Swedish priority setting and the Grand Challenges

Priorities 2009-2012

Priority setting

- **High funding**
- **Large number of articles**
- **Decreased quality**

Quality

- **Institutional grants distributed based on quality**
  - External funding
  - Number of articles
  - Quality (according to Thomson database?)
- **Criticised but effective**
  - Internal evaluations of research quality
  - New priorities

Strategic priority research areas

- University priorities
- Priorities by research councils
- Priorities by businesses

- Independent experts
- Comparisons with other countries
- Suggestions from other ministries

Swedish Priorities

- **Medicine**
- **Engineering**
- **Environment and climate**

Strategic areas

1,8 bn to:

- Medicine
- Engineering
- Climate and environment
- Humanities, social sciences

- **1,315 bn to universities**
- **0,485 bn to research councils and Vinnova**

Strategic areas

- **Medicine – 585 mnkr**
  - bioscience – 190
  - stem cells – 65
  - diabetes – 70
  - neuroscience – 70
  - epidemiology – 25
  - cancer – 70
  - psychiatry – 25
  - medical care – 70

Strategic areas

- **Engineering – 650 mnkr**
  - nano science – 80
  - E-science – 70
  - material science – 65
  - aviation technology – 20
  - production technology – 70
  - transport – 160
  - ICT – 125
  - space – 20
  - security – 40

Strategic areas

- **Climate and environment – 535 mn**
  - climate models – 40
  - effects on ecosystem and biodiversity – 75
  - marine environmental research – 40
  - utilization of natural resources – 70
  - energy – 310

Strategic areas

- **Humanities & social science – 70 mnkr**
  - *security – 40*
  - economic growth – 10
  - politically important regions - 20

Research Infrastructure

- **XFEL, Fair**
- **Max-synchrotron, European Spallation Source**
- **SciLifeLab**
  - gene sequencing, protein expression, protein atlas

Max-synchrotron

- Material science
- Structure biology

European Spallation Source

- Neutron science
- Material science

SciLifeLab

- **Bio science**
- **Genetics**
- **Structural Biology**
- **LifeGene**

Priorities in FP7

- Health
- Food, Agriculture and Fisheries, Biotechnology
- Information and Communication Technologies
- Nanosciences, Nanotechnologies, Materials and new production technologies
- Energy
- Environment (including climate change)
- Transport (including Aeronautics)
- Socio-economic sciences and Humanities
- Security
- Space
- Infrastructure

Basic Research

- **ERC to continue but better use of results**
- **Exploratory research to meet Grand Challenges as was earlier NEST**

The Grand Societal Challenges to set Priorities on European R&D

- **Lund Declaration introduces concept of European R&D should meet the Grand Societal Challenges**

- **Why?**
  - Increased relevance to motivate new resources
  - Better linkage between research (supply) and market (demand)

- **What could they be?**
  - climate change
  - ageing population
  - shortage of food, water, energy
  - security
  - pandemics

Priorities on European level, the Grand Challenges an opportunity

- **How should we define Grand Challenges on European level?**
- **Criteria could be:**
  - Respond to broad and urgent societal needs
  - Threat to human and societal well-being
  - Opportunity to generate demand and lead to growth markets
  - Have European added value

National process started

- **Input from research councils/agencies**
- **Cooperation with Academy of Engineering Sciences**
- **Input from Stakeholders**
- **Grand challenges to be broken down in research/innovation tasks**
- **Result to give input to:**
  - Discussion on Innovation Partnerships
  - Discussion on FP 8

National process, some preliminary results

- **Sustainable cities;**
  - energy efficient buildings, new and refurbished
  - public transportation
  - supply of energy
- **Sustainable transport**
  - transport systems
  - vehicles
- **Energy**
  - renewable
  - smart grids
  - energy efficiency
- **Bioeconomy;**
  - biomaterial from agriculture and forestry
  - secure food
- **Use of chemicals**
  - Control of waste from chemicals and pharmaceuticals
- **Health and Ageing**
  - Efficient welfare systems
  - Diseases of aging population
  - Antibiotic resistant bacteria

National process, some preliminary results

Horizontal issues; how to meet global competition

- **Education and training**
  - Education and training in an ageing society
- **Knowledge transfer**
  - European patent
- **Service Sector**
  - How to increase use of research in service sector
- **Competitiveness**
  - ability to develop products that are competitive on the global market