

Chapter 45

CAMCE: A Framework for Climate Adaptation and Mitigation

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ABSTRACT

There is a growing need to collaborate at national and European level for solutions connected with risks and problems due to climate changes. This need is leading to creation of Web platforms in which experts, stakeholders, decision-makers and overall citizens can collaboratively share information. This common information space on the Web can be used for planning, managing, evaluating and using services devoted to the protection and safeguarding of critical infrastructures (i.e. the supply of energy and water, sewage system maintenance). Keeping this purpose in mind, the chapter proposes a framework that provides a web-based collaborative opportunity for decision support, program management and collaboration for climate adaptation, mitigation and citizens' education.

INTRODUCTION

Global temperatures are expected to rise in the near future from 4 to 6 degrees (Richardson et al., 2009). This rise in temperature will produce unacceptable environmental, economic and social consequences. At the same time, as the effects will escalate in extreme weather, water, food, energy shortages, it will be important at

various levels (urban, regional, and so on) to be prepared for and create resilience to the impacts of climate changes (Braasch, 2007). Being resilient to climate change depends on collaboration across many players in business, industry, society and the government (Dow & Downing, 2006). These include: policy makers, scientists, policy implementers, businesses, civil society and other stakeholders. Achieving interoperability will be a powerful enabler of global response to climate change (Robinson, 2005).

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Keeping this purpose in mind, this chapter proposes a framework named CAMCE (Climate Adaptation, Mitigation and Citizens Education) that enables policy makers, scientists, policy implementers, businesses, civil society and other stakeholders to participate in environmental management and control. Such framework, it is hoped, will improve awareness, education and trust in environmental management and in risk management within the governance processes.

In particular by using Web 2.0 and Web 3.0 technologies, the CAMCE framework implement structured Social Network communities as interactive methods for monitoring and supporting crisis situations and producing organized documentation by a coordinated decision process (Murugesan, 2007). These technologies will facilitate contact among experts, stakeholders and decision-makers permitting the involvement of citizen's organizations and volunteer associations in order to enhance the efficiency of the management of services. The understanding, acceptance and contribution of political decisions define the resiliency of a society (Buckle et al., 2001). Inadequate information about climate change, opaque procedures and lack of public participation in decision-making can lead to severe criticism and distrust of decisions. These problems contribute to a lack of trust in policy. The involvement of citizens can assist policy makers in developing better policies to create better, safer living environments. The CAMCE framework provides a space where citizens and experts can share data and information in a common manner, from all physical locations and at any time throughout the lifecycle of policy development and implementation. This framework, therefore, has the potential to make the decision making process more democratic and at the same time increasing the level of trust and likelihood of acceptance and successful implementation. Furthermore, the CAMCE framework will allow decision makers to improve the people awareness about the climate changes, transforming consequently their habits and quality life.

BACKGROUND

Global warming is a reality as evidenced by Bowermaster (2007). These include the following:

- the Average temperatures that have climbed 1.4 degrees Fahrenheit around the world since 1880,
- the rate of warming that is increasing: according to the United Nations' Intergovernmental Panel on Climate Change (IPCC) reports "11 of the past 12 years are among the dozen warmest since 1850" (United Nations' Intergovernmental Panel on Climate Change, 2007).
- the Arctic that is feeling the effects: according to the Arctic Climate Impact Assessment report "the Average temperatures in Alaska, western Canada, and eastern Russia have risen at twice the global average" (ACIA, 2004).
- the Arctic ice that is rapidly disappearing,
- the glaciers and mountain snows that are rapidly reducing themselves,
- the coral reefs that suffered the worst bleaching ever recorded in 1998, with some areas seeing bleach rates of 70 percent,
- the upsurge in the amount of extreme weather events, such as heat waves, wild-fires and strong tropical storms.

The International Scientific Congress on Climate Change in March 2009 stated that the speed and impact of global warming is exceeding the expectations of the 2006 Stern Report (Richardson et al., 2009). The increase in temperature over the 20th century is likely to have been the largest for any century in the last 1000 years. It is very likely that nearly all land areas will warm more rapidly than the global average, particularly those at high northern latitudes in the cold season (Chehoski, 2006).

This scenario implies many risks such as:

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