

Risk Factors of Natural Resources Security

Summary of key risk factors: Governance failure; scarcity of resources; lack of sovereignty over natural resources; political instability; water supply crises; food shortage crises; energy crises; unmanaged population growth; large demand and/or low availability of resources; weak institutions; income disparities.

Aim: To assist analysts with the identification of risk factors for the production of risk terrain maps. Specifically, this brief provides an annotated review of the factors related to natural resources security and the settings and times for which some factors may be most relevant. This information should be especially useful to help choose a time period for creating risk terrain maps (i.e., Stepⁱ 3), to identify aggravating and mitigating risk factors to include in your risk terrain model (i.e., Steps 5 and 6), and to inform the operationalization of your risk factors to risk map layers (i.e., Step 7).

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Resource availability is closely related to potential geopolitical conflict. Resources, such as, water are vital for human development, economic stability and the environmental sustainability of a region. Resources have a strategic component, since they are essential for human development and economic growth.

The International Peace Institute (IPI, 2009) states that a rapid increase of the global population and acceleration of international economic activity are leading to a scarcity of resources. These factors result in an unsustainable demand on both renewable and finite natural resources. Although new technologies and scientific advancements have coped with a larger demand of natural resources over time, the scarcity of certain commodities has led to increasing the chances of geopolitical conflicts to occur.

These factors prompt the following questions:

- What factors precipitate security issues over natural resources and how can these lead to a geopolitical conflict?
- What data can be useful to measure and track the occurrence of security issues regarding natural resources mismanagement?
- Which mitigating factors can reduce the risks over natural resources?

Operational definition: According to Parthermore and Rogers (2010), the security of nations depends increasingly on the security over natural resources. National economies rely on the availability of potable water, arable land, fish stocks, biodiversity, energy, minerals and other renewable and nonrenewable resources to meet the rising expectations of a growing world population.

Giordano et al. (2005) supports the theory that if resources are scarce relative to the demand for those resources, nations are more likely to conflict since imbalance will impinge on economic health or basic levels of human well-being.

Aggravating/Mitigating Risk Factors Based on a Review of Empirical Literature

The risk of conflict can be mitigated through a larger resource efficiency restraining the effects caused by this resource problem. A change on education and behavior will increase benefits. A reduction of subsidies support will limit the inefficiencies related with the use of resources. The investment in new technologies can increase the efficiency of resource extraction, improve the education of businesses and consumers and ensure their optimal distribution.

Economic factors: Empirical literature suggests that the location of international resource conflicts is related to areas

where supply is falling, demand is increasing and availability is not guaranteed (Giordano et al., 2005).

Societal factors: The larger the dependence on natural resources, the larger the shock in terms of trade and access to basic goods. This could cause instability and dissatisfaction within groups that suffer from shortages of resources. The process of extraction may produce grievances leading to forced migration. Additionally, natural resource wealth may be seen as more unjustly distributed than other types of wealth, increasing social unrest based on economic disparities (Humphreys, 2005).

Geopolitical factors: The uneven distribution of resources throughout the world increases dramatically the risk of international and intrastate conflict. The large history of conflict within societies and between states reflects the powerful effect of resources as a political tool (Parthemore & Rogers, 2010). According to Giordano et al. (2002), the geographic complexities of resources disputes and the possibility to extend across political boundaries have become entwined with other political issues. Thus the likelihood of a geopolitical conflict occurring will increase in areas where different states or regions have competing interests over a strategic natural resource.

Institutional factors: International resource conflict is most likely to occur where an institution is absent, or even if it exists, its capacity is restricted to deal with the management of natural resources (Giordano et al., 2005). Additionally, a lack of sovereignty over natural resources can reduce the effective control over a nation's own resources.

Environmental factors: The uncontrolled use of natural resources has dangerous consequences for human development and serious outcomes for health, hunger and education. Those environmental risk factors include poor sanitation, air pollution or lack of access to clean water (IPI, 2009). Additionally the climate change is fostering some forms of resource scarcity, especially in the case of the water.

References & Recommended (Publicly Available) Readings

- Giordano, M. F., Giordano, M. A., & Wolf, A. T. (2005). International resource conflict and mitigation. (1 ed., Vol. 42, pp. 47-65). Journal of Peace Research, Sage Publications. Retrieved from: <http://jpr.sagepub.com/content/42/1/47.abstract>
- Giordano, M. A., Giordano, M. F., & Wolf, A. T. (2002). The geography of water conflict and cooperation: Internal pressures and international manifestations. (4 ed., Vol. 168, pp. 293-312). The Geographical Journal. Retrieved from: <http://www.jstor.org/discover/10.2307/3451473?uid=3739808&uid=2129&uid=2&uid=70&uid=4&uid=3739256&sid=47699011255227>
- Humphreys, M. (2005). Natural resources, conflict, and conflict resolution: Uncovering the mechanisms. (4 ed., Vol. 49, pp. 508-537). The Journal of Conflict Resolution. Retrieved from: <http://www.jstor.org/stable/30045129>
- International Peace institute. (2009). Underdevelopment, resource scarcity and environmental degradation. (1 ed.). Retrieved from: http://www.ciaonet.org.proxy.libraries.rutgers.edu/wps/pi/0018134/f_0018134_15548.pdf
- Parthemore, C., & Rogers, W. (2010). Sustaining security: How Natural Resources Influence National Security. Center for a New American Security. Retrieved from: <http://www.cnas.org/node/4546>
- World Economic Forum. (2011). Global risks 2011. (6 ed.). Retrieved from: <http://reports.weforum.org/global-risks-2011/>

Endnotes

- ⁱ For steps of risk terrain map production, download the RTM Manual at www.riskterrainmodeling.com