls of European stakeholders, where required, in nuclear energy and nuclear safety.

## INFORMATION SOCIETY

<http://ipts/jrc.ec.europa.eu>

### *The impact of web 2.0 on economy and society*

The rapid growth of web 2.0, or social computing, allows users to play an influential role in the way commercial and public products and services are shaped. The report “The impact of Social Computing on the EU Information Society and Economy”, published by the JRC Institute for Prospective Technological Studies (IPTS), finds that in 2008, 41% of EU Internet users were engaged in social computing activities through Social Networking Sites (SNS), blogs, photo and video sharing, online multi-player games and collaborative platforms for content creation and sharing. This percentage rises to 64% if users aged under 24 only are considered.

The report shows that social computing goes beyond individual networking and entertainment, as it empowers tens of millions of Europeans to support their work, health, learning and citizenship in innovative ways. The research found that social computing is reshaping work practices, as employees join communities of interest outside their organisations to improve their knowledge and skills. Social innovation enabled by social computing contributes to improved lifelong learning processes, business competitiveness, social inclusion and integration of immigrants, among others.

The study highlights the trend towards more user-centric and effective services as well as new forms of civic and political participation. It also analyses emerging risks and challenges such as a new ‘digital divide’ as regards the skills required to fully benefit from the opportunities of web 2.0, and emerging threats related to security, safety and privacy.

The report argues that European policy-makers are well placed to set favourable conditions for the spreading of social computing practices and foresees that social computing will further evolve and grow into a fundamental part of the digital networked society.

## COMPETITIVENESS

<http://iri.jrc.ec.europa.eu/>

### *2009 corporate R&D investment: a global increase with EU companies leading US and Japan*

The 2009 EU R&D Industrial Investment Scoreboard is now available. World-wide corporate R&D investment has increased by 6.9% in spite of the economic crisis, according to the report. With an 8.1% increase, the R&D investment growth of EU companies, defined as companies having headquarters within the EU, is significantly higher than US ones for the second year, at 5.7%, and Japanese ones, at 4.4%.

Two EU companies feature in the top ten: Volkswagen in the 3rd place with an R&D investment of €5.93 billion and Nokia in the 8th. The world’s biggest investor in R&D was Toyota Motor, with €7.61 billion. The report also shows that companies from emerging countries have the highest R&D investment growth.

Part of the Industrial Research Investment Monitoring activity carried out jointly by the Joint Research Centre (JRC) and the Research Directorate-General (DG RTD) of the European Commission, the scoreboard is the fruit of research conducted by the JRC Institute for Prospective Technological Studies (IPTS), with overall monitoring and guidance provided by Directorate C (European Research Area: Knowledge Economy) of DG RTD.



*The 2009 EU Industrial R&D Investment Scoreboard is now available*

## INTERNAL MARKET

<http://ipsc.jrc.ec.europa.eu/news.php?id=53>

### *Cross border trading: improved tax procedures hold huge potential*

Improving tax procedures for cross-border trading of securities could raise European GDP by more than 37 billion Euro over a ten-year period. This is the key finding of a study jointly carried out by the JRC’s Institute for the Protection and Security of the Citizen (IPSC) and the Commission’s Directorate General Internal Market and Services which analyses the costs and benefits of the proposals made by the EU Clearing and Settlement Fiscal Compliance Experts Group (FISCO) for improving and simplifying withholding tax relief procedures.

Based on the FISCO proposals and backed up by the economic impact study, the European Commission adopted on 19 October 2009 a Recommendation that outlines how EU Member States could make it easier for investors resident in EU Member States to claim withholding tax relief on dividends, interest and other securities income received from other Member States. The Recommendation also suggests measures to eliminate the tax barriers that financial institutions face in their securities investment activities while at the same time protecting tax revenues against errors or fraud.



*Improved tax procedures for cross border trading of securities could raise European GDP by more than €37 bn over a ten-year period*

## COMPETITIVENESS AND GROWTH

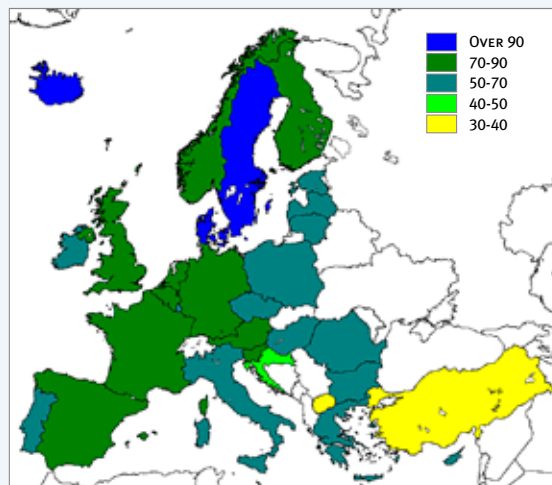
<http://crell.jrc.ec.europa.eu/>

### *Educational reform in the EU: progress too slow to meet targets*

Despite a general improvement in education and training performance in the EU, progress is too slow, which means that the majority of the reform targets set for 2010 will not be reached. This is the main conclusion from the 'Commission Progress Report towards the Lisbon Objectives in Education and Training - Indicators and Benchmarks 2009'.

This annual report, co-authored by scientists of the JRC's Institute for the Protection and Security of the Citizen (IPSC) - Centre for Research on Lifelong Learning (CRELL), looks at Member States' progress towards five key benchmarks in education and training for 2010.

- Although progress was achieved, four of the five 2010 benchmarks for education and training are not likely to be met. Only the benchmark on increasing the number of graduates in maths, science and technology was reached. Three benchmarks were not reached, despite the progress made: adults' participation in lifelong learning, reduction in the share of early school leavers, and increase in the numbers of young people completing upper secondary education. Regarding the performance in the reading ability of 15 year-olds, the researchers even noticed deterioration since 2000.
- On the positive side, the number of very young children in education has risen, as well as the overall participation in initial education and the education levels of EU citizens in general. The number of working age



*A composite indicator of participation in lifelong learning in European countries - 100 indicates full participation - CRELL, 2009)*

adults (aged 25 – 64) with low educational attainment has fallen by more than one million per year since 2000. Nevertheless, this still accounts for 77 million adults, or close to 30 % for the EU as a whole.

- Other areas where progress has been achieved include language learning in schools and the mobility of students in tertiary education, which has increased by more than 50 % since 2000.

## INTERNATIONAL COLLABORATION

<http://www.iaea.org/>

### *IAEA & JRC strengthen collaboration*

The International Atomic Energy Agency (IAEA) and the JRC's Institute for Energy (IE) strengthened their ongoing collaboration with the official signing, on 28 October, of a 'Practical Arrangement' which will allow both partners to further develop scientific and technical co-operation in the fields of nuclear safety, nuclear technology and energy planning issues.

In practical terms this will result in increased support of JRC-IE to the IAEA, enhanced co-operation and co-ordination of their mutual activities in the field of energy policy support.

Areas for collaboration include:

- Nuclear safety (for existing and future power reactors, and research reactors);
- Operational aspects of existing nuclear power plants, including operational experience feedback;
- Development of new nuclear technologies for power generation and other applications of nuclear energy in non-power fields;

- Modelling of optimal nuclear energy deployment, planning and investing, in the context of the overall energy systems, with special focus on energy security.

The official signing ceremony was held at the IAEA in Vienna on 27 October. JRC-IE Director Giovanni De Santi, IAEA Deputy Director General (Nuclear Safety & Security) Tomihiko Taniguchi and Yuri A Sokolov, Deputy Director General and Head of Nuclear Energy, signed the agreement.



*IAEA Deputy Director General Yuri A Sokolov and JRC-IE Director Giovanni De Santi sign the agreement in Vienna*

## INTERNATIONAL COLLABORATION

<http://irmm.jrc.ec.europa.eu/Turkey>

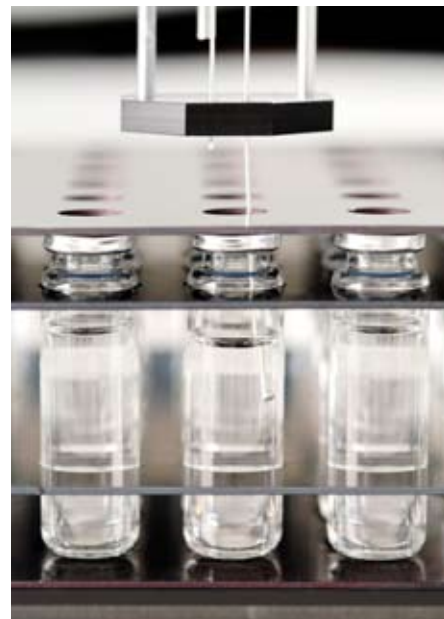
### Measurement science: collaboration with Turkey

A new project has been launched which will bring together European and Turkish experts in measurement science. The JRC Institute for Reference Materials and Measurements (IRMM) will work with scientists from the Scientific and Technological Research Council of Turkey (TÜBİTAK) and the Turkish Atomic Energy Authority (TAEK).

The three-year project is funded by the European Union under the instrument for pre-accession assistance (IPA), and it aims at providing Turkey's citizens an increased quality of life in areas such as environment, health, food safety and consumer protection through an enhanced measurement infrastructure. A well-functioning measurement infrastructure is also necessary for the adoption of the EU body of law and the project can thus be seen as supporting the accession of Turkey to the EU.

Through the project, the IRMM will provide consultancy, training and support to the highest metrological institutes of Turkey, i.e. the National Metrology Institute (TÜBİTAK-UME) and to the Sarayköy and Çekmece Nuclear Research and Training Centers (SANAEM and ÇNAEM) of TAEK. Scientists of the JRC Institute will also provide training in the field of chemical and ionising radiation metrology to laboratories and universities, in order for them to optimise the use of services they obtain from the National Metrology Institute, and to help them incorporate metrology-related subjects into educational curricula.

The science of measurement – also known as metrology – is probably the oldest science in the world, and underpins almost every aspect of our daily lives. From buying food in the supermarket to undergoing blood tests in



the hospital, it is almost impossible to go through the day without referring to weights and measurements.

## AWARDS & PRIZES

### Noise research

<http://ihcp.jrc.ec.europa.eu>

Xavier Valero Gonzalez, former trainee of JRC-IHCP, received one of the young scientists awards granted by the European Acoustics Association in 2009 for his work performed in the context of the 2008 IHCP exploratory projects on the development of pattern recognition techniques in the field of environmental noise.

### Public consultation on the nanotech research code of conduct

<http://europa.eu/sinapse/directaccess/science-and-society/e-debates/nano-recommendation-2010/>

The European Commission has opened a public consultation in order to receive input from all people and organisations involved or interested in nanosciences and nanotechnologies research in Europe, and notably researchers, policy makers, industry, media and civil society organisations. The online consultation is open until 3 January 2010.

The screenshot shows the JRC website interface with the following elements:

- Header: European Commission, Joint Research Centre, with navigation links (FAQ, Index, Contact, Search, Services, JRC website, Privacy statement, Legal notice).
- Navigation: At a glance, Activities, Press, News & Events, Download, Collaborations, Jobs.
- Main Content: A central banner for 'legislation - Serving society' with sub-sections: Research areas, Competitive activities, Scientific & technical reference function, Research4U, Project examples, Engagement & integration, Project browser, Providing reference, Implementation of Community law, Information collection and sharing.
- Headlines: 'EU energy efficient... stabilise electricity consumption', 'Europe's response to new challenges in disaster management'.
- Footer: 'EU-Eastern Europe: Towards a Partnership in Energy Efficiency'.

### Visit the JRC website to learn more about our activities!

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<http://ec.europa.eu/dgs/jrc/index.cfm?id=2090>

Find out about working opportunities at the JRC:

<http://www.jrc.ec.europa.eu/jobs>

Consult current calls for tender:

<http://www.jrc.ec.europa.eu/callsfortender>

## EUROPEAN DEVELOPMENT DAYS

STOCKHOLM, 22-24 OCT

SE

<http://www.eudevdays.eu/>

Over 6 000 people participated in the 4<sup>th</sup> edition of the European Development Days which covered a wide range of pressing issues in global development. With 1 500 organisations from the development community coming together with delegates from 125 countries – including Heads of State, leading world figures, and Nobel prize winners – it has been the most important event organised by the Swedish EU Presidency.



The JRC's contribution to the event was coordinated by its thematic programme Africa/ACP Observatory. The Africa Observatory uses geomatics and remote sensing techniques which provide support to the programming, design, implementation and evaluation of development policies and programmes. The precise knowledge of the status and trend of natural resources, of agricultural productions and of the overall framework of intervention is crucial for sustainable development, particularly in Sub-Saharan Africa in a climate change context.

Also presented at the event was the newly launched *Capacity4Dev* web site. This web-based knowledge management platform, developed by the JRC's Institute for Environment and Sustainability (IES) upon request of EuropeAid, aims to make technical co-operation in development policies more effective. It also supports the implementation of thematic projects.

## METIER FINAL CONFERENCE

BRUSSELS, 04-06 NOV

BE

[http://www.peer.eu/news\\_events/](http://www.peer.eu/news_events/)

The METIER final conference, co-organised by the JRC and the Partnership for European Environmental Research (PEER), was held 4-6 November in Brussels. The event was attended by 89 young scientists and 30 lecturers from all over the world discussing their latest research results on how to tackle the complex challenges of climate change, water availability, biodiversity and sustainable land use. One of the main purposes of the event was to provide training in entering into dialogue with practitioners and policy makers, getting to know their needs and how to respond to them.

The conference included a master lecture by Chief Scientific Adviser to the Irish Government Patrick Cunningham on: "Four Challenges or one? Population, Food, Energy, Climate". Professor Manfred Grasserbauer from the University of Vienna, former Director of the JRC Institute for Environment and Sustainability, opened the discussion on climate with his speech on "Climate Change: What we know and what we guess".

This final conference concluded a four year series of training courses on interdisciplinary skills for young environmental researchers.

## GEOMATICS IN SUPPORT OF THE COMMON AGRICULTURAL POLICY

TAORMINA, 18-20 NOV

IT

<http://mars.jrc.ec.europa.eu/mars/About-us/GeoCAP>

The 15<sup>th</sup> GeoCAP Annual Conference, organised jointly by JRC-IPSC and the Italian *Agenzia per le Erogazioni in Agricoltura* (AGEA), has gathered around 350 European experts to discuss the latest innovations in remote sensing technologies and their application for supporting agricultural subsidies controls. Since the introduction of remote sensing controls in EU regulations in 1992, satellite images have proved to be an efficient tool to verify that agricultural subsidies are correctly paid to farmers. In 2008, on a total of 8.3 million declarations made by farmers, 629,000 checks were performed on the spot, of which 55% were done using remote sensing imagery. The same figures are expected for 2009. Very High Resolution satellites or aerial *orthophotos* allow to accurately check the size of the land parcel, their cover type and possibly cover status, thus reducing considerably the need of physical checks in the farms and consequently contributing towards a more effective and efficient management of the Common Agricultural Policy (CAP).

EU Member States must ensure that payments to farmers are carried out and executed correctly to prevent irregularities (over claim or double claims) and

possibly recover amounts unduly paid. Therefore, Member States need a system to ensure a unique identification of farmers as well as all holding's parcels (the so-called Land Parcel Identification System - LPIS) and of animals. The control of the fulfilment of the criteria to receive subsidies is done through 100% administrative checks and through checks carried out on-the-spot (at least 5% of total number of farmers claiming direct subsidies). On-the-spot checks are carried out with the help of satellite imagery.

The JRC provides EU Member States with satellite images covering 285 sites in 25 EU countries (except Luxembourg and Finland) with a total area of 175,000 km<sup>2</sup> (on average 600 km<sup>2</sup>/site). The JRC also provides a range of technical support services to the European Commission's Directorate General Agriculture and Rural development and to Member State administrations, by developing common specifications, standard measurement and data management tools. It validates methods to reinforce the consistency of land parcel identification and measurement across the Union and in Candidate Countries.

## JRC OPEN DAY IN MALTA

MT

ST JULIANS , 22 NOV

[http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&obj\\_id=2970&dt\\_code=EVN](http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&obj_id=2970&dt_code=EVN)

A Memorandum of Understanding has been signed by Dr Nicholas Sammut, chairman of the Malta Council for Science and Technology, and the JRC Director General, Dr Roland Schenkel, in St Julians (Malta) on 20 November 2009. Both parties agreed to expand their exchange of knowledge and concluded to strengthen the partnership through hosting Maltese doctoral and post-doctoral candidates at JRC sites. Various fields of possible research collaboration were identified, including in particular environment, biotechnology, energy efficiency and food safety.

The signing took place on the occasion of the JRC Open Day in Malta which was attended by around 90 participants interested in science cooperation. The conference addressed the Maltese research and innovation system as well as the JRC's interest in an increased collaboration with Malta. As an opportunity to network, three technical visits to the Institute for Sustainable Energy, the University of Malta and the Malta Centre for Fishery Sciences were organised.



*Dr Nicholas Sammut and Dr Roland Schenkel signing the Memorandum of Understanding*

## THIRD CIVIL PROTECTION FORUM

BE

BRUSSELS, 25-26 NOV

<http://ec.europa.eu/environment/civil/forum2009>

The third Civil Protection Forum explored the concept of resilience. As climate change is likely to increase the frequency and impact of disasters, Europe has to focus on its preparedness in the emergency life cycle. Thus, the forum has opened

a debate on Europe's disaster management capacities. Around 500 delegates, speakers and exhibitors came to discuss Europe's response to the new threats to which Europe will need to respond effectively.



At the event, the JRC presented its activities in this field, such as the European Flood Alert System (EFAS) and the European Forest Fires Information System (EFFIS), as well as the Global Disaster Alert and Coordination System (GDACS). All these tools aim to increase European and global coordination for disaster management by using cutting-edge forecasting applications.

## UPCOMING

### USE OF REFERENCE MATERIALS AND THE ESTIMATION OF MEASUREMENT UNCERTAINTY

BE

GEEL, 27- 28 APRIL 2010

<http://irmm.jrc.ec.europa.eu/html/events/index.htm>

The training course will be held at the JRC Institute for Reference Materials and Measurements (IRMM) in Geel, Belgium on 27 and 28 April 2010. It provides participants with the theoretical basis for the estimation of measurement uncertainty and establishment of traceability. The course is intended for laboratory managers and practitioners

in analytical laboratories who use reference materials for statistical quality control, method validation and calibration and need to assess measurement uncertainties on customer's demand or as requirement of ISO 17025.

Participants need to register before 26 March 2010.

# JOBS AT THE JRC

RECENTLY PUBLISHED

(Applicants must submit their application no later than the indicated deadline.)

## Ispra, Italy

### Grantholder (Post-Doc researcher)

- Optimization of fisheries enforcement strategies – 13/12/2009
- RFID applied to the livestock identification and traceability – 13/12/2009
- Assessment of habitat models in protected areas and simulation of climate change impact on these habitats – 15/12/2009
- Exploiting environmental indicators in support to country/region assessment – 15/12/2009
- Statistical analysis of environmental indicators in support of decision-making – 15/12/2009
- Drought probabilistic / Ensemble forecasting – 15/12/2009
- Modelling forest resources under future climate change and land use scenarios – 15/12/2009
- Coupling of hydrodynamics, ecological and fate models – 15/12/2009

- Spatial data infrastructure - Risk mapping and visualisation of fuzzy concepts – 15/12/2009
- Spatial and temporal analysis of integrated quantitative and qualitative information – 15/12/2009
- Air quality model evaluation – 15/12/2009
- Quality assurance of air quality models in EU – 15/12/2009
- EC water knowledge management system for developing countries – 15/12/2009

### Grantholder (Senior researcher)

- Crop monitoring and modelling for food security early warning - 06/12/2009

### Seconded National Expert

- Scientific and technical support to marine and coastal studies - 15/12/2009
- Researcher in neutron interrogation – 15/12/2009



## Seville, Spain

### Seconded National Expert

- Innovation and sustainability in the transport sector – 15/12/2009

## Brussels, Belgium

### Seconded National Expert

- Programme manager on agriculture and natural resources – 15/12/2009



IMPRINT

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