

Development of an open-access server-based tool capable of providing standardized risk assessment services worldwide

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Worldwide drowning data collection is still a difficult task. Nevertheless, even the low quality data reported from developing countries already clearly indicates that drowning is a major problem on these areas (1). Furthermore, the expected increase in the frequency of catastrophic events related to climate change should adversely impact drowning prevention efforts, especially on developing countries (2).

The evaluation of hazards presented at beaches, or in any other aquatic environment, is of paramount importance to promote water safety, being a cornerstone to any comprehensive water safety promoting plan. Such relevance is reflected on the numerous calls for the worldwide implementation, standardization and dissemination of Risk Assessment Methodologies (3). It is clear that RAMs are indispensable to water safety promotion on developing countries, by providing knowledge-based assistance and guidance essential to risk mitigation (3).

Since RAMs are processes still highly dependent on skilled know-how, they remain largely inaccessible to developing countries, whose budget constrains and strategic priorities leave little margin for investment in this area. Contrastingly, studies have shown that most environment-related beach hazards can be reasonably predicted using current scientific knowledge on beach systems (4,5). Consequently, providing developing countries with these services requires innovative approaches that optimize the cost/benefit ratio.

This work comprises the development of an open-access server-based tool aimed at providing free risk assessment services worldwide. The online tool is fed by a set of parameters including location specific environment-related parameters (estimated using oceanographic, meteorological and morphodynamic data), as well as human-related parameters (demographic, economical, safety services availability and beach usage information). As some of the data is to be retrieved from existing internet-based databases, the appropriate tools for automatic data retrieval were developed. This means that for a large number of the parameters the user is only required to geographically pinpoint the selected study site (providing GPS coordinates via free web geographical applications). Additionally, in order to standardize the gathering of the remainder user-dependent information, a form was developed. Care was taken to make the form as user-friendly as possible, following a guided step-by-step approach. The final output is a Risk Assessment Sheet freely provided to the user upon data input.

It should be noted, however, that the adoption of standardized RAMs 'such as the one hereby described is an explicitly pragmatic approach, as its applicability depends on the acceptance by all stakeholders that a slightly less detailed risk assessment is better than no risk assessment at all. This is of extreme importance since the development of inexpensive RAMs could potentially facilitate the bridging of the gap between the highly technological developed countries and the highly disadvantaged developing world, ultimately contributing to save lives worldwide.

References

1. ILS (2007) World Drowning Report, 2007 Edition.
2. IPCC (2007) Summary for Policymakers – Impact, Adaptations and Vulnerability 2007 Report.
3. ILS (2008) Position Statement: ILS Risk Assessment Framework (Document approved by the ILS Lifesaving Commission – 18 May 2008).
4. Short AD (2006) Australian Beach Systems – Nature and Distribution. *Journal of Coastal Research* 22: pp. 11–27
5. Short AD (2006) Beach Hazards and Risk Assessment of Beaches. In: *Handbook on Drowning: Prevention, Rescue, Treatment*. Bierens JJLM (Ed.). New York, NY, Springer, pp. 152–157 (ISBN: 3-540-43973-0).

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