



Responses to Environmental and Societal Challenges for our Unstable Earth (RESCUE)

Forward Look -
 an ESF-COST “*Frontier of Science*” initiative

(June 2009-Dec. 2010)

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v. 2009-09-08



Participating ESF Standing Committees, ESF Expert Boards and COST Domain Committees

Standing Committee for Life, Earth and Environmental Sciences (**LESC**) – *leader*

Standing Committee for Social Sciences (**SCSS**)

Standing Committee for Humanities (**SCH**)

Standing Committee for Physical & Engineering Sciences (**PESC**)

Marine Board (**MB-ESF**)

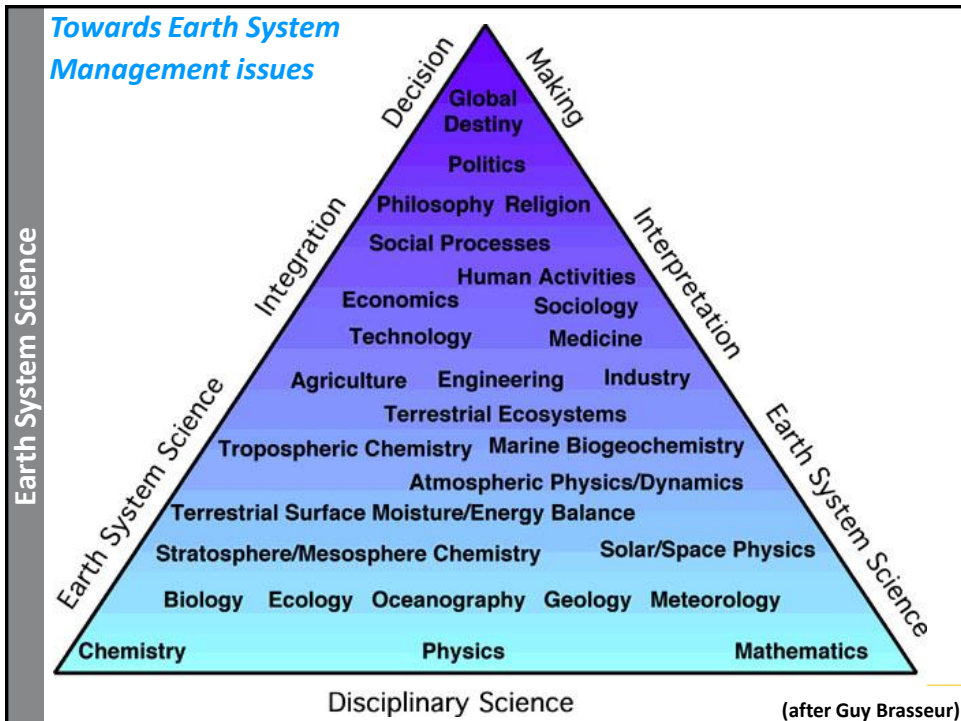
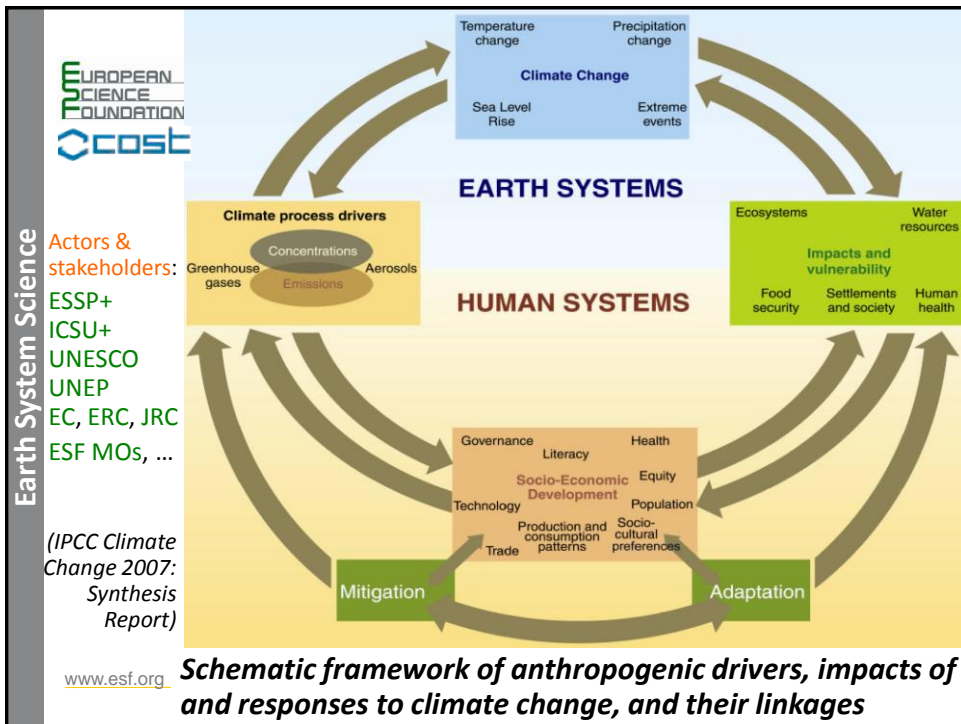
European Space Sciences Committee (**ESSC**)

European Polar Board (**EPB**)

Earth System Science and Environmental Management (**ESSEM**)

Individuals, Societies, Cultures and Health (**ISCH**)

Forests, their Products and Services (**FPS**)

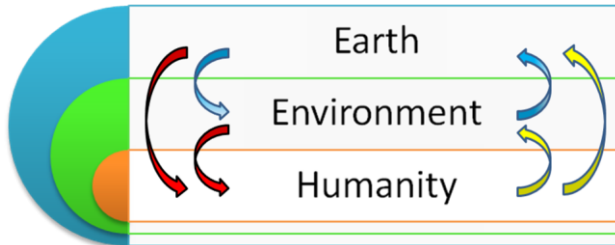




“Responses to Environmental and Societal Challenges for our Unstable Earth” (FL RESCUE)

– Summary

- environmental and societal challenges related to global change;
- integrated response from natural, social and human sciences;
- enable the scientific community, together with other actors and key stakeholders;
- develop medium to long-term strategies for future research activities;
- impact society by favouring common strategic understanding and coordination, and transformative education delivery;
- help ensuring global sustainable governance.



Relationships between Humanity, its Environment and the Earth, considered as parts of the Earth System.

The **blue** and **yellow** arrows respectively represent well and partially studied relationships, while the **red** arrows stand for the effects of **Global change on Humanity** that are still to be investigated.

Earth System Science = **study of the Earth System**, with an emphasis on observing, understanding and predicting global environmental changes involving interactions between land, atmosphere, water, ice, biosphere, societies, technologies and economies.

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(ESSP definition, 2007)



RESCUE Objectives and SSC

1. propose a strategic process for natural, social and human sciences (for interdisciplinary synergy; for societal and policy-relevant needs);
2. articulate new scientific issues related to global change (especially trans-disciplinary nature and society-driven relevance);
3. explore new approaches towards interdisciplinary science (to facilitate the 'revolution' in education and capacity building).

RESCUE Scientific Steering Committee

Chair: Prof. **Leen Hordijk** (EC-JRC Institute for Environment and Sustainability, IT)

Vice-Chair: Prof. **Gísli Pálsson** (Social and Environmental Anthropology, U. Iceland, IS)

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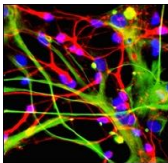
RESCUE Objective #1

1. To propose a strategic process for natural, social and human sciences to improve their **interdisciplinary synergy** in order to respond efficiently to policy-relevant and societal needs:
 - integrate all **research field** related to **global change**, for **sustainable governance**;
 - **societal recognition** of the urgent need for **mitigation and adaptation**;
 - consider the **societal needs and drivers**;
 - develop an **open forum** and promote **participatory approaches**;
 - **local-to-global** perspectives and **emphasis on regional** studies.

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RESCUE Objective #2

2. To articulate scientific issues related to **global change**, especially those of **trans-disciplinary** nature or of major **society-driven** relevance:
 - identify **new, emerging, neglected** or **insufficiently supported areas** in global change research;
 - provide **incentives**, for appropriate funding and support mechanisms;
 - develop systemic, integrated **recommendations** and **priorities**.



RESCUE Objective #3

3. To explore new approaches towards interdisciplinary science, and to facilitate the 'revolution' in **education and capacity building**, it requires, especially in Europe:
 - mobilise **research and education** communities,
 - **cooperate** with existing international activities;
 - overcome the **national and disciplinary fragmentation**
 - **reinforce links** across science-monitoring-assessment-policy,
 - **best practices** and **common targets** for research and education;
 - involve **learned societies, universities, private sector** and **NGOs**;
 - **critical evaluation** of current curricular and administrative barriers;
 - develop **implementation plan**, and **monitoring** of progress, outcomes and their impacts.



RESCUE – main axes of activities

The proposed foresight study is especially organised around a series of topics and **Working Groups**:

- *new, emerging, and neglected Science Questions;*
- *collaboration between the **natural, social and human** sciences in global change studies;*
- *requirements for research **methodologies and data**;*
- *towards a ‘revolution’ in **education and capacity building**;*
- *interface between **science and policy, communication and outreach**.*



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RESCUE Working Group 1

New, emerging and neglected scientific questions in RESCUE remit

Chair: Joseph Alcamo (KN); Vice-Chair: tbc

To gather a critical mass throughout Europe, for innovative, systemic and integrative science and to contribute to better informed decision making and global sustainable governance.



RESCUE Working Group 2

Collaboration between the natural, social and human sciences in global change studies

Chair: Rik Leemans (NL); Vice-Chair: Sierd Cloetingh (NL)

To develop a strategic vision to break down the individual and institutional barriers that hamper collaboration across Europe between scientific disciplines.



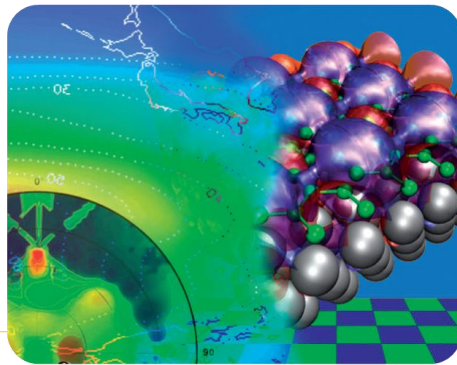
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RESCUE Working Group 3

Requirements for research methodologies and data

Chair: Claudia Pahl-Wostl (DE); Vice-Chair: Theo Toonen (NL)

Global change science is crucially dependent on observing and monitoring many natural, social and human processes, and on conceptualising and modelling them at different space and time scales.



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RESCUE Working Group 4

Towards a 'revolution' in education and capacity building

Chair: Karen O'Brien (NO); Vice-Chair: tbc

In education as in science related to global change, the dualism of nature and culture is clearly a great challenges for the next generation of researchers and citizens.



RESCUE Working Group 5

Interface between science and policy, communication and outreach

Chair: Jill Jäger (AT); Vice-Chair: Frans Berkhout (NL)

Researchers have developed best practices, scientific consensus and targets that can feed into research policy development for the benefit of policy makers and other stakeholders.



Additional representation

Ex-officio SSC members

- **Patrick Monfray** (FR), representative of the initiator agency
- **Alan Jones** (IE), LESC member & ESF liaison person
- **Ipek Erzi** (TK), DC ESSEM Vice-Chair and COST liaison person

Observers at the SSC

- **Sonja Lojen** (SI), LESC member (“*delegate representative*”)
- **Ole John Nielsen** (DK) / **Maria Kaminska** (PL), PESC members
- **John Ingram** (UK), deputy ESSEM liaison person
- **Göran Collste** (SE), ISCH member
- **Giuseppe Scarascia-Mugnozza** (IT), FPS member
- ...

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RESCUE current development

(late June 2009)

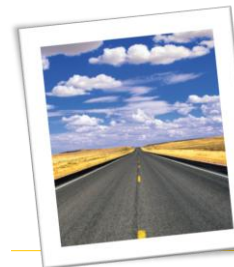
- **Initial idea** submitted by CNRS in January 2008
- Three small, **preparatory meetings** in 2008
- One **scoping meeting** in February 2009
- **Proposal** submitted in March 2009 to the ESF Science Advisory Board (positively **recommended**)
- **Proposal** submitted in April 2009 to the ESF Governing Council (**approved**)
- Invitation for **FL Chair** and **Vice-Chair** positions (**done**)
- Formal COST commitment secured, late May 2009 (**done**)
- Invitation of 5 WGs’ Chairs and Vice-Chairs (**done**)
- Setting-up of the WGs’ membership (**on-going**)

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RESCUE tentative roadmap

RESCUE Roadmap

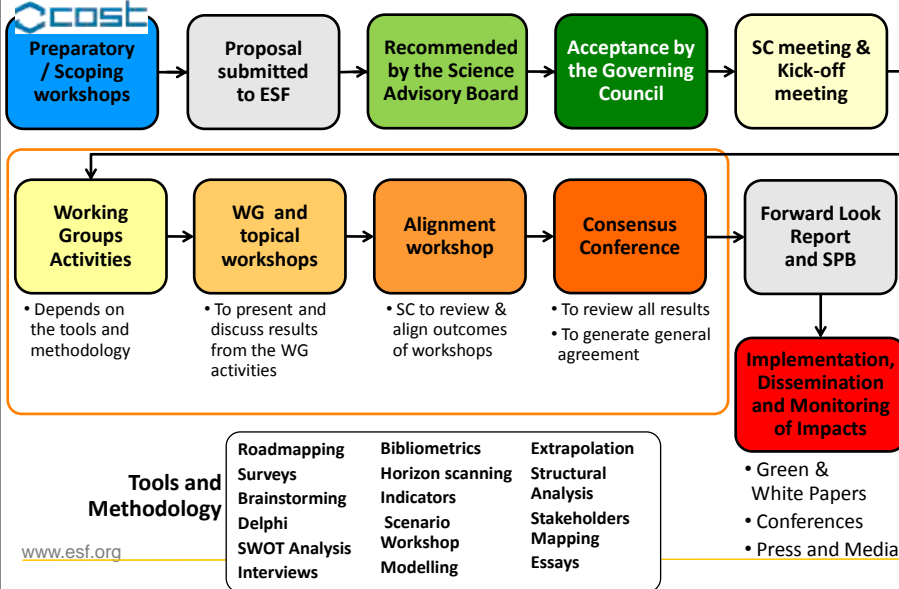
- ✓ Scientific Committee meeting (9 September 2009)
- ✓ Kick-off meeting & start of FL activities (10-11 Sept. 2009)
- ✓ WG workshops and activities (fall 2009 → spring 2010)
- ✓ Alignment Workshop (late spring 2010, tbc?)
- ✓ Consensus Conference (early summer 2010, *during the Spanish EU Presidency, tbc?*)
- ✓ Final Conference (winter 2010, *during the Belgian EU Presidency, tbc?*)
- ✓ Final FL report + SPB (in winter 2010, tbc?)
- ✓ further Implementation and Dissemination activities & Monitoring of Impacts (2010-...)

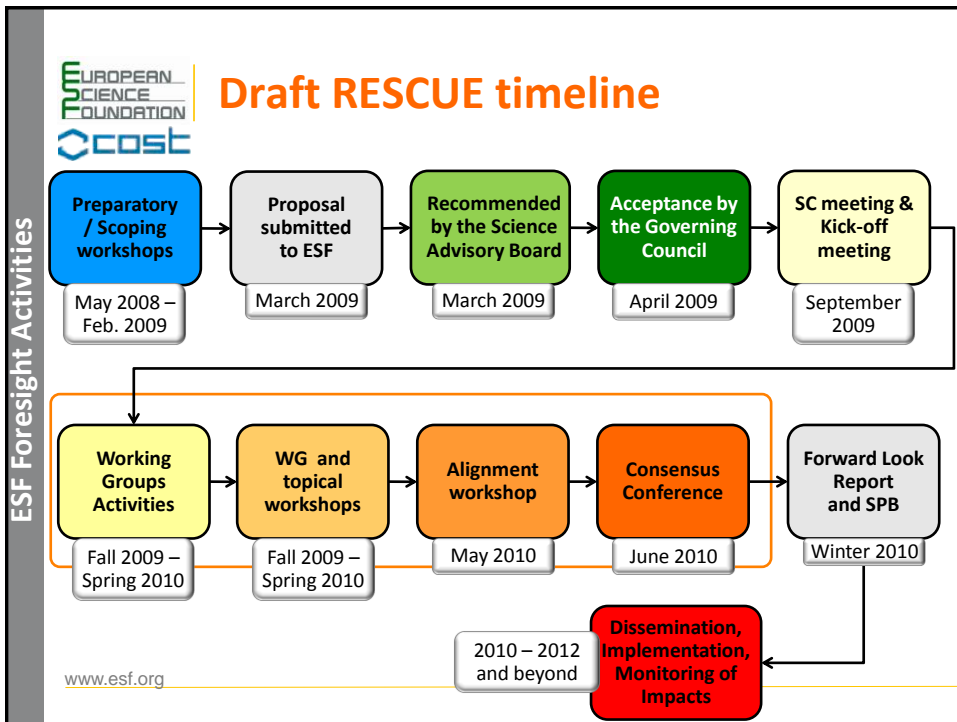


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Forward Looks process & activities

ESF Foresight Activities





Forward Look RESCUE

EUROPEAN SCIENCE FOUNDATION

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European Cooperation in Science and Technology (COST)
 Dr. Carine Petit / Dr. Laurence Jassogne
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