ABSTRACT

Solutions to Mitigate Flood Risk and Benefit Ecosystems: Incorporating Ecosystems Services Tools and Methods

Flooding losses in the United States can be expected to exceed $20 billion annually. Many players contribute to decisions in floodplain management and flood mitigation and reduction. By and large, however, the current economic assessments of flood damages, and actions to reduce those flood damages, consider only a narrow range of costs and benefits. This narrow scope may preclude innovative flood-risk reduction projects and hinder the development of more holistic flood management that can both counter rising flood damages and provide a broader range of values than current approaches. In this session we will examine existing U.S., and potentially other nations’, policies and methods for assessing flood loss and mitigation and develop recommendations for alternatives that support more holistic and resilient solutions. For example, Federal Emergency Management Agency (FEMA) post-flood damage evaluations of flood loss and replacement costs are generally evaluated on a building-by-building basis and only include construction replacement and evaluation of historically based flood probabilities. Cumulative impacts to the community, including social and environmental costs and ecosystem service benefits, are not factored in. The U.S. Army Corps of Engineers (Corps) takes a somewhat broader approach, but also does not consider a comprehensive suite of physical, social, and environmental costs and benefits that could be evaluated. For example, the benefits of ecosystem services are not yet considered in federal Benefit-Cost Analysis, which contributes to a focus on structural flood protection measures. Pragmatic and integrated tools and methods are needed to support more holistic and lasting solutions that significantly reduce future flood risk and reverse the ever increasing escalation of damage to human health and property as a result of floods globally.

This work group will be briefed on current FEMA and Corps benefit-cost analysis approaches, and a sample of local approaches to project implementation, then be tasked with:

- expanding on these to identify the full range of physical, social, and environmental costs and benefits associated with alternative approaches to floodplain management;
- synthesizing tools and methods for evaluating a full suite of ecosystem services associated with floodplains and
- offering a framework for integrating tools for programmatic implementation and assessing which would or would not require statutory or regulatory changes.

We will facilitate discussions on a range of related issues, such as the relative benefits of structural and nonstructural approaches and opportunities and challenges of working at a system (watershed) scale. The revised approach will be compared to existing federal policies and the work group will develop recommendations for programmatic changes. The end product will offer flood-risk management agencies at various levels of government a set of specific recommendations for using a more comprehensive framework for evaluating costs and benefits. Following the conference the product will also be used to create a paper for the Solutions Journal.

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This abstract describes a 2-day Working Group that is part of a much larger conference. For more information about ESP Conference 2012: Ecosystem Services Coming of Age: Linking Science, Policy, and Participation for Sustainable Human Well-Being visit:
http://www.espconference.org/ESP_Conference