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# NERC Support for Knowledge Transfer

## BARSC Workshop

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# Introduction

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- NERC: structure, organisation, scale
- Strategy 2007-2012
- Knowledge Transfer and economic impact
- KT schemes and examples
- Summary

# Introduction – facts and figures

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- One of seven Research Councils
- NERC delivers independent research, survey, training and knowledge transfer in the environmental sciences, to advance knowledge of planet Earth as a complex, interacting system.
- Cover the full range of atmospheric, earth, biological, terrestrial and aquatic sciences, from the deep oceans to the upper atmosphere, and from the poles to the equator.
- Our mission is to gather and apply knowledge, create understanding and predict the behaviour of the natural environment and its resources, and communicate all aspects of our work.
- Budget of £375 million a year. Approximately half of this goes to Universities and half is invested in NERC's own Research Centres.

Two key goals:

Supporting excellent science and Better exploitation

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# NERC Research Centres

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## **British Antarctic Survey (BAS)**

- *UK scientific research on & around Antarctic continent*



## **British Geological Survey (BGS)**

- *geo-scientific knowledge of UK landmass and its continental shelf*



## **Centre for Ecology and Hydrology (CEH)**

- *leading body in UK, terrestrial & freshwater environments*



## **Proudman Oceanographic Laboratory (POL)**

- *coastal & marine sciences*

Also Collaborative centres, mostly in universities  
major scientific facilities, data centres

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# NERC strategy 2007-2012

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NERC's major contribution will be in providing **foresight** of the future state of the environment to allow business, policy and society to make informed choices.

## Next Generation Science for Planet Earth



# Strategic goal by 2012

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“To deliver the scientific evidence needed for governments, business and society to respond urgently to the increasing pressures on natural resources and global climate”



## Science Goal

“UK to lead the world in the prediction of the regional and local impacts of environmental change from seasons to decades”



## Implementation Goal

“To create vibrant and integrated research communities delivering world-leading science and innovation”

# Science Themes

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1. Biodiversity
2. Earth system science
3. Climate system
4. Forecasting/mitigation of natural hazards
5. Environment, pollution and human health
6. Sustainable uses of natural resources
7. Technologies

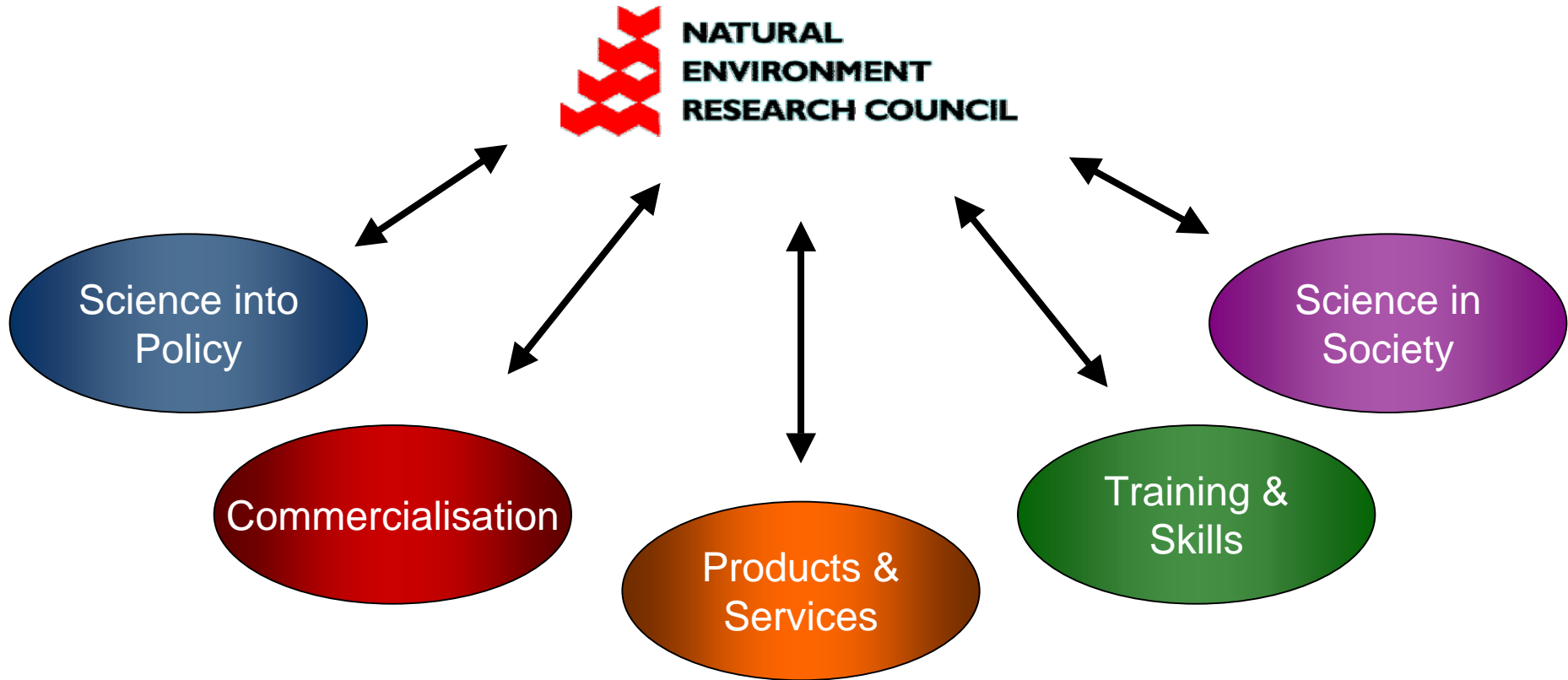
Also cross-cutting **Knowledge** theme

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# What is Knowledge Transfer?

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The exchange of 'knowledge' between the science base and its stakeholders:



# Warry Report

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## *“Increasing the Economic Impact of Research Councils”*



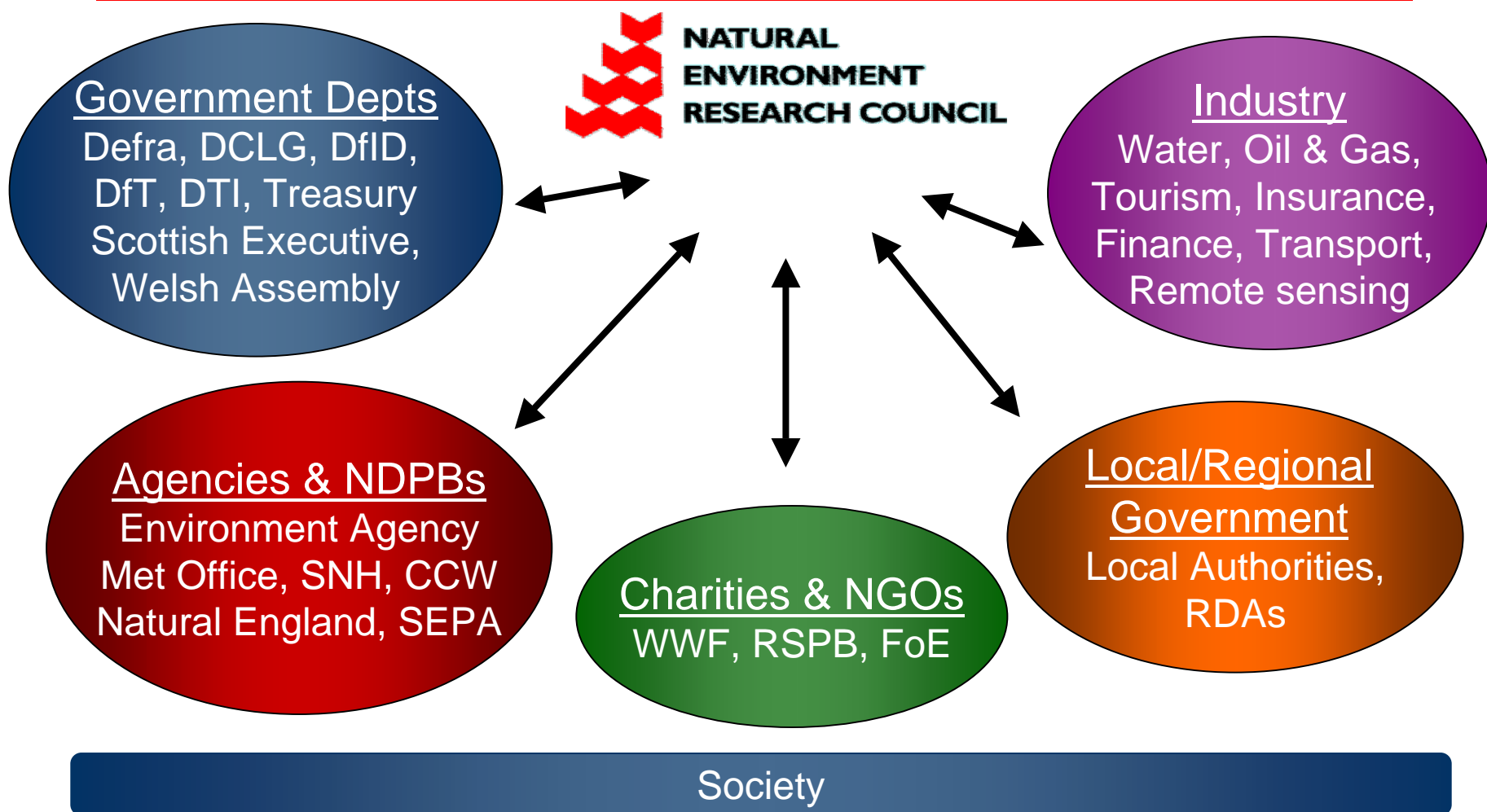
- High profile for economic impact in Council strategy
- Substantial funding for user-relevant programmes
- Peer review and potential economic importance
- Expand incentives for researchers to engage in KT
- Promote interchange of people and ideas
- Clear demonstration of the economic impact

# NERC and Knowledge Transfer

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- Build a knowledge transfer **culture** throughout NERC
- Strengthen **engagement** with our stakeholders
- Enable full **access** to our knowledge and data
- Ensure full **utilisation** of NERC-funded research
- Determine the **balance** between investment in science and in its utilisation
- ***Demonstrate** our **KT** achievements*

# Who are our 'Stakeholders'?



# NERC and Science to Policy

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- Interactions with government departments and agencies
- Advisory groups and committees
- Interactions with Parliament
- Training and Secondments
- Dissemination of science outputs
- Engagement in directed programmes
- Commissioned Research
- Informal interactions

## Tools

- Science to Policy Facilitator
- Stakeholder database
- Using NERC Science
- Peer Review College
- Output and Performance Measures

# NERC Knowledge Transfer Schemes

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**Knowledge  
Transfer  
Partnerships**

**Follow-on Fund**

**Knowledge Transfer Call  
Networks  
Good Ideas**

**Partnership Research  
Grants**

**POST PhD  
Secondments**

**Royal Society Industry  
Fellowships**

**Young  
Entrepreneurs  
Scheme (YES)**

**CASE Phd  
Studentships**

**Business Plan  
Competition**

**Collaboration in  
responsive mode  
research**

# Knowledge Transfer Call

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- Calls in 2004.2005 and 2006, each committing >£1m
- Next call soon.
- Broad range of eligible activities – secondments, facilitators, data management, networks, publications
- Public/private sectors partners are eligible as a project partner
- No minimum or maximum amounts or duration

# Knowledge Transfer Call – example 1

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## NCAVEO

Professor Milton, Southampton University

Project Partners: National Physics Laboratory, Surrey Space Centre and Plymouth Marine Laboratory

A network of scientists, engineers and applications specialists interested in the calibration and validation of remotely sensed data.



<http://www.ncaveo.ac.uk/>

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# Knowledge Transfer Call – example 2

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## Remote sensing to forestry: Translator/Facilitator.

Dr I Woodhouse, School of Geosciences, University  
of Edinburgh

Project Partners: Forestry Research and  
Forestry Commission

This knowledge transfer initiative aims to improve the exploitation and use of remotely sensed data (from aircraft and satellites) by the Forestry Commission and the forestry industry in general, by employing a dedicated science/technology Translator.

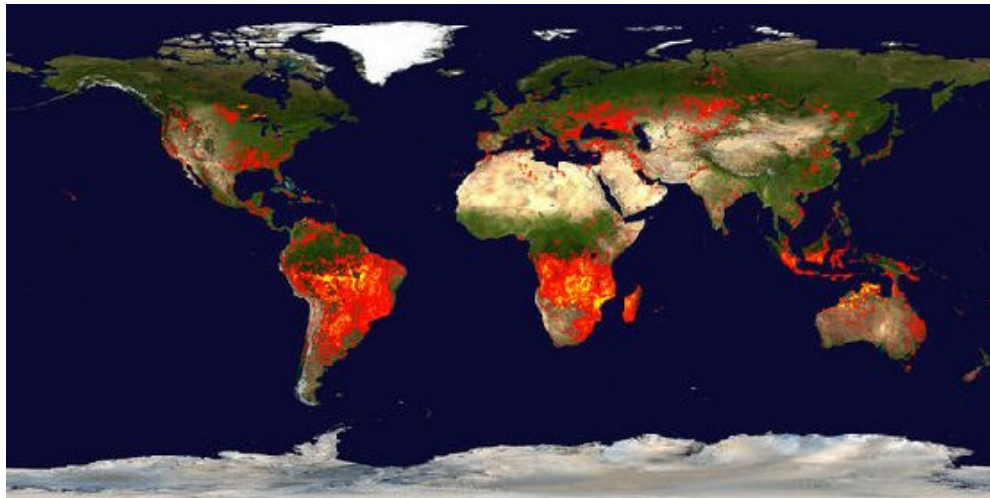
# Knowledge Transfer Call – example 3

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## A Global Geostationary Biomass Burning Emissions Estimation System for Use in Forecasting of Atmospheric State

Professor M J Wooster, Department of Geography, King's College London

Project Partners: Meteorological Office and European Centre for Medium-range Weather Forecasts



To design, build and evaluate the first system for the global geostationary observation of biomass burning emissions source strength

# Follow-on Fund

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- Fund to take the outcomes of previous Research Council work closer to commercialisation
- Project partner can be involved
- 12 months duration, no maximum amount of funds

## **GAVA (Geospatial Acquisition Visualisation & Analysis)**

Professor Holdsworth, Durham University

To enable the visualisation and analysis of data from Global Positioning System (GPS)/Geographic Information System (GIS) mapping methodologies. By using GAVA, digital data from a variety of sources (eg geospatially referenced field data, laser scans, remotely sensed imagery and seismic data) can be incorporated directly into a single data model.



# Partnership Research Grants

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- Collaborative Research (formerly Connect B)
- Project Partner must provide matched funding (cash or in kind)
- Assessed on science excellence (consideration given to project partner involvement)

Example

## **Surface Temperature of the Global Oceans**

Dr C Merchant, School of Geosciences, University of Edinburgh

Project Partners: Met Office and Defra

Creation of a new synthesis of all Sea Surface Temperature observations. This will be used at the Hadley Centre to revise the best estimates of the global pattern and rate of climate change over recent decades, and to better attribute observed climate change to its causes. It will allow government policy to be formulated on the basis of better information about climate change, and will feed into intergovernmental assessments about climate change science.

# CASE PhD Studentships

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- Two routes – (i) algorithm studentships and (ii) Open CASE competition
- CASE partner led – partner defines area of work
- CASE partner contributions (£1000p.a)
- Additional CASE partner contributions: involvement, training provided, hosting of student etc

## Example

**New cloud products from (A)ATSR(2) by fusing stereo photogrammetry and Optimal Estimation for improving the detection of global climate change from changing cloud-top height distributions after validation using ground-based radar.**

Supervisor: Professor Muller, Department of Geomatic Engineering, University College London.

CASE Partner: STFC, RAL (Space, Science and Technology)

# Conclusions & Opportunities

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- Research councils fund excellent research and postgraduate training
- User engagement is important to NERC
- Range of mechanisms for getting involved – strategy engagement, commissioned and collaborative research, peer review, KT schemes etc
- Research councils must achieve and demonstrate economic impact
- Tell us about your research needs

[www.nerc.ac.uk/using/](http://www.nerc.ac.uk/using/)

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