

# Risk Management For Development Projects In The Public Sector

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## Abstract

**Aim:** The purpose of this paper is to critically assess the Risk Management process of development projects in the rural areas of small nations, with special focus on deforestation in Brazil.

**Objective:** To identify ways to reduce and minimize negative risk factors which are critical to the success of the development project.

**Scope:** A review of published case studies, literatures and experience learnt on the field of work were assessed, to evaluate and analyze the advantages and disadvantages of Risk Management processes of development projects. We cover the philosophy of development projects, perception of risk management, and definition of risk management process, methodology and techniques of risk management.

**Main Issues, Recommendation and Conclusion:** The main issues highlighted were critical environmental factors that impacted positively and negatively on the social lives and economic development of some small developing nations. This paper concludes with recommendations and observations about the importance of risk management for a sustainable forest and economic development.

**Keywords:** Risk Management, Development Projects, Public Sector, Deforestation, Societal Consequences

## 1. Introduction

This paper focuses on risk management of development projects with a varied perspective of the philosophy of development projects, to better comprehend and manage the risks associated with development projects at the community level. Most small nations like Brazil and the Caribbean Islands are considered under developed because of their economic status which is reflected on the society at large. However, Brazil was identified as one of the nations which suffered significant losses as a result of deforestation which is highlighted in this paper.

The philosophy of development projects was quoted by S. L. Posadas as a “process by which a societal problem is to be solved by implementing a systematic and well defined change process.” The term development was also quoted by L. Keita “development is generally understood etymologically to mean expansion by a process of growth or growth and differentiation of some entity along lives natural to its kind.” It is evident that

This philosophy is very meaningful to the benefits and uses of risk management of development projects, since participation is the means of an end. The issues addressed in this paper are considered development issues that require some level of problem solving to reduce the high probability and high impact risks associated particularly with de-forestation; which is considered one of the most critical issues in this paper and with a little focus on natural disasters.

### 1.1 Perception of Risk Management

Risk management and local development was envisaged as a component of development planning by experts like E. Plutt, (2006). Plutt stated that “Projects that combine risk management and reduction with (an increase of) income-generating activities and thus have an evident impact on the living conditions of the target communities.” He also perceives that risk management of development projects can also reduce conflicts in the local communities during disaster-related risk management processes and encourages capacity building among stakeholders. Furthermore, risk management can also reduce the exploitation of the forest trees and land, if the necessary measures are taken to control the risks.

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## **1.2 Definition of Risk Management**

Risk Management is the process of reducing minimizing and controlling the probability and impact of a negative occurrence, and/or increasing the probability and impact of positive occurrences. The main objective of risk management is to reduce, minimize and control risk at the planning and design stages of the project, until completion, noted Gardiner (2005). This depends on the project size, type and scope.

However, to achieve successful results, risk must be effectively planned and monitored and evaluated periodically by the project management team. Project management requires effective oversight and Quality Management of risk factors associated with all the project activities from identification stages to completion.

Risk Management process involves a lot of planning which entails risk assessment and control of all activities related to the project. Gardiner noted the importance of a risk management plans prior to conducting the risk assessment and control activities, because it is difficult to manage risk without a good plan. Risk assessment is the identification, analysis and prioritization of risk. As mentioned by Gardiner, risk identification assist project managers in controlling the risk related to the project before it escalates.

On the contrary, Roehrig (2003:15) and Crockford (1986) commented strongly on the limitations of risks management, since the malpractice of the concepts can be time consuming and costly. Therefore, the effective use of cost and benefit analysis were discussed by B. Wattenberg, who argued that economic growth is uncertain and unpredictable, but is vital to the development process; therefore, the cost of spending to reduce risk factors to benefit the people should be cost effective and beneficial.

## **1.3 Methodology of Risk Management**

There are various methods of risk management in development projects, some of these methods include the same practices, approaches, concepts and tools used during the classic risk management planning processes.

Natural disasters are one of the major contributors to risk consequences as a result of climate change. H. Wiezorek-Zeul commented and quoted that global climate change, abuse of natural resources, lack of communications and “responsibility”, are also methods of risk causes found in tropical areas. For example, changes in climatic conditions can impact positively or negatively on the social lives of people and economic development.

## **1.4 Techniques of Risk Management**

One of the most significant techniques of risk management is the strategic use of the risk management planning process. This process requires effective risk management plan to identify, document, assess, prioritize, develop response, ownership, track and control the risk and finally review the execution of the plan in a cost effective manner. Also, strengthening of global, regional and national political and fiscal commitment to reduce the risk associated with climate change. The use of risk management methods is also very beneficial during the risk management process.

## **1.5 Risk Management Planning**

Planning the Risk Management Process begins with a risk management plan which is prepared by the project management team. The concepts of risk management process require some understanding before they can be applied. There are many types of risks that can impact positively or negatively on development projects in small nations, some involve environmental, social, economical and technical risks; these risks can all bring benefits with some limitations and constraints. . In planning your Risk Management process, it is especially important to engage the right stakeholders, some of which (in developing countries) may not realize they have concerns until it is too late. Also in that planning, consider sources of risks.

## **2. Main Issues**

The identification of risk/threats for decentralization development projects in the small nations has been specific to legal issues, financial issues, environmental issues, political influence, resource issues, and communication issues. However, this paper focuses on the most critical issues which are environmental.

These issues relate to the project internal and external environments. The threats of climate change have contributed negatively to the projects external environment in different ways. One of the impacts of the climate changes is the increase or decrease in economic and social development. Depending on the urgency of the response given by Government, environmental risk factors can be detrimental to development because of the extent of the damages that may occur. At the same time they can present the positive risk opportunity of income generation, which is likely to bring development growth.

Most small nations are vulnerable to natural disasters such as floods. As mentioned by H. Hoff and L. Bouwer, the increase in natural disaster has created a lot of threats to development projects. Some of these threats were related to floods, landslides, droughts and storms which impacted negatively on the social lives and increase the possibility of economic losses. All these factors are considered critical issues and require effective use of risk management to control the risks.

If little or no attention is given to the negative effect of climate changes, the vulnerability of risks for farmers who work the farm is likely to increase and retard the growth of development projects. Vellinga et al (2002) mentioned that climatic conditions contributed to the risk of water disaster, and the concern of reducing these risks has been a challenge. Also quote from Freeman and Warner (2001) and Warner (2002), stated that “In developing and industrialized countries alike, Governments tend to focus on disaster response, rather than engage proactively in the pre-disaster phase.” Based on auditing experience of capital projects, observations revealed that the Government responded to such environmental risk with a reactive approach. Although this type of risk is unavoidable funds are not usually reserved for the unforeseen circumstances, therefore, funds allocated for particular projects are used to respond to the damages caused by the natural disaster.

In many instances the disaster preparedness plan doesn't make provision for funds in the event of high risk occurrences, such as water disaster which led to serious floods, loss of homes and personal belongings. Furthermore, damages to roads and bridges which is the responsibility of the Government to the people. A typical example was the flood in Central Europe in summer 2002. The European Union Solidarity Funds granted millions of Euros for disaster response which was not budgeted for by the Governments of the various nations, therefore enough emphasis was not placed on the unforeseen occurrences. The opportunity cost of funding other development projects was transferred for emergency response because of priority need unplanned.

There are two other pertinent environmental issues which affect economic and social development of small nations particularly in the rural areas; they are deforestation and environmental hazards. De-forestation has been a source of income distribution to many farmers in nations like Central America and the Caribbean. Many farmers view cutting of the trees as a means clearing forest land for agricultural purposes some capitalize on it by using the trees for lumber and making of char coal. These social issues have indeed impacted negatively on the natural environment and eco-systems. The fresh water resource stemming from the forest has been destroyed and hence caused further problems for water distribution in many rural areas that depend on this source of water to survive. Research was conducted on the Amazon forest in Brazil by N. Carrisse et al, which confirmed that de-forestation has been a major issue for the population. It was further revealed that environmental hazards such as air pollution, soil and water contamination all contributed to destruction of the natural environment because little or no attention was given to preserve the environment which suffered from mining.

The natural environment suffered further destruction due to over-exploitation of the forest resources by the farmers. There was little consideration for environmental valuation methods because of lack of control by the Government of Brazil and Caribbean countries for environmental protection. This type of environmental risks also damaged the biological environment which was associated with social and economical risks factors which impacted on infrastructural development. It is evident that many developing countries whether large or small also suffered as a consequence of environmental issues related to deforestation.

### **3. Risk Assessment**

An assessment is carried out to identify, analyze and prioritize the risks associated with the development project that are likely to impact negatively on the project. It may be difficult to assess the probability and impact of the risks identified, but considering the value of the environment and the threats caused by deforestation and natural disasters the assessment is necessary for the risk management plan.

#### **3.1 Identification, Analysis and Prioritization of Risk**

After identifying the risks, an analysis of the risks classifies the threats and opportunities that are likely to impact on the development project in a positive or negative way. For example scarce resources such as unavailability of funds to commence and complete projects can be a serious threat, which can be a high probability and high impact risk (qualitative and quantitative assessments). Also the possibility of income sourced through de-forestation indeed was a high probability and high impact risk, which affected the development of the natural and physical environment in Brazil, Central America and the Caribbean. But were these risks classified a priority risk by the responsible authorities? Apparently, they were not considered or identified as priority risk issues, therefore, the problems which are in existence today affected development of the natural resources and the health of the people. An analysis of the causes of deforestation proved that unemployment and development projects contributed tremendously to risk of losing the forest.

#### **3.2 Risk Response and Control**

There are many advantages and disadvantages of risk management; one of the advantages of risk management was mentioned by Dr. S. Graham as reduction of risk with regards to climate change, which is a means of controlling the risks by using mitigation methods, for example insurance coverage for securing the project in the event of a natural disaster, such as hurricane or floods. Unfortunately, most natural disasters are unavoidable; however, provisions should be made to seek financial assistance to control these unknown and unplanned risks.

A disadvantage of risk management is the cost of controlling the risk, which may also be time consuming. According to D.P. Gardiner (2005), risks control requires a response plan, a resolution and a monitoring and reporting plan. In an effort to control the risk identified in this paper, a substantial amount of funding is required to assist the farmers and disaster risk planners to mitigate and transfer the risk accordingly. However if the funds are not readily available or reserved in the national budget, it maybe be very difficult to control the risk identified.

Risk mitigation method is a proactive way of responding to the known risks by using qualitative and quantitative techniques to evaluate and prioritize the risks, depending on the probability and impact of those risks identified. All key stakeholders should be involved in identifying and mitigating of risk responses. One of the challenges is the efficiency and effectiveness of Government Officials to respond to the action plan. One major way of controlling the risks identified in this paper is by using more participatory approaches at the community level, to educate the farmers and community elders who participate in such venture. It is evident that efforts have been made to control the risk of deforestation in Brazil, according to statistical report the Government of Brazil spent on environmental protection in 2004.

### **4. Critical Assessment**

A critical evaluation of the risk management process of development projects in small nations focuses on the mismanagement, malpractices and misconception of risk management.

However, most of the threats such as the exploitation of the trees, contamination of drinking water and floods were not recorded or considered as threats, neither were the opportunities of making lumber and char coal from the trees were treated as high risk. Furthermore, there was little caution in ensuring that proper project management practices were applied. Also it appears that lack of knowledge of the risk management principles and concepts contributed to the limited use of pertinent tools such as the risk register which is used to identify the causes and effects of risks before preparing a risk assessment matrix to indicate the low, medium and high probability and impact of the risks. There is also need for conducting an Environmental Impact Assessment prior to preparing the risk assessment matrix.

The application and introduction of environmental valuation methods is significant in addressing environmental issues to protect the eco-system which can be used to generate employment and at the same time place value on the natural environment. There is statistical information to support the observations of the high rate of deforestation in many small nations and other developing countries.

## **5. Recommendations**

It is recommended that Government Officers who are responsible for managing development projects should minimize risk factors by first understanding the concept of the risk management process. A risk and vulnerability analysis should be prepared along with a poverty assessment survey to identify the probability and impact of the risks. Then apply the risk management concepts by ensuring that the risk management process is applied with effective planning, to reduce risk of deforestation by using possible solutions.

The countries affected by these environmental issues should bench mark from other countries with similar issues and learn from their experiences to strengthen the weaknesses of exploitation of the forest. The introduction of awareness programmes to reduce the exploitation of the trees and consider a greater portion of forest land as forest reserve will also help.

With regards to the natural disaster as a result of climate change, a proper disaster preparedness plan should be establish very early to help mitigate the risk of floods and contamination of drinking water. The responsible Governments should also ensure that provision is made in the national budget for contingency purposes. There should be reinforcement or introduction of policy decisions by regional and international Government to establish frameworks to ensure that these risks issues are reduce significantly.

The possibility of land use for farmers in other suitable areas for farming is another option for the farmers and other sources of employment creation is necessary to eradicate the high rate of unemployment. Finally, an action plan should be implemented to monitor and evaluate the strategic plan of action for the risk management process.

## **6. Conclusion**

Risk management is a process that requires participation of all project management team members and key stakeholders or interested parties to effectively manage and control the risks, by using a strategic planning approach to obtain successful project results. However, the advantages of minimizing risks which was discussed in this paper will bring project success if Total Quality Management is practiced in a proactive manner. The disadvantage of time and cost in managing risks appears to be critical success factors, but in principle the cost benefits is seen as an investment rather than a loss in nations like Brazil and the Caribbean with regards to de-forestation and natural disaster.

While the topic of this paper is Risk Management, the focus of the risks include deforestation and other issues facing the governments and citizens of developing countries. We have added specific recommendations (Risk Responses) for these risks in the Appendix to this paper.

It is imperative based on research that the damage of deforestation can be prevented and the forest land can be reserved with the great contribution of the forest authorities in collaboration with the local government departments and the people in the communities. There is not enough emphasis on the importance of environmental valuation methods and environmental policy to minimize the impact of the negative risks. A clear indication of the probability and impact of the risks of deforestation is mentioned by Reining (1978 and Kassas (1987). Finally, Governments needs to find other means of creating employment for the people who destroy the forest as a means of income distribution.

The approach used by the Government and people of the small nations has been too reactive, traditionally this form of survival has sustained many families who were deprived or did not take advantage of educating themselves academically. However, with the introduction of innovative ideas of environmental valuation methods such as travel cost method and contingency valuation methods, lessons can be learnt by some nations to sustain economic

growth without destroying the environment. Brazil was identified as one of the typical example of a developing nation which was adversely affected by deforestation because of poor management of the natural resources, which added further cost to the Government expenditure on reforestation techniques. If the causes and consequences of deforestation are not given special attention, the high risk of losing the forest will escalate and eventually cost Governments much more to restore the forest resources.

Considering the responses of risk management, the avoidance, transfer and mitigation of risk are all benefits and uses of risk management that can impact positively on the success of all development projects. Therefore, a cost effective risk management planning process can be used as a measure for effective change in society for a better sustainable economic development.

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### **Qualification and experience**

- Executive Diploma in Management (EDM), University of the West Indies
- Post Graduate Certificate in Project Management, University of Bradford, UK
- Value for Money training on the job/Conducted pilot audit on Government Social Programme
- Auditing of Information Technology training, India
- Enrolled in Advance Mastery in Business Administration with Cambridge International College
- Twenty (20) years experience in the public service, and 10 years auditing experience

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## Appendix

### Recommendations For the Societal Problem—beyond the Risk Management topic of this paper

This paper dealt with the use of Risk Management in governments of small and emerging countries. However, the context of that use is a greater problem, that affects all nations of the world. That problem is the consequence of the lack of stewardship of the natural resources of the developing countries. Risk Management is part of the solution to the problem, but stakeholder interest in managing the risk is imperative.

In the face of the above hazards, with all the social, economic, political, and environmental problems that they imply, it is inevitable that two questions have received increased attention in recent years: Can the damage be prevented? Can the damage that has already occurred be reversed? The answer to both is a qualified yes. Preventive measures for combating drought and halting the spread of the deserts, as highlighted by the UNCED in Agenda 21, and illustrated in the photograph below include:

- strengthening the knowledge base and developing information and monitoring systems for regions prone to desertification and drought, including the economic and social aspects of the fragile ecosystems;
- combating land degradation through, inter alia, intensified soil conservation, afforestation, and reforestation activities;
- developing and strengthening integrated development programmes for the eradication of poverty and the promotion of alternative livelihood systems in areas prone to desertification;
- developing comprehensive anti-desertification programmes and integrating them into national development plans and national environmental planning;
- Encouraging and promoting popular participation and environmental education, focusing on desertification control and management of the effects of drought (UNCED, 1992).

The following are a few suggestions appropriate for immediate action to fight against deforestation and desertification in a reasonably long-term perspective:

- strengthen the planning and organization of ecological, silvicultural, and socio-economic research;
- decentralize research work according to ecological and socioeconomic conditions;
- determine and carry out a systematic programme for the advanced training of research workers and research administrators

