

Green Issues Sustainability and FRS Strategies

The image features a central view of the Earth from space, showing the Americas. This globe is enclosed within a thin, golden circular border. Surrounding this border is a thick, dynamic ring of fire with bright orange and yellow flames, set against a dark background. The overall composition suggests a global crisis or a warning about climate change.

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Preparedness**

Bergen September 2011

Green Issues and the FRS

Presentation Overview

Three Key Issues

- 1** ***Contribution to Sustainability***
- 2** ***Concern about the Physical
Environment***
- 3** ***Challenges from Climate Change***



A central image of the Earth, showing the Americas, is surrounded by a thick, glowing ring of fire. The fire is orange and yellow, with a dark blue outer edge, creating a sense of intense heat and danger. The background is black.

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The Green Landscape

Our World has change and so must we

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1997 Kyoto

United Nations Framework Convention on Climate Change

Binding targets on 37 countries to reduce GHG to 5% less than 1990 between 2008-2012 in force 16 February 2005 with rules defined in 2001 called the Marrakech Accords with the Intergovernmental Panel on Climate Change

2010 Cancun

*Keep temperature rise below 2°C - Encourage reduction in GHG
Promote clean technology - Help developing and vulnerable nations
Build capacity systems institutions – Protect World's forests
Be transparent*



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Contribution to Sustainability



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Contribution to Sustainability

Focus Upon Generic Solutions

- **Reduction in Carbon Footprint and Greenhouse Gases**
- **Adaptation to Climate Change**
- **Energy Consumption and Efficiency**
- **Renewable and Sustainable Energy**
- **Waste reduction and recycling**
- **Reducing demand on Natural Resources**



Contribution to Sustainability

- **Community Safety and Operational actions to reduce carbon emissions, protect the environment and reduce vulnerabilities in community**
- **Targeted energy and water usage**
- **Transportation policies to reduce fuel demand**
- **Investment in sustainable energy sources**
- **Planning in procurement and buildings**
- **Promotion of culture monitoring and training**



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Concern about the Physical Environment



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Concern about the Physical Environment

New Buildings

- **Design**
- **Materials**
- **Equipment**
- **Building Techniques**

Existing Buildings

- **Material Assessments [EG Timber Joints]**
- **Supervision and Workmanship [Quality]**
- **Interpretation of Standards [Cost and competence]**
- **Risk Assessment [Inspection in construction]**



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Concern about the Physical Environment

Green Buildings

- **Site Landscape**
- **Building Access Fire access Escape Layouts**
- **Building Materials**
- **Difficult to know Compartmentation**
- **Grass Solar and PV Roofs**
- **Shuttered Flame Spread Accessibility**
- **Sustainable Energy batteries and turbines**
- **Isolation Safety**



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Photovoltaic Systems



1000 M² = 100Kw

Covering cells doesn't
stop power generation

Hazmat Boron
Phosphorus Arsenics

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Concern about the Physical Environment

Green Buildings

- **Glazing and Cladding Systems**
- **Air tight Insulated Mixed Materials**
- **Engineered Constructions**
- **Regulations and Controls Defects and Quality**
- **Ventilation and energy systems**
- **Heat Wind Bio Mass**
- **Waste water and recycling systems**
- **Contamination Integrated Systems**



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The Dimension of SOCIAL NETWORKING

Accepted Worldwide use to offer real time web services and live streaming of activities

Offers value and conflict as demonstrated by

Climate Awareness - Arab Spring - England's Riots

Ability to issue and manage a central message

versus

***Inability to control individual or sponsored postings
and lack of capacity to respond to mass messaging or
visual imaging***

facebook

twitter

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Further control of the Green Environment

- **Design Codes and Standards**
- **Understanding structural stability and spread in buildings**
- **Effective isolation of electrical power from sustainable systems**
- **Awareness of food generating ethanol fuels**
- **Limitations on wildland urban interface**
- **Better training with electric automotives**
- **Use of social networking and public technical information sources**
- **Risk assessments to reduce liabilities and risk**

Bridging the Gap: Fire Safety and Green Building Guide

***National Association of State Fire Marshals
www.greenbuildingfiresafety.org***



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UNDERSTAND AUTOMOBILES

Fire and Rescue Strategies



TATA MOTORS MiniCAT Urban Car

Air Car Compressed air driven pistons On the street this year

Cost €14,000 with Tubular glued chassis fibreglass body

1/10 of running cost Twice the distance of electric cars 2-300 km or 10 hours with an air refill in 2-3 minutes at special garages costing €3 or 3-4 hours using on board compressor

Top speed 105 Kmph Oil change 50,000 Km Exhaust air AC

National Fire Protection Association
One Batterymarch Park
Quincy, MA, USA 02169-7471

*Plug in
Hybrid
Electric
Vehicle*

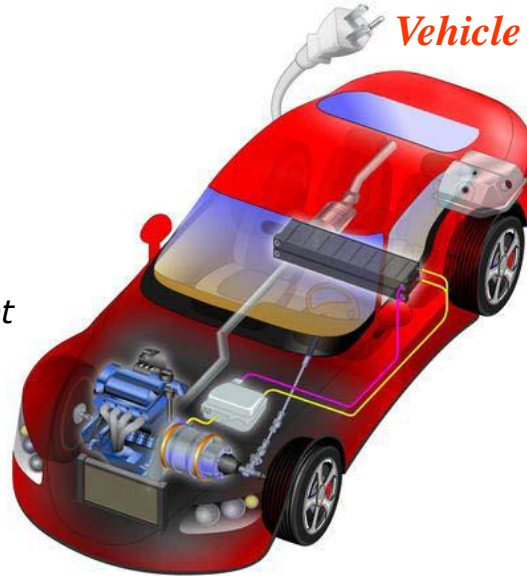


Photo courtesy of NREL Photographic Information Exchange

www.evsaftytraining.org

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Challenges from Climate Change



***Europe Community Reference 560 million people 27 Countries
2.7 million Firefighters***

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Social Challenges from Climate Change

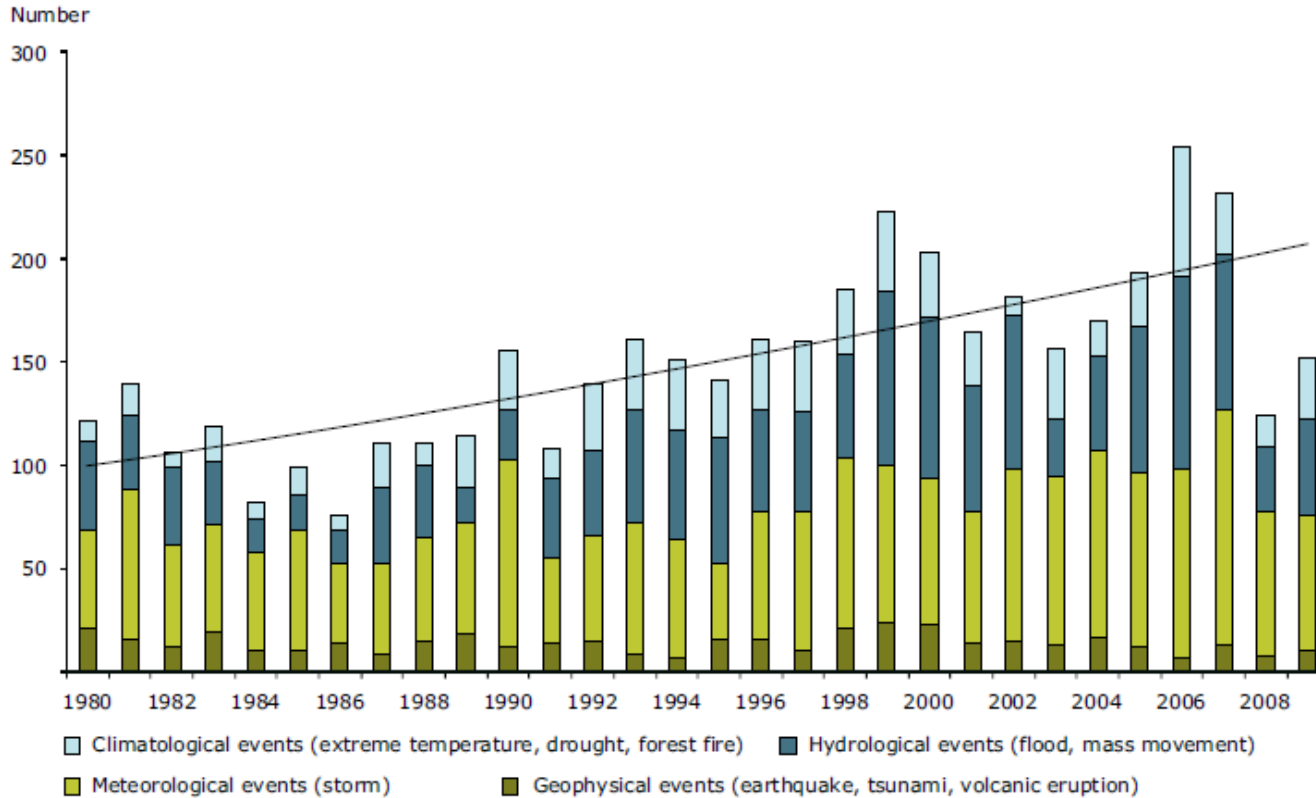
- **Affects Safety and Security**
 - **Large scale migrations**
 - **Increased border tensions**
 - **Spread of disease**
 - **Conflicts over food and water**

Between 2007-09 there were 23 military and civilian missions and 66 civil protection responses by the EU

- **Creates Risk and Tensions**
 - **Higher temperature**
 - **Extreme weather**
 - **Soil degradation**



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Europe's Primary Concerns:

Climate Hydrological Meteorological Geophysical

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Specific Threats

1997 Borneo and Sumatra fires

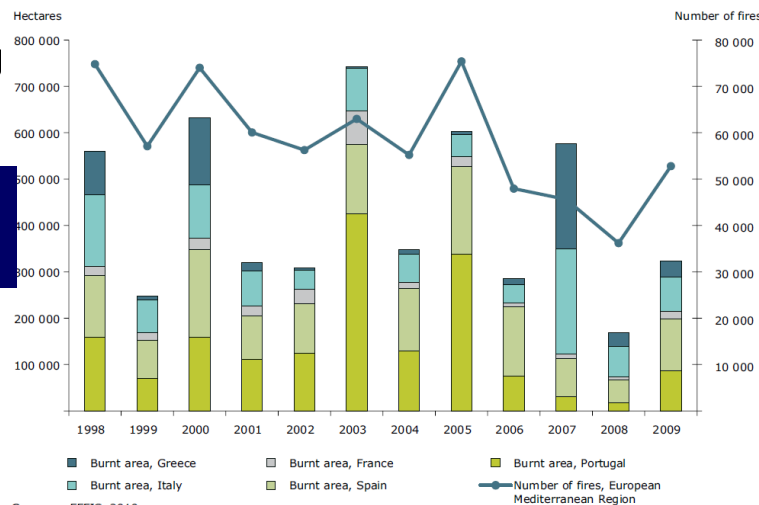
GHG emission = 1 year of European GHG

Forest and Wild fires

- Southern Europe Asia Americas Australasia
- Non harmonised policy and practices exist
- 70 000 fires every year in Europe
- 0.5 million hectares burnt
- Urban interface frequently involved
- Fuel maps training resources developed
- Global community emerging

European Wildfires 1998-2009

Greece Italy France Spain Portugal



Source: EFFIS, 2010.

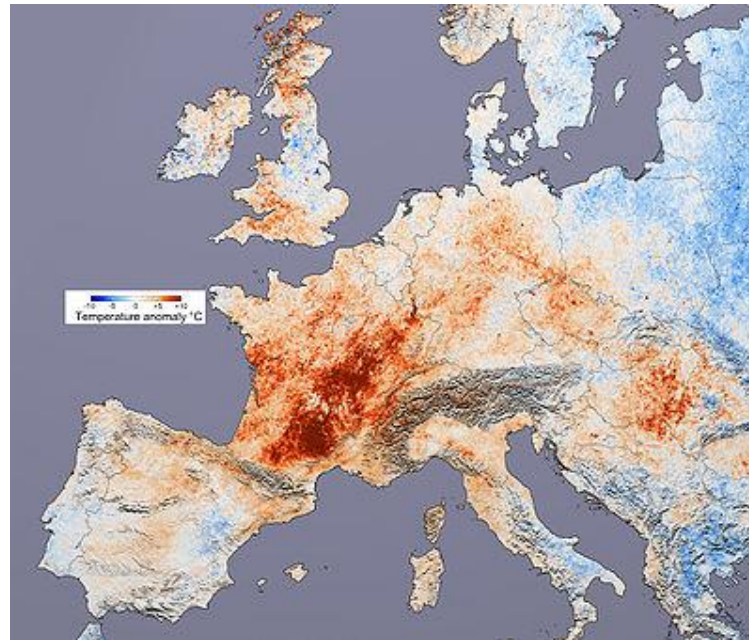


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Specific Threats

Extreme Temperature

- **70,000 deaths in 30 years in Europe from heat**
- **1,900 deaths in 10 years in Europe from cold**
- **Elderly infirm and socially deprived at greatest risk**
- **Frequency and intensity increasing**
- **Few heat health plans**
- **Often slow response and poor understanding**
- **Monitoring public health often weak**



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Specific Threats

Seismic Activity

- Often aggravated by land use management
- 70 major landslides a decade in Europe
- 17,000 deaths in Turkey in 1999 28,000 in Japan
- Well understood phenomena with building codes and preventative practices
- Rain and Landslides
- Tsunami and Earthquakes
- Rescue mobilisation critical to survivability
- Monitoring and alerting essential



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Specific Threats

Floods and Storms

- **Frequency and economic cost increasing**
- **Mississippi Elbe Rhine Bangladesh floods**
- **Europe and America suffer major insurances losses from storms**
- **Nordic and North American Ice Storms**
- **Death to rainfall trend not too apparent**
- **Occurrence of storms not discernable**
- **Europe and USA becoming better organised**
- **Infrastructure protection crucial**
- **Integrated risk planning logistics and special resources required**



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Specific Threats

Tsunamis and Volcanoes

- **Japan**
- Societal cohesion evident
- Planning parameters exceeded
- Food implications
- Economic issues
- Public Private Residential Insurance
- Inward aid reception

Iceland's Eyjafjallajokull Volcano

- Economic Impact €2.5 Billion
- Air travel disruption 8 weeks



***Due to social and functional interconnectivity the
More Urban a Society = More Vulnerable***



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Summary



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Fire and Rescue Strategies

The Paradox

Some of the **technologies** we use to save our World present the FRS with **RISKS**

but

Some of those same **technologies** may however present opportunities to enhance FRS performance as **TOOLS**

and

The accepted use of varied Strategies and Tactics may limit performance



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Fire and Rescue Strategies

Better Tools

UAV and RCV robotics

Fuel cells for hand tools

Helicopters and Intelligent cars

Alert and Alarm Reverse 112



Innovative

Risk Assessment Platforms

Systems of systems and data fusion centres

Satellite and improved visual situational awareness

IT and Communication resilience and interoperability

Mutual capability and capacity building



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Fire and Rescue Strategies

Better Use of Technology



Consolidate

**Develop one integrated strategy for meeting challenges
concerns and threats**

Areas for Improvement

Citizen awareness education and training

Funding and Strategic Oversight

Logistics and Intelligence Gathering

Policies and Communities of Practice

Coordination and Interoperability

Reception to External Offers



Framework 7 Research Programme

CRISYS Project

CTIF Consortium Partner

Project Aim

Demonstrate an **integrated and scalable** crisis management system capable of providing **comprehensive situational awareness** to decision makers to ensure a **timely, coordinated and effective** response in **defined and novel** disaster situations.

The demonstration to be effective will be short and offer a **practical solution**.

www.crisys-project.eu

www2.ipta.demokritos.gr/crisys/



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Thank You for listening



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