

## Guidelines: Risk analysis – a Basis for Disaster Risk Management

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GTZ

### Organisation

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GTZ is a development agency owned by the German government and works on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), but also accepts contracts from other institutions. It provides viable, forward-looking solutions for political, economic, ecological and social development in a globalised world. All activities are geared to improving people's living conditions and prospects on a sustainable basis.

Website: [www.gtz.de/en](http://www.gtz.de/en) and [www.gtz.de/en/themen/uebergreifende-themen/krisenpraevention/1817.htm](http://www.gtz.de/en/themen/uebergreifende-themen/krisenpraevention/1817.htm)

### Bibliographical details

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### Abstract

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The goal of these guidelines on disaster risk management and risk analysis is to help integrate risk analysis into projects and programmes in at-risk regions, e.g. rural development, promotion of local communities or sustainable resource conservation. Equally important is the use of risk analysis in reconstruction programmes to ensure sustainability in designing action plans, e.g. after a flood or an earthquake. In the present publication the GTZ presents implementation-oriented concepts, instruments and methods for risk analysis.

### Intended end users

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The guidelines were created for **disaster risk management field practitioners**, and are aimed primarily at the staff of the GTZ and its partners, experts in **NGOs** and **international agency staff**.

## Language

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The guidelines are written in English and are also available in Spanish.

## Scale of assessment

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The scale of assessment is **community**-based.

## Type of Material

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The **guidelines** provide an overview of disaster risk management – the progression of thinking and transition from hazard and vulnerability analyses to risk analysis. It provides theoretical and conceptual frameworks for disaster risk management, as well as risk analysis – giving detailed description of all elements of risk analysis. There are detailed examples and case studies of flooding, landslides and droughts to illustrate how risk analysis is carried out. Also provided is alternative literature on disaster risk management and risk analysis.

## Type of assessment

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The guidelines develop a framework for introducing and understanding Disaster Risk Assessment: as a combination of both vulnerability and hazard analysis. It also utilizes methods and tools from Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA). It predominantly focuses on natural hazards and uses tools and models focusing on these.

## Analytical methods/tools

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The guidelines mention methods and tools that are used in the hazard, vulnerability and risk analysis but does not go into great detail of how exactly to utilize them. The analyses are broken down into the following stages and methods/tools are used within these stages: spatial analysis, temporal analysis and dimensional analysis.

There are a limited amount of methods mentioned for actually analysing risk, including:

*Disaster Risk Assessment Methods include:*

- ◆ **Hazard and Vulnerability Assessment (HVA)**
- ◆ **Disaster Risk Assessment (DRA)**

*General Assessment methods include:*

- ◆ **Livelihood analysis**
- ◆ Analysis of self-protection capabilities
- ◆ **Participatory Rural Appraisal (PRA)**
- ◆ **Rapid Rural Appraisal (RRA)**

## Tools

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The *Tools* include:

*Participatory tools:*

- ◆ **Risk mapping**
- ◆ **Participatory GIS**

*Technical tools include:*

- ◆ Assessment tables and matrices for risk assessments
- ◆ Models such as: NAXOs, SWAT, USLE (for erosion)
- ◆ Water balance diagram with agricultural calendar
- ◆ Mathematical models and equations for calculating risk

## **Notes on methods**

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- ◆ This document would be most useful for people who wish to get an understanding of how to conceptualise risk and think about undertaking risk analysis in the context of environmental risk.
- ◆ It provides a framework for risk assessment and theory behind the stages of the process.
- ◆ However, the analytical tools/methods necessary for a thorough and participatory community risk analysis are not provided in detail.

## **Case studies/ practical examples**

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The guidelines contain detailed examples and case studies to illustrate how risk analysis is carried out in the context of flooding, landslides, erosion and droughts.

## **Resource person(s)**

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## **Author of guidance note**

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