

Comparative vulnerability analysis of historical cases

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This presentation focused on the importance of historical perspectives in understanding vulnerability and stressed the necessity of both, historical and prospective perspectives in undertaking vulnerability assessments. Three case studies were used to illustrate these points and to show how historical analyses can be used as a learning tool to identify critical information and actions to reduce vulnerability. After each case was presented, Schröter used the ecosystem services approach to explain the vulnerability in each case, and suggested actions that would have helped to lessen it.

- The “Oak Ridge Moraine’s dusty years” case cautioned about expanding agricultural practices to unsuitable areas. In this case, “the ecosystem service soil fertility maintenance was compromised for the exploitation of the ecosystem service food production”. A better understanding of the “interplay between these ecosystem services”, the regional hydrological regime and the implementation of farming practices suitable for the region, would have lessened the vulnerability in this case.
- The “Californian Pollination Crisis” case highlighted the ecological and economical importance of pollination, an ecosystem service often taken for granted and which major actors, the pollinators’ populations (wild and cultivated), are declining. This is an ongoing crisis in which “the ecosystem service pollination [is being] compromised for the short-term maximization of food production” through practices such as the elimination of wild habitat, hedgerows and the application of pesticides. A full appreciation of this service, along with an awareness of the sensitivity of pollinators to the above practices, could have prevented this problem, but more research is needed to better understand the ecological needs of pollinators’ populations.
- The “Haiti compared to the Dominican Republic” case explained the high vulnerability of Haiti to the hurricane Jeanne (2004) compared to that of the Dominican Republic through an historical comparison of both countries in which the environmental dimensions of Haiti’s vulnerability were exposed. These environmental dimensions include deforestation, the export of timber¹, the reliance of population on charcoal as cooking fuel, the cultivation of marginal lands, and increased soil erosion among others. In this case, “the exploitation of some ecosystem services to the expense of others” was presented as a contributor to Haiti’s vulnerability. Some suggested actions to reduce Haiti’s vulnerability involved reforestation of parts of Haiti starting from the National Parks, a reform of the energy system, alternatives to the farming of marginal lands, and the development of the tourist industry, but not much hope for Haiti was shown.

¹ To pay off France’s claimed debt (1825).

Three key points were highlighted following the presentation of the case studies:

1. The environmental dimensions of the human vulnerability and the role of ecosystem services as a link between humans and the environment.
2. Three major causes of unsustainable management of ecosystem services: unawareness of their existence, the compromise of one service to maximize profits at the cost of the public, and the lack of alternatives to meet immediate needs.
3. The suggested ways in which environmental sciences can contribute to lessen vulnerability include both, *i)* raising awareness about the ecosystems characteristics, their providing services, and the relationship management options-services supply, and *ii)* calling upon the compromise of ecosystem services at expense of other when occurring, and offering sustainable management options.

The presentation's conclusions stressed our dependency on ecosystem services and how an unsustainable use of the services will increase our vulnerability while acknowledging the limitations and potential contributions of environmental scientists to reduce vulnerability.

=> Some points raised in the discussion included:

- The Katrina's event: the role of media raising environmental awareness and its link to vulnerability.
- IHOPE project and importance of developing proactive policies.
- Pollinator crisis: the problem of knowledge limitations in offering adaptive strategies.
- The responsibility/role of scientists in lessening vulnerability: linking environmental sciences and policy.
- Reactive vs. proactive policies.