

South African Participation in the European Union's Sixth Framework Programme for Research



european - south african science and technology
advancement programme

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SUSTAINABLE DEVELOPMENT, GLOBAL CHANGE AND ECOSYSTEMS



INTERNATIONAL COOPERATION IN SUSTAINABLE DEVELOPMENT

Sustainable development issues are intrinsically global by nature

Johannesburg hosted the 2002 World Summit for Sustainable Development (WSSD). Representatives of nearly 200 countries with widely divergent positions attended. The agreements reached in South Africa are a guide to action that will take forward the United Nations' Millennium Summit Declaration's goal of halving world poverty by 2015, and incorporate decisions taken by world bodies since the Rio Earth Summit in 1992. Among

the victories of the WSSD was the launch of over 300 partnerships, including 32 energy initiatives, 21 water programmes and 32 programmes for biodiversity and ecosystem management.

South African and European Union researchers are participating in a number of Sixth Framework consortia that talk to some of the WSSD actions.

The European - South African Science and Technology Advancement Programme (ESASTAP), a recently launched FP6 SSA project, seeks to promote science and technology networking and partnering between South African and European Union (EU) researchers (www.esastap.org.za).



Promoting Twinning of River Basins for Developing Integrated Water Resources Management Practices

Project participants:

The consortium comprises partners from Morocco, Algeria, France, Mexico, Sweden, Indonesia, Niger, Senegal, Turkey, Spain, Brazil, Uzbekistan, Belgium, Romania and South Africa.

Project overview:

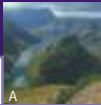
A Basin Organisation (BO) is generally regarded as one of the best solutions to adopt for developing an IWRM at a catchment level. By facilitating direct exchanges on best practices and on failed experiments, twinning can help

The TWINBASINXN coordination action, coordinated by the Institut International d'Administration de l'Eau in France, seeks to support effective use of research and development in the field of Integrated Water Resources Management (IWRM) by promoting twinning of Basin Organisations.

BOs improve their effectiveness. Through promoting the twinning of BOs, TWINBASINXN will create a world-wide forum dedicated to identifying and sharing knowledge and best practices.

South African project participant:

The South African representative on the TWINBASINXN project is the African Water Issues Research Unit (AWIRU) at the University of Pretoria.



TWINBAS

Twinning European and third countries river basins for development of integrated water resources management methods

The TWINBAS Specific Targeted Research Project is coordinated by the Department of Remote Sensing and GIS at the IVL Swedish Environmental Research Institute.

Project participants:

Representatives from Sweden, Kazakhstan, Chile, Denmark, the United Kingdom and South Africa make up the TWINBAS project consortium.

Project overview:

TWINBAS' strategic objectives are:

- To fill gaps in knowledge and methods in order to enable implementation of an IWRM approach that addresses the European Water Initiative, in 5 river basins
- To enable and perform assessment of vulnerability to climate change and anthropogenic development, and produce integrated river basin management plans that include optimal combinations of actions.

To reach these strategic objectives, a number of research tasks on hydrology, modelling of pollution flow, impact assessment, socio-economics, scenario analyses and action efficiency have to be carried through. For all these activity areas, the goal is to bring knowledge to a level where IWRM can be implemented for the 5 twinned river basins; Katanga (Botswana), Nora (Kazakhstan), Bio (Chile) Thames (UK) and Nordstrom (Sweden). The river basins selected represent a wide variety of water use problems, and a variety of political and societal systems.

TWINBAS will have an important strategic impact by creating the practical means for implementing the EU Water Initiative 'Water for Life'.



The research and the IWRM components of TWINBAS are organised according to the EU Water Framework Directive (WFD) so that the WFD guideline documents can be utilised. The proposal addresses the EU Water Initiative, which promotes development that is demand-led from the less developed countries. The strong component of public participation and

stakeholder involvement will ensure that each component has local ownership and addresses priorities identified within the region.

South African project participant:
The Institute for Water Research at Rhodes University is the South African representative on the TWINBAS project.



NEU-CO₂-III

Continuation of the "International Network Non-energy use and CO₂ emissions (NEU-CO₂)" Phase III

This Specific Support Action is coordinated by the Faculty of Chemistry, Department of Science, Technology and Society at the University of Utrecht in The Netherlands.

Project participants:

Partners in NEU-CO₂-III originate from The Netherlands, United Kingdom, Russian Federation, France, Poland, South Korea, Italy, Austria, Denmark, India and South Africa.

Project overview:

A significant fraction of fossil fuels is consumed as non-energy use, i.e. as feedstock for the manufacture of synthetic materials and chemical products, e.g. plastics, paints, solvents, lubricants and bitumen. In the long run, these products contribute substantially to CO₂ emissions. In Western Europe, non-energy use represents 11-12% of the total amount of fossil fuels for final consumption. In other parts of the world, the manufacture of non-energy products is increasing very rapidly, e.g. in China. CO₂ emissions from non-energy use continue to be a major source of

uncertainty in national greenhouse gas (GHG) emission accounting. The NEU-CO₂ network has been working on this issue since 1999.

Given the success of the network to date, the goals of Phase III are:

- To expand the existing network through inclusion of Chinese, German, South Korean and South African partners
- To develop the so-called Simplified Approach, which requires much less data than the NEAT model (developed in Phase I & II) and can hence be applied worldwide more easily
- To apply this approach to all countries represented in the NEU-CO₂ network and to evaluate the accuracy of the results by comparison with detailed country-specific estimation methods



- To pool bottom-up information on materials with complicated pathways in production, use, and waste management, such as solvents and lubricants
- To monitor the experience made with the improved IEA/EUROSTAT energy balance questionnaire and to make further steps towards harmonisation
- To initiate and accompany national analyses similar to those for the Netherlands, Austria and Flanders in Belgium
- To contribute to rewriting of the IPCC Guidelines for National GHG emission inventories in order to improve the terminology, remove ambiguity and contradictions and introduce improved estimation methods
- To disseminate the results by two workshops, the website and other means

South African project participant: South Africa is represented on the NEU-CO₂-III consortium by the Chemical Engineering Department of the Environmental and Process Engineering Research Group at the University of Cape Town.



WADE

Floodwater recharge of alluvial aquifers in dryland environments

Project participants:

The WADE consortium comprises researchers from Israel, Namibia, Germany, Canada, the United Kingdom and South Africa.

Project overview:

The WADE project aims to assess long-term (decades to centuries) water resources in selected semiarid to hyperarid ephemeral river basins by determining long-term transmission losses from floods and quantifying floodwater recharge into alluvial aquifers. An innovative approach will be applied based on 3 principal research themes:

The WADE Specific Targeted Research Project coordinator is the Consejo Superior De Investigaciones Cientificas, Centro de Ciencias Medioambientales in Spain.

- 1) Palaeoflood hydrology will be used to determine long-term flood magnitude and frequency in order to quantify the frequency of recharging flood events
- 2) Surface and sub-surface hydrology will be monitored in order to quantify transmission losses through the riverbed into the alluvial aquifers. The combination of these 2 methodologies will be able to quantify long-term aquifer recharge through flooding
- 3) The final research theme focuses on the socio-economic issues related to the use of alluvial aquifer groundwater within the study catchments. The research will be undertaken in 4 research basins, twinning catchments in Spain and Israel with study catchments in Namibia and South Africa.



South African project participants:
The South African organisations participating in WADE are the Kamiesburg Municipality, the Nama Khoi Municipality, the Surplus People Project, and the Leslie Hill Institute for Plant Conservation in the Botany Department at the University of Cape Town.



NeWater

New Approaches to Adaptive Water Management under Uncertainty

Project participants:

The NeWater consortium of investigators are from institutions in The Netherlands, France, the United Kingdom, Germany, Italy, Denmark, Switzerland, Czech Republic, Austria, Portugal, Belgium, Poland, Spain and South Africa.

Project overview:

The central tenet of the NeWater project is a transition from currently prevailing regimes of river basin water management into more adaptive regimes in the future. This transition calls for a highly IWRM concept. NeWater identifies key typical elements of the current water management system and focuses its research on processes of transition of these elements to adaptive IWRM. Each key element is studied by novel approaches.

This Integrated Project is coordinated by the Institute of Environmental Systems Research, University of Osnabrueck in Germany.

Key IWRM areas where NeWater is expected to deliver breakthrough results include:

1. Governance in water management (methods to arrive at polycentric, horizontal broad stakeholder participation in IWRM)
2. Sectoral integration (integration of IWRM and spatial planning; integration with climate change adaptation strategies, cross-sectoral optimisation and cost-benefit analysis)
3. Scales of analysis in IWRM (methods to resolve resource use conflicts; transboundary issues)
4. Information management (multi stakeholder dialogue, multi-agent systems modelling, role of games in decision making, novel monitoring systems for decision systems in water management)



5. Infrastructure (innovative methods for river basin buffering capacity, role of storage in adaptation to climate variability and climate extremes)
6. Finances and risk mitigation strategies in water management (new instruments, role of public-private arrangements in risk-sharing)
7. Stakeholder participation; promoting new ways of bridging between science, policy and implementation.

The development of concepts and tools that guide an integrated analysis and support a stepwise process of change in water management is the cornerstone of research activities in the NeWater project.

South African project participant: The Institute of Natural Resources in KwaZulu-Natal is the South African participant in the NeWater project.

FURTHER INFORMATION

To discuss South African participation in the FP6 Sustainable Development, Global Change and Ecosystems thematic priority, or the upcoming FP7 Energy, Environment and Transport themes, please contact:



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