

# EU Research and Innovation funding programme Horizon 2020

New opportunities for international  
cooperation targeting societal challenges



Strengthening Technology, Research and Innovation  
Cooperation between Europe and South Africa



# What is Horizon 2020?

## The **EU 8th Framework Programme – 2014-2020**

- Smart, inclusive and sustainable growth
- Jobs and competitiveness
- Innovation
- World and cross-cutting challenges

A major investment: around **70 billion Euros**

Integrated approach, including 3 pillars

- 1. Excellent science**
- 2. Industrial leadership**
- 3. Societal challenges**



# Horizon 2020: objectives

- Responding to the **major challenges** societies are facing
- A new **strategic, pluridisciplinary** approach
- Coupling research to **innovation**
- **Promote competitiveness, growth and job creation**
- **Simplify access to European funding (administrative and financial simplification)**



Strengthening Technology, Research and Innovation  
Cooperation between Europe and South Africa

# Horizon 2020: structure

## **Pillar 1: Excellence science**

- a. European Research Council (ERC)
- b. Future and Emerging Technologies (FET)
- c. Marie Curie Actions
- d. Research Infrastructures

## **Pillar 2: Industrial Leadership**

1. Leadership in enabling and industrial technologies
2. Access to risk finance
3. Innovation in SMEs

## **Pillar 3: Societal challenges**



# Horizon 2020

## Pillar 3: societal challenges

Health, demographic change and well-being

Food security, sustainable agriculture, marine and maritime research and the bioeconomy

Secure, clean and efficient energy

Smart, green and integrated transport

Climate action, resource efficiency and raw material

Secure societies: protect Europe and European citizens' liberty and security

Inclusive, innovative and secure societies



# Horizon 2020

## Pillar 3: societal challenges

### Why societal challenges?

- “Concerns of citizens and society/EU policy objectives (climate, environment, energy, transport etc)
- Breakthrough solutions come from multi-disciplinary collaborations, including social sciences and humanities
- Promising solutions need to be tested, demonstrated and scaled up”



# Horizon 2020

## Pillar 3: societal challenges

- Emphasis on funding for projects that solve specified challenges, as opposed to prescribing the specific research topics that must be addressed.
- In many cases: multidisciplinary, multi-actor actions that bring together different competences across Europe and beyond.
- The societal challenges identified for Horizon 2020 will provide a measure of continuity with the ten FP7 themes in the Cooperation programme.



# Sustainable food security

- Availability and access to safe and nutritious food
- Aquatic and terrestrial production systems and processing
- Eco-intensification, climate change and adaptation
- Global food security system
- Enabling technologies including space
- Whole food chain, both supply and demand





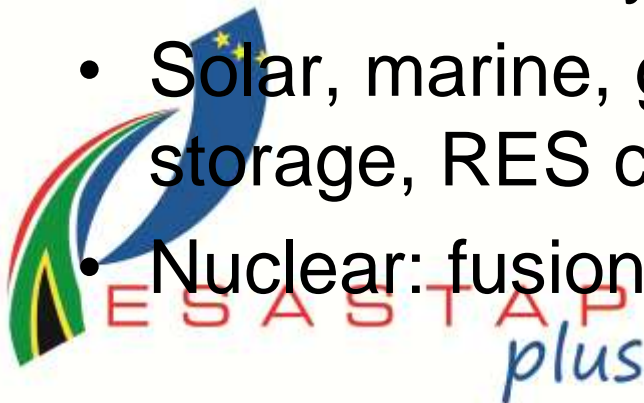
# Blue growth – unlocking potential of oceans

- Valorising diversity of marine life
- Sustainable harvesting deep sea resources (food, energy, minerals, etc.)
- New offshore challenges
- Ocean observation technologies
- Socio-economic dimension (marine and maritime economy – jobs)



# Competitive low-carbon economy

- Clean, secure, efficient energy systems
- Affordable and efficient solutions to decarbonise system and secure supply
- Smart electricity grids (transmission, distribution and storage)
- Biofuels and hydrogen and fuel cells
- Solar, marine, geothermal, carbon capture and storage, RES cooling and heating, wind
- Nuclear: fusion, safety, waste management



# Waste a resource to recycle, reuse and recover raw materials

- Innovative, environment-friendly, cross-sectoral waste management solutions
- Understanding environmental impact human activities
- Whole production and consumption cycle, waste prevention, disposal and re-use: organisation, management and behavioural changes
- Industrial manufacturing, energy, marine, agriculture
- Municipal waste, construction, demolition, high-tech products, bio-waste
- Sustainable extraction raw materials



# Water innovation

- Resource for human health, food security, sustainable development and environment, economy
- Technologies for risk assessment, mitigation, adaptation – Earth observation and ICT (floods, droughts)
- Waste water and drinking water treatment technologies
- Water reuse systems; closed water systems industry
- Enhanced desalination;
- Water and energy use efficiency
- Climate change and other stressors
- Improved materials (membranes)



# Social Sciences and Humanities

## **An integrated approach:**

- SSH included as integral part of activities
- The challenge 'Inclusive, innovative and secure societies': issues such as smart and sustainable growth, social transformations, social innovation...



Strengthening Technology, Research and Innovation  
Cooperation between Europe and South Africa

# International Cooperation in Horizon 2020

## Projects in societal challenges and industrial leadership

- Targeting of topics to specific countries or regions based on common interest
- Joint calls and co-funding of programmes with international partner countries (third countries) or international organisations

## Excellent science

- Marie Skłodowska-Curie Fellowships
- Development of global research infrastructures
- ERC Grants open to researchers from all over the world - research to be carried out mostly in EU Member States or Associated Countries



# International Cooperation in Horizon 2020

## **Dedicated cross-cutting actions – Inclusive, Innovative and Secure Societies challenge**

- Support for bilateral, multilateral and bi-regional policy dialogue
- Networking and twinning activities - to facilitate partnering and competence building
- Coordination of EU and MS/AC international cooperation policies
- Strengthening of European presence in international partner countries

**In H2020, South Africa will remain under the same rules of participation and funding as in FP7**



Strengthening Technology, Research and Innovation  
Cooperation between Europe and South Africa

# Key websites

## **ESASTAP Plus**

<http://www.esastap.org.za>

## **Cordis**

Official source of information on research and technology

[http://cordis.europa.eu/home\\_fr.html](http://cordis.europa.eu/home_fr.html)

## **Participant Portal**

Single entry point for participants in EC-funded research projects

<http://ec.europa.eu/research/participants/portal/page/home>

## **DG Research & Innovation website**

Information on H2020

<http://ec.europa.eu/research/horizon2020/>



**ESASTAP**  
plus

Strengthening Technology, Research and Innovation  
Cooperation between Europe and South Africa