

Local action report Draft version

Local Action Report

(Draft, March 6 2006)

Title:

Development of Flood Vulnerability Index (LA1758)

Application of Flood Vulnerability Index in the Philippines (LA1757)

Framework Theme: Risk Management (#5)

Crosscutting Perspectives: C. Capacity-building and social learning
D. Application of Science and Social Learning
E. Targeting, Monitoring and Assessment

Session:

Title: "Information Systems for Risk Management" (SI FT 5-13)

Convener: International Office for Water (France)

Chairperson: t.b.c.

Synopsis:

The Flood Vulnerability Index (FVI) is a tool designed to assist decision makers in the field of flood control. The FVI allows users to assess flood risks, in terms of human casualties, as a function of physical features (climate and hydrogeology), socio-economic conditions, and the state of countermeasures (both structural and non-structural). The FVI is calculated from a set of eleven (11) indicators and allows users to compare flood vulnerability in different basins as well as to identify which factors (indicators) are most prominent in determining the relative level of flood vulnerability.

Because the FVI method is comparatively simple and is derived from easily collectable data, it is easily replicable and can be applied to basins worldwide. The FVI can be easily manipulated by changing the values of different indicators, thus allowing users to examine the extent to which each of these factors can influence overall flood vulnerability. The flexibility of the FVI allows it to serve as a useful tool in considering long-term flood management policy because future flood vulnerability can be calculated based on different scenario predictions for precipitation and social conditions 100 years into the future.

The FVI was applied to 114 major international river basins (LA1758), and the output, in the form of a global map, was presented during the session. Furthermore, the results of an exercise to apply the FVI on 18 basins in the Philippines (LA1757) were also presented in cooperation with the Department of Public Works and Highways (DPWH, Philippines) who serve as active partners in FVI development. This output helped to illustrate the replicability of the FVI methodology.

It was concluded that FVI has great potential to serve as a tool for appropriate decision-making and for prioritizing of flood control projects. Also noted was the value of the FVI as an important communication and educational tool for raising public awareness in relation to addressing flood-related risks.

Lessons Learned:

- The use of a relatively simple and easily accessible data set can be used to draw a general representation of flood vulnerability.
- Because the FVI can be easily manipulated (changing the values of different indicators) users can examine how different factors can influence overall flood vulnerability. This makes the FVI a valuable educational tool.
- The FVI can serve as an important communication tool in raising awareness about flood vulnerability and about the factors that cause vulnerability to increase (or decrease). Map outputs are particularly effective to raise interest and foster discussion.
- The Philippines test case showed that the FVI method, which was originally derived from a general analysis on 114 major basins, can be successfully applied to local basins by using local data.
- The FVI methodology (equation, the choice of indicators and their quantification) must be made very clear, otherwise it can open the door to some harsh criticism. The same is true about the FVI objective – it remains only a tool that can be used in addition to other information as part of the decision-making process. The FVI is far too general to be used as a central argument for prioritizing action.

Key Messages:

- Tools such as the FVI can serve two different yet complimentary purposes. First, because they inform users about the processes behind flood vulnerability, they can serve as a decision-making tool to prioritize action, not only in terms of *where* action is most needed geographically, but also in terms of *what type* action is likely to yield the most positive results. However, its primary function should be in education and awareness raising. In other words, even though the FVI is not yet robust enough to provide a highly detailed analysis of vulnerability, it can provide the user with a starting point from which to prioritize activities aimed at reducing vulnerability.
- One of the reasons the current version of the FVI is based upon relatively simple indicators is because data availability is often limited. The FVI's flexibility can allow for the development of a more robust analytical tool, provided data is made available.
- Although most basin characteristics can vary considerably from one part of the basin to another, the FVI calculations consider these factors to be homogeneous. Therefore, important differences, for example between the upper and lower basin are ignored. This problem can grow exponentially in the case of trans-boundary basins.