

# The Walker Institute and NERC

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- ① **The Walker Institute in the NERC funding environment**
- ① **The relationship of the Walker Institute to the National Centre for Atmospheric Science**
- ① **The importance and significance of multi-disciplinary research**
- ① **Scientific leadership, motivation and trust**

## Current NERC funding:

- ① 10 funding categories encompassing infrastructure, capability, data, research knowledge transfer, capital investment
- ① Funding for universities and research centres
- ① Research institutes generally funded on a fixed 5 year cycle (whatever the funding category) and universities generally on a more responsive but shorter time-scale.

## NERC will shortly move to:

- ① Longer term (and more secure) funding for *National Capability*
- ① More flexible funding for science programmes, of varying period depending on the programme. These will be increasingly *competitive* between research centres and universities
- ① Over time university research institutes will be able to compete with NERC owned centres for science programme funds

# The Walker Institute and NCAS

- ◎ The National Centre for Atmospheric Science (NCAS) is:
  - A NERC *Collaborative Centre* (15 geographical locations)
  - A NERC *Established Centre* (NERC intends long term support)
- ◎ About 40% of the NCAS staff are based in Reading at the former Centre for Global Atmospheric Modelling (now NCAS-Climate) and form a key part of the Walker Institute
- ◎ NCAS science emphasises science themes which cross discipline boundaries:
  - Climate processes, climate variability, climate change, regional impacts, water & climate, atmospheric composition and climate, anthropogenic influences on the atmosphere, weather processes & hazards, air quality, fundamentals of atmospheric chemistry
- ◎ NCAS technology emphasises the techniques to observe and model the atmosphere:
  - Computational science, numerical models, instruments, observations, facilities

# Climate Science – a Multi-Disciplinary Science

- ① Climate science is multi-disciplinary:
  - inter- *between*
  - intra- *within*
  - multi- *involving more than one*
- ② One of the most challenging problems in fundamental physics and chemistry:
  - Complex – many degrees of freedom – what is the average (space and time) effect?
  - Complicated – lots of physical, chemical and biological processes
- ③ The link to fundamental core disciplines of physics and chemistry, supported powerful mathematical techniques, is **essential** to successful multi-disciplinary climate research – especially the supply of trained scientists

# Leadership, Vision and Trust

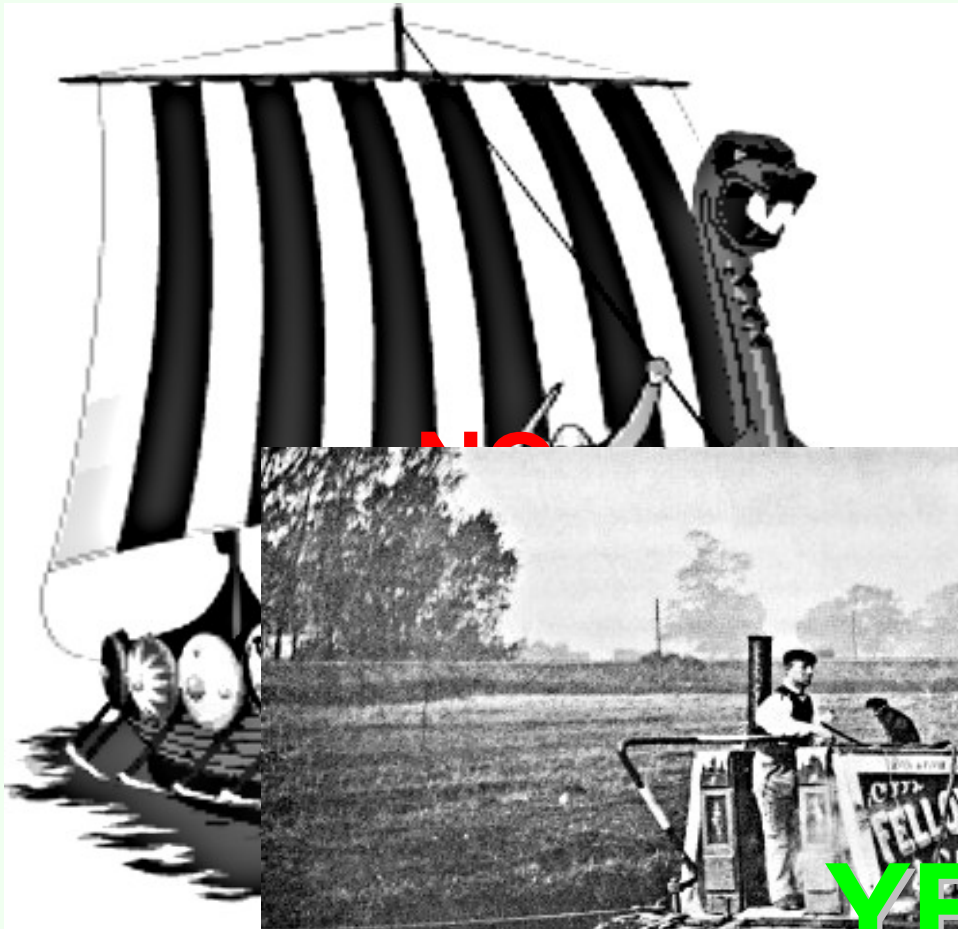
- ◎ How does one lead a multi-disciplinary initiative?
  - The vision – largely embodied in the Walker initiative
  - What do you want to achieve?
  - What people and facilities are needed to achieve it?
- ◎ Overwhelmingly the greatest asset is the people
  - Do you not just say it but believe it and live it?
  - What motivates the teams? It's all about managing people – especially in universities!
    - (1) The command economy – top down – power comes from enforced authority
    - (2) The exchange economy – bottom up – status comes from ownership as a basis for trade – in science this is the ownership of knowledge
    - (3) The gift economy – an adaptation to abundance – status comes from giving – imparting knowledge
  - Managing multi-disciplinary teams is a combination of (2) and (3)

# Leadership, Vision and Trust

- ◎ Reverse the decline in trust
  - Society increasingly characterised by a decline in trust
  - Increasing so-called accountability from transfer of concepts of financial audit
  - Increasing transparency (because technological advances mean that we can) go along with increasing ability to obscure (hence less trust)
  
- ◎ Science management doesn't work this way:
  - Breakdown of natural suspicions between disciplines requires a culture of trust (and an element of the gift culture)
  - Scientific research is creative – it doesn't happen without trust
  
- ◎ Don't forget that the impacts of climate science are not just knowledge transfer to policy makers – they are a serious and equally important academic discipline







NO



NO



YES