

## Chapter 61

# Challenge or Potential? Risk Identification in the Context of Sustainable Development: A Case Study

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### ABSTRACT

*The chapter describes the importance of balancing risk reduction and “taken risks” and what role a holistic risk identification plays in the context of Sustainable Development (SD). It provides a theoretical background on SD, Risk Management and the Environmental Impact Analysis (EIA). It discusses the implementation of SD in the EIA as one example for a holistic risk identification. The link between SD and risk management is discussed and the identified learning potentials for further developing traditional risk identification methods are explained. A risk identification explicitly considering SD as well as considering project and stakeholder risks is presented within a case study. The case study project is Engineering, Procurement and Construction (EPC) of a wind park farm in Brazil from the supplier perspective. Based on SD both, the risks of the project as well as the risks of the project stakeholders are considered. Whereby the chapter shares the risk identification as such as well as the process for which a systemic board constellation was applied.*

### INTRODUCTION

As one of the most important documents regarding Sustainable Development (SD) the Rio Declaration states “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent

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environmental degradation.” (United Nations (UN), 1997, Principle 15). The precautionary approach “implies a current commitment of resources to safeguard against the likelihood of future occurrence of adverse outcomes of certain activities” (Rao, 2000, p. 101) and is “equivalent to ‘risk-averse’ behavior in cases that involve irreversibilities or extremely high costs in socioeconomic or biogeophysical or other terms”. In other words the Rio Declaration suggests that a preventive approach regarding environmental risks is the basis for securing resources for the future generation (United Nations (UN), 1997). Thus managing risks is an essential approach in contributing to sustainable development.

Without identifying risks no risk management can be performed and thus the risk identification is an essential base regarding risk management.

Projects are always complex and include uncertainty and risks, in the sense of positive or negative deviations. In projects a balancing between risk reduction and “taken risks” is necessary as reduction of too many risks may at the same time minimize the project benefit and the benefit for project stakeholders. This means that a project is performed in a certain way and produces a specific result. The performance of a project or maybe the project outcome may lead to some risks. It is one task of a project manager to identify and analyze the risks and decide what risks influence the project or the stakeholders in a bad way. Furthermore, the project management team decides what risks to be reduced considering the probability that a certain risk actually occurs. This reduction can be achieved by for example changing project objectives, excluding special issues regarding the project result etc. These risk reduction have a direct influence on the benefit for both – the project and the stakeholders. Thus, the decisions which risk to reduced and which risks are taken are essential. These decisions are based on the probability that some risks will never occur and that “taken risks” do not influence the stakeholder well-being in a negative way, in order to have a good balance regarding the project benefit (Murray-Webster & Pellegrinelli, 2010).

In this chapter, the development of a holistic risk identification by clarifying the importance of risk reduction and the link to the project benefit is explained. As the consideration of SD principles in a risk identification increases the complexity of the situation, the authors experimented with systemic working forms in order to help project managers and their teams to grasp the complexity. The working form “systemic board constellation” and how it was used in the case study is shortly discussed. The authors argue that visualization, abstraction and systemic thinking are of importance to grasp the increased complexity in a holistic risk analysis.

The chapter is organized as following. First a theoretical background on SD and risk management is provided. Terms such as uncertainty vs. risk, risk reduction vs. project value, risk identification are clarified. The Environmental Impact Analysis (EIA) and its application in a sustainability appraisal is suggested. Then the basis regarding the application of SD in the risk identification is described and an example how SD principles can be explicitly considered in a project risk identification is shared. The working form systemic board is briefly introduced as a method for project managers and their teams to better handle the complexity and the dynamic is arising in complex contemporary project contexts. Finally in the last section of the chapter results, opportunities and limits are reflected and conclusions as well as recommendations for holistic risk identification are provided.

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