The role of science in SDGs

The Technology Mechanisms

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• SOME Infos on ENEA;
• SDGs description and current data;
• The Technology Mechanisms as a mean to foster Science, Technology and Innovation (STI)
• Conclusions
About us


- It is a public RTO (Research and Technology Organization) operating in the fields of energy, environment and new technologies to support Country’s competitiveness and sustainable development.

- ENEA’s mission is to search for new technological solutions to meet the societal challenges, fostering transition to the Green Economy.

- The institutional mandate of the Agency is to disseminate and transfer knowledge, innovation and technology to industry, institutions and civil society at large.
Research and Development

Energy Technologies
Renewable energy sources, Energy efficiency Sustainable fossil fuels, Energy policy, Nuclear Fusion

Environmental Technologies
Prevention and Recovery, Climate change, Eco-innovation of productive systems, Waste and water management, Air quality, Modelling

Enabling Technologies
Nanotechnologies and new materials, biotechnologies, photonics, sensors, ICT

Agri-food, Health and Safety Technologies
Innovation for the agro-industrial chain, Radiation biology and human health, Radiation protection and metrology
Research facilities and staff

Research facilities

- 9 Research Centres
- 5 Research Laboratories
- 43 pilot plants and test facilities
- 11 local offices
- Brussels Liaison Office
- Headquarters in Rome

Human Resources

2775 permanent staff (31/12/13):

- 2033 in Technical Units
- 411 in Research Centres Directorates
- 306 in Central Unit
- 25 in other staff Units
An integrated vision of sustainable development

UN Global Agenda and the Sustainable Development Goals (SDGs)

- 17 goals
- 169 targets
- 240+ indicators
The situation we want to modify

- 800 M live in extreme poverty
- 250 M children are analphabet
- 700 M don’t have clean water
- 800 M are undernourished, 11 M OCSE Countries
- 50% of people don’t have a secondary education
- Half of agriculture production is wasted
- 700 M don’t have electricity
- 12 M hectares of desert increase per year
- 0.5 M control 90% of resources
- 1,400 M don’t have access to electricity
- 8% disappeared species, 22% at risk
- 600 M are overweight
- 200 M are unemployed
- 1,5 M has 5% world GDP
- 80% untreated used water
Paragraph 123 of the Addis Ababa Action Agenda and paragraph 70 of the Post 2015 Development Agenda Outcome Document called for establishing a Technology Facilitation Mechanism.

The mechanism will comprise:
- a UN interagency task team on STI for SDGs;
- a collaborative annual multi-stakeholder forum on STI for SDGs;
- an online platform as a gateway for information on existing STI initiatives, mechanisms and programs.
CTCN Mandate, Services and Structure

Mandate
CTCN mission is “Stimulating technology cooperation and enhance the development and transfer of technologies to developing country Parties at their request”

Services:
1. Technical assistance to developing countries
2. Knowledge sharing and training
3. Fostering collaboration on climate technologies (including linking climate technology projects with financing opportunity”)

Structure:
CTCN hosted by UNEP in collaboration with UNIDO and supported by 11 partner institutions with expertise in climate technologies
CTCN Technical Assistance

Adaptation Requests by Sector

- Agriculture/Fisheries: 28.6%
- Water: 14.3%
- Ecosystems: 28.6%
- Monitoring: 28.6%

Mitigation Requests by Sector

- Energy: 55.6%
- Transport: 22.2%
- Waste: 11.1%
- Cross-sectoral: 11.1%
WHAT PVS ARE ASKING FOR

- Conduct feasibility studies for specific known climate technology options (22%)
- Increase diffusion of known technologies in local conditions (12%)
- Design sector specific roadmap or strategy (11%)
- Enhance law, policy and regulatory reform recommendations (9%)
- Enhance finance facilitation and market creation (19%)
- Identify and prioritise technology (19%)
- Strengthen research and development of new climate technologies (8%)
IMPACT ON SDGs

SOURCE: CTCN, 8° AB Meeting
Impact sometimes can be predicted: the technological cycle

ENEL Archimede 5 MWe

Industrial Demonstration plant

2010

Demo design and construction

2009

Components test and qualification

2008

Prototype Operation start-up

2007

Prototype Operation start-up

2006

Prototype Design

2005

Test facility PCS

2004

Prototype Operation start-up

2003

Lab R&D

2002

Project Start-up

2001

70 employers

Government role

Industrial role
Sometimes some astonishing results of research can be observed over time: Renewable Energy Employment by Technology

- Solar Photovoltaic: 2,772
- Liquid Biofuels: 1,678
- Wind Energy: 1,081
- Solar Heating/Cooling: 939
- Solid Biomass: 822
- Biogas: 382
- Hydropower (Small): 204
- Geothermal Energy: 160
- CSP: 14

8.1 million jobs in 2015

International Renewable Energy Agency
Conclusions and considerations for the roundtable

• Paris Accord has been deeply a Science based set of decisions. Needless to restate the role of science in SGDs attainment; a world without science, technologies and innovation would be a boring repetition of always the same dynamics (the contrary of what the SDGs process is asking for);

• Technology Mechanism could be a mean to foster STI but is not the silver bullet, research needs more focused financing (labs, human resources, need for a adequate and predictable level of financing);

• the STI we are looking for involves a multitude of disciplines and their integration (physics, chemistry, biology, medicine and pharmaceutics, economy, statistics, social and political science) and also some transdisciplinary science – transitional science;

• A worldwide action plan on STI, adequately financed and evaluated, should be set;

• The UN interagency task team on STI for SDGs could help in drafting a program trying to match demand and offer of research
Main issues to be treated during the round table

- Why are science, technology and innovation essential for the achievement of SDGs
- Main opportunities and challenges for maximizing the contribution of science to SDGs
- Main elements for action plans and roadmaps for science for SDGs
- Deployment of existing and new solutions
- What LCS-Rnet can do to help the process
Technologies considered in TNAs in relation to adaptation

- Agriculture & forestry - 82.4% of Parties
- Water - 66.2%
- Health - 46.5%
- Coastal zone - 47.1%
- Other

Per cent of Parties

- Crop management
- Land management
- Irrigation
- Improved drainage
- Past management
- Livestock
- Fishery
- Forestry
- Non-technological
- Water transfers
- Water recycling
- Water harvesting
- Other (soft)
- Monitoring - 57.4%
- Other
- Improved sanitation
- Improved water treatment
- Improved diagnosis
- Control of mosquitoes
- Heat stress
- High wind extremes
- Hard structural options
- Soft structural options
- Indigenous options
- Other
- Emergency planning
- Improved drainage
- Emergency planning
- Modifying codes and practices
- Protection of land and houses
- Other
- Various retreats
- Natural disasters
- Protective structures
- Preservation of riverbeds
Technologies considered in TNAs in relation to mitigation
Ex-ante impact of research almost unpredictable

Charles Townes