

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

R E G I O N A L

**INFORMATION AND INDICATORS PROGRAM FOR DISASTER
RISK MANAGEMENT**

**Operation No. ATN/JF-7906/07-RG
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DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

REGIONAL

INFORMATION AND INDICATORS PROGRAM FOR DISASTER RISK MANAGEMENT

(TC0002018RG)

PLAN OF OPERATIONS

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ABBREVIATIONS

| | |
|------------|---|
| CDERA | Caribbean Disaster Emergency Response Agency |
| CEPREDENAC | Centro de Coordinación para la Prevención de Desastres Naturales en América Central |
| ECLAC | UN Economic Commission for Latin America and the Caribbean |
| IDEA | El Instituto de Estudios Ambientales, Universidad Nacional de Colombia en Manizales |

INFORMATION AND INDICATORS PROGRAM FOR DISASTER RISK MANAGEMENT

(TC0002018RG)

EXECUTIVE SUMMARY

| | | | |
|----------------------------|---|------|-----------|
| Requester: | CDERA AND CEPREDENAC | | |
| Sponsoring agency: | UN Economic Commission for Latin America and the Caribbean (ECLAC), Mexico Office | | |
| Executing agencies: | <u>Component I:</u> UN Economic Commission for Latin America and the Caribbean (ECLAC), Mexico Office <u>Component II:</u> Universidad Nacional de Colombia en Manizales, el Instituto de Estudios Ambientales (IDEA) | | |
| Amount and source: | IDB: (JSF) | US\$ | 1,300,000 |
| | Local: | US\$ | 300,000 |
| | Total: | US\$ | 1,600,000 |
| Terms: | Execution Period: | 18 | months |
| | Disbursement Period: | 24 | months |
| Objectives: | The purpose of this operation is to improve decision-makers' access to appropriate data and methodologies needed to meet the challenges of reducing and managing their risk to natural disasters. The specific objectives are to: (i) improve the use and presentation of risk information in order to assist policy makers in identifying investment priorities in prevention, and in guiding the recovery process after a disaster; (ii) provide policy-makers with a means of measuring key elements of their countries' disaster vulnerability and risk management capacity, and the comparative parameters for evaluating the effect of their policies and investments on disaster risk management performance; and (iii) stimulate exchange of technical information for risk management policy and programs in the region. | | |
| Description: | The Program will employ two principal instruments to meet the objectives. <i>Component I</i> is a technical assistance package that | | |

includes national level studies and country workshops to facilitate decision-making by economic cabinet agencies to promote the management of disaster risk, as well as a regional technical workshop to evaluate and disseminate the outputs of the country-specific work. This assistance will be carried out in four pilot countries. *Component II* will finance the development of a sophisticated assessment methodology that will measure key elements of countries' vulnerability to natural disasters and the performance of different risk management tools in reducing that vulnerability.

**Environmental/
social review:**

No negative environmental or social impacts were identified for this Technical Cooperation. The document was reviewed by the Committee on Environment and Social Impact (TRG/ 04-01) on 26/Jan/01 and the recommendations proposed are considered in this document. Elements of the IDB Action Plan on Natural Disasters that are being addressed by this operation can be found in paragraph 1.13.

Benefits:

The benefits of this program will be the increased visibility of risk information and risk management in development planning, and the evaluation of appropriate levels of investment in measures to mitigate the impacts of natural hazards throughout the region. Component I, the Information Program, by engaging national policy-makers and evaluating specific risk information, will contribute directly to the identification of future prevention investment projects to be financed by the Bank. In addition, this component will furnish policy makers with the information and methodologies necessary to analyze and assess their countries' risk bearing infrastructure and thus contribute to responsible risk management strategies.

Component II, the Indicators Program will fill an important information gap for policy-making. With it, the countries will have a tool for overseeing and promoting the development of their risk management capacity. The Indicators Program will provide data to be used for the design and implementation of national policy and programs, and gauging whether these policies have their intended effect in reducing vulnerability and managing risk. Countries will be able to look at their relative position over time and in comparison with other countries in the region. For the Bank, the Indicators Program will provide an important tool for focusing its policy dialogue and country assistance programming with member countries on disaster risk management.

Risks:

Two of the principal risks in this operation are: firstly, it may be

difficult to assemble the required expertise to form an effective working group to execute the program; and secondly, that the quality of the indicators methodology may fall short of its ambitious objectives. For these reasons, the operation proposes that two specialized agencies – ECLAC and IDEA – be the implementing agencies for components I and II respectively. ECLAC has extensive experience in the field, the region, and economic aspects, especially in the area of risk information. The Universidad Nacional de Colombia en Manizales/IDEA has the technical expertise and experience base in the region to frame the conceptual foundation, identify and evaluate the quality and applicability of the indicators. Moreover, due to the sophisticated nature of the Indicators Program and given certain maximum payment limitations of the Universidad Nacional de Colombia to hire the Technical Director of Component II, ECLAC and IDEA have agreed for ECLAC, as sponsoring agency of the overall program, to hire the Technical Director for Component II, according to the terms of reference accepted by the Bank. These risks will further be mitigated by the assistance, advice and peer review available to these implementing agencies from the advisory group of international specialists mentioned in paragraph 3.9.

There is also a risk that the information and indicators identified by the Program will not be absorbed by the desired policy actors. To mitigate this, the pre-study national workshops will help in maximizing the potential impact of the information and indicators by incorporating the pertinent national counterparts and identifying dissemination mechanisms.

Bank's sector strategy:

In March 1999, the Bank adopted the new Policy on Natural and Unexpected Disasters, which puts disaster prevention and mitigation within the development vision of the Bank. It underscores the priority of building risk management capacity in the region and stipulates that the analysis and management of risk will be mainstreamed in the Bank's lending operations. In March 2000 at the Annual Meeting of Governors in New Orleans, President Iglesias presented the Bank's "Plan of Action" for making this policy a reality in the region and the Bank. As one of the first steps, the Bank approved in March, 2001, a new financing mechanism – the Sector Facility for Natural Disaster Prevention.

The operation falls within the regional technical cooperation priority area of "Natural Disaster Management" in that it supports

the development of institutional capabilities for planning for, and responding to, natural disasters.

Special contractual conditions:

Two technical cooperation agreements, one for each component, will be signed for this operation – one between the Bank and ECLAC and one between the Bank and la Universidad Nacional de Colombia en Manizales.

Contractual conditions prior to the first disbursement under Component I: ECLAC will (a) identify the Program Coordinator, and (b) submit an initial plan of work, including the activities, expected products and execution timetable, acceptable to the Bank.

Contractual conditions prior to the first disbursement under Component II: (a) IDEA and ECLAC will jointly identify the Technical Director for the Component, and; (b) IDEA will submit an initial plan of work, including the activities, expected products and execution timetable, acceptable to the Bank.

Contractual obligations for third disbursement under Components I and II: Prior to third disbursement of resources, the relevant country authorities involved in the project will present to the Bank letters indicating their interest in participating in the program and willingness to assign the necessary counterpart resources.

Exceptions to Bank policy:

Due to the level and breadth of expertise of the personnel of the Universidad Nacional de Colombia en Manizales, an exception is sought to Bank policy on competitive hiring to permit the executing agency to contract directly researchers associated with the University as local consultants for Component II, the total amount of these contracts is not expected to exceed US\$70,000. These researchers have not been involved in the design of the program.

I. FRAME OF REFERENCE

A. Disasters and risk taking in the region

- 1.1 The countries of Latin America and the Caribbean are no strangers to the devastation brought on by hurricanes, floods, drought, earthquakes, landslides and volcanic eruptions. In the last 30 years, disasters have cost the region annually between \$700 million and \$3.3 billion. In the last ten years alone, natural disasters killed more than 45,000 people, affected 40 million more and caused over \$20 billion in direct damages. With an average of 40 major disasters a year, the region ranks second only to Asia in terms of the frequency of disaster occurrence. The frequency of disasters and their associated damages in the region are on the rise, and part of a worldwide trend in this direction.
- 1.2 The disasters themselves are natural in origin, but the vulnerability of the region is a result of human activities. Specifically, the persistence of widespread poverty, rapid and uncontrolled urbanization, and environmental degradation have led to an increase in vulnerability to natural hazards. Poor policy planning and a lack of political interest in prevention have exacerbated these trends. Disaster-related policies have predominantly focused on emergency response, leaving a serious under investment in prevention and mitigation (risk reduction).
- 1.3 Traditionally, the countries of the region have been risk takers in this area, under-investing in reducing their vulnerability and relying on external support after-the-fact for reconstruction. The trend of rising disaster losses makes it abundantly clear that this approach is unsustainable from both a national and hemispheric perspective.

B. Information about disaster risk

- 1.4 Many of the difficulties mentioned above are the result of information scarcity. Information is critical for any action to reduce the impact of disasters. Projections of the occurrence and estimates of the impact of natural hazards enable interested stakeholders to evaluate the overall risk of disasters for a country, region or specific sector, as well as to define specific objectives and priorities for risk reduction investments. Understanding what kinds of risk people and investments face also helps emergency managers prepare to respond rapidly and effectively after a disaster strikes in order to save lives and enhance recovery of communities. Loss estimation modeling and risk pricing are needed to efficiently develop and adopt such risk sharing/transfer instruments as private disaster insurance, reinsurance and contingent financing arrangements through the capital markets.

- 1.5 Today in the region, the supply of risk-related data and evaluations is still often poorly matched with these needs of decision-makers. Poorly articulated demand is partly to blame. Consumers of risk information – such as, public sector financiers of infrastructure and basic services, or economic and social policy-makers – are only recently recognizing the need to factor natural hazard risk into their decisions and are looking to equip themselves financially and technically to make effective their information needs.

C. Measuring vulnerability and risk management performance

- 1.6 In the aftermath of recent disasters, countries throughout the region have pledged to invest to better protect people and economic activities for the next disaster.¹ This proactive approach calls for a fundamental shift in governments' role in disaster management, from attempting to better prepare, respond and recover *in the case of emergencies* – the current policy which has not halted rising disaster losses – toward a risk reduction and management approach, one which facilitates and supports the activities of a broad set of public, private and local actors to reduce vulnerability as an integral part of development.
- 1.7 This new policy framework necessarily requires governments to obtain a broader view of disaster risk, and to have a better understanding of the mechanisms governing the performance of risk reduction and management for economic and social development. This requires better data – regarding the severity and frequency of the natural phenomena in a place, as well as the level of vulnerability and the physical, economic, social and environmental resilience to natural hazards – and better policy-oriented analysis of such data. As government attention must now focus on reducing disaster risk to development, and away from emergencies *per se*, there is a need for operational tools for measuring vulnerability and risk management performance.
- 1.8 Deficiencies in data and poor quantitative analysis hamper the ability of governments to make informed choices concerning desirable risk management policies, and other policies which have major impacts on a country's vulnerability. In general, there is no clear sense of what constitutes the norms in a well-functioning risk management system, or how best to move towards those norms. At present, the vulnerability and risk management performance in most countries in the region cannot be monitored in a way that would enable decision-makers to determine whether and how vulnerability is diminishing or growing, or whether broad risk management policy goals are being attained. Put in a regional context, it is impossible to determine how a particular country is faring relative to

¹ In their 1999 Summit meeting, for example, the six Central American presidents adopted the Strategic Framework for the Reduction of Vulnerability and Disasters in Central America.

other countries or whether its performance is above or below the expected norm given its particular circumstances.

- 1.9 In the last ten or more years, there have been considerable improvements in methodologies for evaluating different elements of disaster risk. These improvements represent important groundwork for the development of indicators as described above. Natural hazard assessments are increasingly routine throughout the region. Loss estimation models for physical infrastructure and service provision can reveal relative vulnerability of materials and construction when confronted with different hazard characteristics. Mexico, for example, recently conducted a study with the World Bank to assess Mexico's current capacity to deal with disaster risk and minimize the impact on the economy. Some sectors – energy, agriculture and tourism – have notable experience in monitoring their losses and evaluating their exposure and fragility. Improvements have been made in measuring disaster impact, as expressed in monetary as well as physical or operational terms. Academic work to better assess social vulnerability and resilience is underway.
- 1.10 While some countries measure one or another disaster impact after an event, broader vulnerability and risk management indicators (as part of census for example) are practically non-existent. The IDB publishes no disaster risk indicators in its annual *Economic and Social Progress in Latin America*; neither does the World Bank in its annual *World Development Report*. The Economic Commission for Latin America and the Caribbean does collect impact data, but on select disasters only. Munich Reinsurance, the International Federation of the Red Cross and Red Crescent Societies, and a few others collect selected indicators of economic and human impacts of natural disasters, relying mostly on government reporting or private sector insurance reporting. The UNDP has the intention of developing and launching the World Vulnerability Report to highlight comparative levels of, and trends in, natural and technological hazards, disaster-risk related, across countries and world regions.

D. The Bank's sector strategy

- 1.11 During the past four years, the Bank approved US\$1.5 billion in new financing to help affected countries in the region recover from disasters, increasing its average annual disaster-related lending by a factor of 10 compared to the previous 15 years. A preliminary assessment of RE2's lending portfolio between 1990 and 1999, shows that natural hazard related lending accounts for 5% of the total lending portfolio for that period. Within the natural hazard related lending operations, emergency response operations accounted for 23% of the portfolio and reconstruction and rehabilitation for 40%. Only 32% corresponded to prevention and mitigation operations. This after-the-fact approach to address disasters is unsustainable and will not reduce their toll in the region. This experience has prompted the Bank to refocus its efforts to an *ex-ante* approach: to

help countries ensure sustained investments in disaster prevention and building risk management capacity in order to reduce vulnerability over the long run.

- 1.12 In March 1999, the Bank adopted the new Policy on Natural and Unexpected Disasters, which puts disaster prevention and mitigation within the development vision of the Bank. It underscores the priority of building risk management capacity in the region and stipulates that the analysis and management of risk will be mainstreamed in the Bank's lending operations. In March 2000 at the Annual Meeting of Governors in New Orleans, President Iglesias presented the Bank's "Plan of Action" for making this policy a reality in the region and the Bank.² As one of the first steps, the Bank approved in March, 2001, a new financing mechanism – the Sector Facility for Natural Disaster Prevention³. In November, 2001, there was a special briefing for the Board of Directors on disaster risk management and the implementation of the Bank's Action Plan.
- 1.13 The Plan of Action consists of the following six strategic areas for Bank assistance:
- *National Systems for Disaster Prevention and Response*: Building national legal and regulatory frameworks and programs that bring together the planning agencies, local governments and civil society organizations; developing national strategies for risk reduction, and assessing inter-sectoral priorities, backed by separate budgets.
 - *Inserting Prevention into the Culture*: Developing and disseminating risk information and empowering citizens and other stakeholders to take risk reduction measures.
 - *Reducing the Vulnerability of the Poor*: Supporting poor households and communities in reducing their vulnerability to natural hazards and recovering from disasters through reconstruction assistance.
 - *Involving the Private Sector*: Creating conditions for the development of insurance markets; encouraging the use of other risk-spreading financial instruments where appropriate, and designing economic and regulatory incentives for risk reduction behavior.
 - *Risk Information for Decision-Making*: Evaluating existing risk assessment methodologies; developing indicators of vulnerability, and stimulating the production and wide dissemination of risk information.
 - *Fostering Leadership and Cooperation in the Region*: Stimulate coordinated actions and to mobilize regional resources for investments in risk mitigation.

² Facing the Challenge of Natural Disasters in Latin America and the Caribbean: An IDB Action Plan. 2000. IDB, SDS Special Report.

³ This loan facility is one of the new "flexible loan instruments" being adopted by the Bank's Board of Directors. As a sector facility, each operation will be prepared rapidly according to streamlined procedures and may finance up to \$5 million. The Facility will strengthen disaster prevention and risk management systems through vulnerability reduction and improved preparedness to natural disasters, and will prepare countries to launch larger-scale national programs. Three projects that make use of the Facility are currently in the pipeline: DR-0145, BO-0206 and HO-0218.

- 1.14 The present technical cooperation is designed to advance two of the above six strategic areas: building national risk management systems (strategic area number 1) and improving risk information for decision-making (strategic area number 5). Component I, the Information Program, of the proposed operation will contribute critical information for the identification of investment priorities and new projects that may then be financed by the Sector Facility for Natural Disaster Prevention. Component II, the Indicators Program, will support countries' move to the new risk reduction and management policy approach and its programs, by improving the understanding of how policy measures impact a country's vulnerability. It will provide an important tool for focusing the Bank's policy dialogue and country assistance programming with member countries on disaster prevention even in times without large disaster events, thereby providing sustained justification for operations to be financed by the new loan facility.
- 1.15 Also in support of the implementation of the Action Plan, the Bank is working with regional partners to promote better risk reduction management through the Inter-American Committee on Natural Disaster Reduction coordinated by the OAS, and the ProVention Consortium coordinated by the World Bank (strategic area number 6). Moreover, the Bank is including a debate on natural disaster reduction within the context of the Program of a Regional Dialogue (GN-2096). Examples of further regional technical cooperations that address strategic areas of the Action Plan include the recently completed Iberoamerican Climate Project (ATN/SF/UE-5149-RG – strategic areas 3 and 5) and the ongoing programs of Socioeconomic Impacts of El Niño (ATN/SF-6569-RG – strategic areas 3 and 5) and Disaster Mitigation in Central America (ATN/SF-6552-RG – strategic area number 1). In strategic area 4, the Bank is analyzing risk-spreading financial instruments and their applicability (ATN/DC-7155-RS on available instruments and ATN/NC-7699-RS on practical applications of instruments in select countries).
- 1.16 The operation falls within the regional technical cooperation priority area of "Natural Disaster Management" in that it supports the development of institutional capabilities for planning for, and responding to, natural disasters.

II. THE PROGRAM

A. Objectives

- 2.1 The purpose of this operation is to improve decision-makers' access to appropriate data and methodologies needed to meet the challenges of reducing and managing their risk to natural disasters. The specific objectives are to: (i) improve the use and presentation of risk information in order to assist policy makers in identifying investment priorities in prevention, and in guiding the

recovery process after a disaster; (ii) provide policy-makers with a means of measuring key elements of their countries' disaster vulnerability and risk management capacity, and the comparative parameters for evaluating the effect of their policies and investments on disaster risk management performance; and (iii) stimulate exchange of technical information for risk management policy and programs in the region.

B. Description

- 2.2 The Program will employ two principal instruments to meet the objectives. Component I is a technical assistance package that includes national level studies and country workshops to facilitate decision-making by economic cabinet agencies to promote the management of disaster risk, as well as a regional technical workshop to evaluate and disseminate the outputs of the country-specific work. This assistance will be carried out in four pilot countries. Component II will finance the development of a sophisticated assessment methodology, which will measure key elements of countries' vulnerability to natural disasters and the performance of different risk management tools in reducing that vulnerability. Special emphasis will be given to the analysis of areas where the potential impact is highest, such as cities with their large concentrations of assets and population.
- 2.3 The proposed Program will fill an important information gap needed to design, implement and evaluate risk management policies and programs, and help countries to be better consumers of available risk data and modeling.⁴ Together, the two components will provide country specific analytical studies and a regional platform, from which countries can develop national risk reduction and management policies and programs.
- 2.4 This program will produce a collection of outputs that will be put at the disposal of the participating countries and any others who wish to make use of them. These include from Component I: a conceptual and analytical framework for risk bearing infrastructure; a revised assessment methodology and guidelines for both pre and post-disaster application; and a series of country studies. From Component II: a set of indicators and a methodology for measuring key elements of a country's natural disaster vulnerability and risk management performance, and a series of country reports.

⁴ Risk will be evaluated looking at country-specific hazards, which may include floods, wind-related events, earthquakes, volcanic eruptions, droughts, landslides and wildfires.

Component I: Risk information through national pilot studies (US\$855,000)

- 2.5 Component I will finance the evaluation of the kinds of risk data and analytical tools that the economic cabinet agencies need to effectively promote the management of disaster risk and national-level disaster prevention policy. Four countries will be participating in the study: one in the Operational Region 1 (RE1), two in RE2 and one in RE3 of the Bank (Chile, Guatemala, Mexico and Barbados from which letters of interest have been received). National workshops will be organized with government leaders, risk managers of the private sector and key stakeholders in the NGO community and civil society before and after the national studies to help identify essential types of risk data, analytical tools and mechanisms to disseminate the findings. The relevant national authorities will participate in the workshops to ensure that the results of the national studies are effectively used as part of a policy dialogue on national risk management strategies.
- 2.6 The information and analytical tools for policy-making is divided into those, needed a) **before** a disaster strikes – to design financial preparedness actions and to identify prevention investment priorities – and b) **after** a disaster strikes – to guide effective recovery. Once the types of risk data and analytical tools are identified, the component will finance individual country studies (data collection and application) with active participation of national entities responsible for disaster reduction.
- 1.1. Before: Pre-event information for national financial preparedness and prevention policy
- 2.7 National policy makers need to identify and prioritize public investments to: (i) reduce vulnerability to disasters and (ii) adopt ex-ante financing arrangements that ensure post-disaster funding to replace lost stocks quickly and fully in case of an event. At the national level, vulnerability reduction and financial preparedness are critical for designing effective programs (i.e. activities that would be funded by the disaster prevention facility, under creation by the IDB) and cost-sharing arrangements for pre-disaster risk reduction and post-disaster recovery. They contribute to hedging against potential serious setbacks to public finances and minimizing greater indebtedness after an event.
- 2.8 In order to meet these basic policy objectives, this component will develop the analytical framework and methodologies for the national studies that will evaluate the countries' "risk bearing infrastructure." This will include two parts:
- (i) the definition of the key elements that make up a country's "risk bearing infrastructure" – namely who bears risk (public, private, local institutions) and the type and amount of risk they bear –

methodologies for evaluating/modeling these and the national governments' strategies for dealing with the risk; and

- (ii) the revision of the ECLAC damage assessment methodology so that it can be used both to evaluate the cumulative impact of past disasters on the risk bearing infrastructure and to identify the channels/mechanics of these impacts. This will allow the building of impact scenarios for select areas of economic performance taking into account environmental services and planning (especially in urban areas) and natural resource management factors (reforestation, watershed management, etc.) for alternative actions faced by decision makers. These impact scenarios, based on historical data, will also allow testing as part of the development and initial implementation of the methodology.

1.2. After: Post-disaster information for effective recovery strategies

- 2.9 The state-of-knowledge about what constitutes an effective and efficient recovery period is improving. Policy-makers across the public sector in the economic cabinets and sector agencies now need more systematic and coordinated information gathering, analysis and dissemination methodologies so they can better guide the recovery process. Recovery depends on mobilizing sufficient resources quickly and ensuring they are programmed to priority sectors at the right time.
- 2.10 This component will also finance the improvement and development of methodologies for accessing critical information in the post-disaster period and producing action guidelines both for governments and the international community involved in reconstruction. This includes:
 - i) rapid assessment techniques that will provide information needed in the early period for identifying and prioritizing the restoration of basic services such as drinking water, sanitation, and health, and the rehabilitation of damaged infrastructure such as bridges (i.e. activities financed by the Emergency Reconstruction Facility of the IDB) and;
 - (ii) strategic assessments methodologies that are needed after the initial emergency period stabilizes, in order to time and target reconstruction (i.e. activities that could be financed through regular development loans of the Bank). These methodologies will assess direct and indirect economic, environmental and social effects, including poverty impact, of not only the disaster, but also the reconstruction efforts. To do so, existing methodologies and practices will be

evaluated. Recent country-specific recovery and institutional experiences will be analyzed for future mitigation actions to address direct and indirect impacts.

- 2.11 In order to facilitate the adjustment and use of the study results of the pilot countries throughout the Americas, a regional workshop will be organized to compare the national experiences. The results will be disseminated through publications and the Internet, and will include information/analytical needs and issues, as well as a summary section on cutting edge knowledge of risk management solutions for the region.

Component II: Indicators for disaster risk management (US\$745,000)

- 2.12 This component will finance studies, which will include: (i) the definition and analysis of different types of vulnerability and performance indicators for disaster risk management and their conceptual foundation. This will include an analysis of societal, physical, economic, and environmental vulnerability amongst others and the construction of indicators will consider critical demographic, gender ethnicity and socio-cultural issues; (ii) the design of the data/information collection method, and (iii) the testing of the indicators methodology in select countries.⁵ The component will also finance a regional technical workshop with policy-makers and experts in the region to evaluate the assessment methodology and disseminate results. It is anticipated that this will be a complex exercise that will require expert-level and multi-disciplinary participation.
- 2.13 The definition of indicators and their conceptual foundation. A set of indicators will be developed that will be policy-sensitive, transparent, relatively easy to collect and calculate on a regular basis, and easily understood by policy-makers. Indicators will be grouped to reflect the main elements of a country's risk reduction and management performance. These modules are likely to include indicators of exposure, ability to reduce losses and recover efficiently, including areas such as: disasters and impacts experienced, performance of critical facilities and lifelines, macro-economic resiliency, institutional capacity, as well as the performance of the primary instruments of risk management like risk identification, mitigation, risk transfer and financing mechanisms, preparedness, emergency response and recovery capability. Particular attention would be given to the impact that sectoral activities (such as communication infrastructure, education) have on a country's overall vulnerability to disasters. A means to group countries, likely by economic and hazards circumstances, will also be developed as part of the methodology to permit countries to compare their risk management indicators with like countries.

⁵ 10 countries will be selected from different sub-regions and would reflect income and disaster characteristics. Countries may include: Mexico, Guatemala, Honduras, Panama, Barbados, Bahamas, Venezuela, Colombia, Argentina, and Chile.

- 2.14 The development of indicators will proceed in phases. First, the task will be to identify different types of indicators that could be used in understanding and measuring vulnerability and risk management performance. From this comprehensive set, a reduced group of indicators will be selected on the basis of their relevance, measurability and cost. Only indicators for which data can be obtained will be included. This stage will also pre-test the indicators by analyzing their policy-sensitivity and applicability by the decision makers. Also the correlation among related indicators will be measured. Finally, this will result in a smaller, manageable set of indicators that can be tested. This process of testing policy-sensitivity will include identifying the national institutions that might update and use the indicators on a regular basis.
- 2.15 The data collection methods will include the specification of individual data/information, acceptable sources, and the steps for the construction of the indicators (calculation methods, adjustments). The methods will be designed for data-scarce environments, their ease of implementation by professionals in the region, and low cost.
- 2.16 Testing of the indicators methodology will be done in approximately 10 countries, to be selected according to different levels of economic development and natural hazards exposure. Teams of local professionals will participate in the collection and construction of indicators and participate in the evaluation and validation of the methodology.
- 2.17 A regional technical workshop with policy-makers and experts will be held upon completion of the in-country testing to evaluate the assessment methodology and introduce the Indicators Program to the countries.

C. Cost and financing

- 2.18 The total cost of the proposed operation is estimated to be US\$1,600,000. The Bank will contribute \$1,300,000 from the Japan Special Fund for consulting services and part of the cost of the workshops. The implementing agencies and the individual countries involved are expected to complement this amount with a further US\$300,000 for consulting services, administrative expenses and workshop costs. Part of this local contribution may be made in-kind. The estimated budget is as follows (see Annex I for the Detailed Budget):

US\$ (000s)

| <i>Information and Indicators Program for Disaster Risk Management</i> | | | | | |
|---|--------------|-----------------------|------------|--------------|-------------|
| Cost Category | JSF | Implementing Agencies | Countries | Total | % |
| Component I – Risk Information through National Pilot Studies | 665 | 120 | 70 | 855 | 53% |
| Studies | 465 | 25 | 20 | 510 | |
| Regional workshop, publications and dissemination | 25 | 10 | 50 | 85 | |
| Program Coordination and Management | 162 | 66 | | 228 | |
| • Program Director | 60 | 20 | | 80 | |
| • Program Support (includes administrative support) | 82 | 26 | | 108 | |
| • Monitoring and evaluation – | 20 | 20 | | 40 | |
| Contingencies | 13 | 19 | | 32 | |
| Component II – Indicators for Disaster Risk Management | 635 | 50 | 60 | 745 | 47% |
| Construction of indicators and conceptual framework and information collection methodology | 332 | | | 332 | |
| Testing of methodology in 10 countries | 70 | 10 | | 80 | |
| Regional Workshop, publications and dissemination | 25 | | 50 | 75 | |
| Program Coordination and Management | 196 | 40 | | 236 | |
| • Technical Program Director – (Contracted by ECLAC) – 120 Honoraria | 130 | | | 130 | |
| • 10 Travel | | | | | |
| • Program Support– | 66 | 40 | | 106 | |
| Contingencies | 12 | | 10 | 22 | |
| TOTAL | 1,300 | 170 | 130 | 1,600 | 100% |
| *ECLAC is the executing agency for Component I and is responsible for the contracting and administration of the payments of the Technical Director of Component II; the Bank will be the technical supervisor of said Director, with contributions from ECLAC, as indicated in paragraph 3.5. IDEA will execute the remaining activities of Component II. | | | | | |

III. ORGANIZATION AND EXECUTION

A. Principal Operating Arrangements

- 3.1 The sponsoring agency for the whole operation will be the Economic Commission for Latin America and the Caribbean (ECLAC). It will also be responsible for coordination of the entire operation in close coordination with the Bank, and will act as the implementing entity for Component I, the Risk Information through National Pilot Studies component. It will also be responsible for contracting and administering the payments of the Technical Director of Component II and contributing its input to the technical review of his reports to the Bank (see paragraph 3.5). ECLAC has been working with disaster statistics and estimates in

the region for well over 20 years, and is the author of the tool for determining both the sectoral and overall socio-economic effects of a disaster as a guide for post-disaster rehabilitation and reconstruction processes. This methodology is currently being updated and expanded to capture impacts on especially vulnerable groups and the environment. This experience makes ECLAC well situated to execute the proposed component activities, as does their economic focus on the topic of disasters and their access to experienced professionals both in and outside the region.

- 3.2 Component II, the Indicators component, will be executed by Instituto de Estudios Ambientales (IDEA) of the Universidad Nacional de Colombia located in Manizales, Colombia. The Center has extensive experience in working with national systems for risk management to integrate risk reduction into development planning, and has broad inter-disciplinary capabilities, including in the areas of economics, engineering, urban planning, policy analysis, social and physical sciences. The faculty have been important contributors to both the practice and research of risk management in Colombia, the region (Central America, Caribbean, Andean and Southern cone countries), and worldwide. The Center is well-acquainted with the global expertise in the multi-disciplinary field of disaster risk management. The broad technical experience and grounding in the region makes IDEA uniquely situated to execute the Indicators Program – from detailing the initial conceptual framework, to identifying and assembling the necessary expertise to carry it out, and to supervising the quality of the results.

B. Execution of Components

- 3.3 Risk Information through National Pilot Studies. This component will be executed in four phases: i) In the first phase (3 months), ECLAC will put together a team of specialists to develop the analytical framework and methodologies for the national studies; ii) In the second phase (10 months), ECLAC will organize four national studies. These will be preceded by workshops to review the analytical framework and methodology and may be concluded by a second national workshop to present findings; iii) In the third phase (2 months), ECLAC will prepare and conduct a regional workshop to compare the national experiences and gather findings and; iv) Finally, ECLAC will prepare a final report of publishable quality using the national studies and products from the national and regional workshops (2 months).
- 3.4 Indicators for Disaster Risk Management. IDEA will conduct this component in four phases: i) In the first phase (8 months), IDEA will put together a team of specialists and develop the terminology, conceptual framework and assessment methodology for this component, including recommendations of likely indicators; ii) In the second phase (4 months), IDEA will develop a definitive set of policy-sensitive indicators and a methodology for collection of the appropriate data; iii) In the third phase (4 months), IDEA will gather data in ten countries and test and

adjust the indicators developed in Phase Two; iv) In the final phase (2 months), IDEA will organize a regional workshop in coordination with Component I to review the indicator methodology and the results from the ten country tests.

- 3.5 The Technical Director for Component II will be contracted and paid by ECLAC, which will also contribute to the technical review of the Technical Director's products, presenting its comments to the Bank within 5 working days of receiving said products. The technical supervision and final approval of the Technical Director and his products will be the responsibility of the Bank, which will authorize the corresponding payments to be made by ECLAC. For the contracting of the Technical Director of Component II, the Bank's norms and procedures will be followed. The funds for his contracting and associated travel (US\$130,000) are included in the budget for Component II and these will be transferred to ECLAC.

C. Program Administration within the IDB

- 3.6 Inside the Bank, technical supervision of the TC will be provided by SDS/ENV and RE2/EN2, with participation of the Disaster Management Focal Points in the other units of the Bank. This includes the technical supervision and final approval of the Technical Director of Component II and his products. Project administration and disbursements for Component I, and for the contracting of, and payments related to, the Technical Director of Component II mentioned in paragraph 3.5, will be carried out by the Bank's Country Office in Mexico (COF/CME) and the rest of Component II by the Bank's Country Office in Colombia (COF/CCO). All disbursements will be made in accordance with the Bank's standard policies and procedures. Payments will be on a product basis, as detailed in the table below, and complying with the conditions necessary for first disbursement to each component.

| |
|---|
| Component I – all products must be satisfactory to the Bank before payment can occur |
|---|

- | |
|--|
| <ul style="list-style-type: none">• First payment of 30% on completion of all conditions prior to first disbursement• Second payment of 25% on completion of the analytical framework and the methodologies for the four national studies• Third payment of 25% on presentation, to the satisfaction of the Bank, of the letters from the relevant country authorities indicating their interest in participating in the project and their willingness to assign the necessary counterpart resources and on realization of the five national workshops and presentation of the four national studies• Fourth payment of 10% on realization of the regional workshop, including a detailed final report on the national situations and conclusions |
|--|

| |
|--|
| <ul style="list-style-type: none"> • Final payment of 10% on acceptance of the definitive final report for publication |
| <p>Component II – all products must be satisfactory to the Bank before payment can occur</p> <ul style="list-style-type: none"> • First payment of 30% on completion of all conditions prior to first disbursement • Second payment of 20% on presentation of the document that defines the evaluation terminology and methodology of the potential indicators and the conceptual framework on vulnerability • Third payment of 20% on presentation, to the satisfaction of the Bank, of the letters from the relevant country authorities indicating their interest in participating in the project and their willingness to assign the necessary counterpart resources and on presentation of the report which includes the field work plan and methodology to be used in the collection, revision and adjustment of the indicators • Fourth payment of 20% on presentation of the comparative report on the results of the collection, revision and adjustment of the indicators in the ten countries • Final payment of 10% on acceptance of the definitive final report for publication and a definitive set of indicators with recommendations for their application |

- 3.7 In addition, staff of the Representations will participate in the specific country workshops for Component I and review the field testing of the indicators of Component II. The results will be widely disseminated in the region and will contribute to the awareness raising on disaster prevention and risk management.

D. Monitoring and Reporting

- 3.8 ECLAC will submit brief progress reports to the Bank for Component I. The following major products will be submitted: Phase one – analytical framework, methodology, and names of national counterparts in four countries with inception report; Phase two – four national workshop reports to be submitted upon conclusion of the workshops and four country studies to be submitted as and when they are completed. The IDB reserves the right to request an additional report during the 10 month period of phase two should it deem it necessary; Phase three – report on the regional workshop; Phase four – final report of publishable quality.
- 3.9 IDEA will submit brief progress reports according to the Phases of Component II. The following products will be submitted: Phase one – definition of terminology, indicator assessment methodology and recommendations for selecting definitive group of indicators; Phase two – description of data collection methods and a small manageable set of definitive indicators; Phase three – 10 country reports on the

findings from the data collection and indicator testing and Phase four – a workshop agenda and report, and a final report.

- 3.10 ECLAC and IDEA will be responsible for sharing the products generated by their respective components through the regional workshops of both components. Each executing agency will establish an advisory group of three or four international specialists to provide quality enhancements at critical junctures within each phase. Efforts will be made to ensure that the specialists represent a wide area of expertise and the viewpoints of interested parties.

E. Evaluation and Auditing

- 3.11 Independent consultants will be hired to evaluate both components and their reports will be submitted within two months of project conclusion. Those considered for hiring would be individuals, firms or NGOs.
- 3.12 The external auditing of the project will be carried out in accordance with the Bank's standard policies and procedures, with the exception that the financial audits of Component I, and the items of Component II mentioned in paragraph 3.5, will be carried out by the external auditors of the United Nations. The relevant executing agency, ECLAC, agrees that:
- It will maintain separate accounting records for the project;
 - The accounting unit of the United Nations will issue a certification of the accounts prior to an external audit;
 - The expenses related to the project, "Information Indicators Program for Disaster Risk Management " Component I and the items of Component II mentioned in paragraph 3.5, will be included in the sample of projects to be revised by the above mentioned Controller's Office.

The executors (ECLAC and IDEA) will open separate commercial bank accounts for the management of the Bank contribution.

F. Procurement of goods and services

- 3.13 The contracting of all consulting services and the acquisition of goods and services will be carried out by ECLAC and IDEA in accordance with the Bank's policies and procedures in these matters, with the following exception.
- 3.14 The Program seeks an exception so that IDEA will be able to hire directly Universidad Nacional de Colombia en Manizales researchers to form a local core team of consultants. The total amount of these contracts is not expected to exceed

US\$70,000. The University's researchers have extensive experience in working with national and municipal systems for risk management, and broad interdisciplinary capabilities, including in the areas of economics, engineering, policy analysis, social and physical sciences. Recently the University has been the principal researcher in the development of indices for natural risks oriented towards national planning and municipal decision-making (with resources from the UNDP). It is precisely the broad technical experience and grounding of these researchers that IDEA requires to execute the Indicators Program. Moreover, none of the researchers to be hired have been involved in the Program design, neither would Bank resources be used to *substitute* their normal salaries. Rather, they would receive payment for the additional time they contribute to the Program, which constitutes an *extra-curricular* activity. Their contracts with the University allow them to engage in this kind of consulting activity.

IV. BENEFITS AND RISKS

A. Benefits

- 4.1 The benefits of this program will be the increased visibility of risk information and risk management in development planning, and the evaluation of appropriate levels of investment in measures to mitigate the impacts of natural hazards throughout the region. Component I, the Information Program, by engaging national policy-makers and evaluating specific risk information, will contribute directly to the identification of future prevention investment projects to be financed by the Bank. In addition, this Component will furnish policy makers with the information and methodologies necessary to analyze and assess their countries' risk bearing infrastructure and thus contribute to responsible risk management strategies.
- 4.2 The Indicators Program will fill an important information gap for policy-making. With it, the countries will have a tool for overseeing and promoting the development of their risk management capacity. The Indicators Program will provide data to be used for the design and implementation of national policy and programs, and gauging whether these policies have their intended effect in reducing vulnerability and managing risk. Countries will be able to look at their relative position over time and in comparison with other countries in the region. For the Bank, the Indicators Program will provide an important tool for focusing its policy dialogue and country assistance programming with member countries on disaster risk management.

B. Risks

- 4.3 Two of the principal risks in this operation are: firstly, it may be difficult to assemble the required expertise to form an effective working group to execute the program; and secondly, that the quality of the indicators methodology may fall short of its ambitious objectives. For these reasons, the operation proposes that two specialized agencies – ECLAC and IDEA – be the implementing agencies for components I and II respectively. ECLAC has extensive experience in the field, the region, and economic aspects, especially in the area of risk information. The Universidad Nacional de Colombia en Manizales/IDEA has the technical expertise and experience base in the region to frame the conceptual foundation, identify and evaluate the quality and applicability of the indicators. Moreover, due to the sophisticated nature of the Indicators Program and given certain maximum payment limitations of the Universidad Nacional de Colombia to hire the Technical Director of Component II, ECLAC and IDEA have agreed for ECLAC, as sponsoring agency of the overall program, to hire the Technical Director for Component II, according to the terms of reference accepted by the Bank. The above risks will further be mitigated by the assistance, advice and peer review available to these implementing agencies from the advisory group of international specialists mentioned in paragraph 3.9.
- 4.4 There is also a risk that the information and indicators identified in the Program will not be absorbed by the desired policy actors. To mitigate this, the pre-study national workshops will help in maximizing the potential impact of the information and indicators by incorporating the pertinent national counterparts and identifying dissemination mechanisms.

C. Environmental and Social Impact

- 4.5 No negative environmental or social impacts were identified for this Technical Cooperation. The document was reviewed by the Committee on Environment and Social Impact (TRG/ 04-01) on 26/Jan/01 and the recommendations proposed are considered in this document. Elements of the IDB Action Plan on Natural Disasters that are being addressed by this operation can be found in paragraph 1.13.

ANNEX I

Detailed Budget (US\$ 000s)

| <i>Information and Indicators Program for Disaster Risk Management</i> | | | | | |
|---|-----------------------|---|-----------------------------|-------------------------|---------------------------|
| Cost Category | JSF (000s) | Implementing Agencies (000s) | Countries (000s) | Total (000s) | Percentage (%) |
| Component I - Risk Information through National Pilot Studies | <u>665</u> | <u>120</u> | <u>70</u> | <u>855</u> | 53% |
| Studies | 465 | 25 | 20 | 510 | |
| Honoraria | | | | | |
| International specialists & advisors (\$10,000 x 34 person months) | 340 | | | 340 | |
| Consulting specialists (\$5,000 x 12 person months) | 50 | 10 | | 60 | |
| Travel and per diem (\$2,500 x 12 trips) | 30 | | | 30 | |
| National Workshops (\$10,000 x 4 countries x 2 workshops) | 45 | 15 | 20 | 80 | |
| Regional workshop, publications and dissemination (*) | 25 | 10 | 50 | 85 | |
| Program Coordination and Management | 162 | 66 | | 228 | |
| Program Coordination (\$5,333 x 15 person months) | 60 | 20 | | 80 | |
| Program Support (administrative support, local staffing, materials, etc.) | 82 | 26 | | 108 | |
| Program Monitoring & Evaluation | 20 | 20 | | 40 | |
| Contingencies | 13 | 19 | | 32 | |
| Component II – Indicators Program | 635 | 50 | 60 | 745 | 47% |
| Construction of indicators and conceptual framework and information collection methodology | 332 | | | 332 | |
| Honoraria | | | | | |
| International experts and advisors (\$10,000 x 20 person months) | 200 | | | 200 | |
| Consulting experts (\$5,000 x 14 person months) | 70 | | | 70 | |
| Research assistants (\$1,000 x 12 person months) | 12 | | | 12 | |

| | | | | | |
|---|--------------|------------|------------|--------------|-------------|
| Travel and per diem | | | | | |
| 3 working meetings (\$2,000 x 25 person trips) (**) | 50 | | | 50 | |
| Testing of methodology in 10 countries | 70 | 10 | | 80 | |
| Honoraria | | | | | |
| International expert (\$2,500 x 10 person weeks) | 25 | | | 25 | |
| National experts (\$1,250 x 20 person weeks) | 25 | | | 25 | |
| Administrative support | | 10 | | 10 | |
| Travel and per diem (\$2,000 x 10 person trips) | 20 | | | 20 | |
| Regional Workshop, publications and dissemination(*) | 25 | | 50 | 75 | |
| Program Coordination and Management | 196 | 40 | | 236 | |
| Technical Program Director (\$8,000 x 15 person months) | 120 | | | 120 | |
| Program Support (administrative support, local staffing, materials, etc.) | 66 | 40 | | 106 | |
| Travel (\$2,500 x 4 trips) | 10 | | | 10 | |
| Contingencies | 12 | | 10 | 22 | |
| TOTAL | 1,300 | 170 | 130 | 1,600 | 100% |

* There will be one joint workshop for both components, to be organized by ECLAC

** Government officials travel at their own expense

ANNEX II - LOGICAL FRAMEWORK

| Narrative Summary | Performance Indicators | Means of Verification | Important Assumptions |
|---|--|--|--|
| Project Goals Contribute to the reduction and management of the risks of natural disasters | Interest of a broad set of public, private and local actors in activities that will reduce vulnerability as an integral part of development | Participation in the various phases of the Technical Cooperation | Goal to Supergoal Access to data and methodology will lead to changes in behavior |
| Project Purpose Improve the data and methodologies available to decision-makers to meet the challenges of reducing and managing their risk to natural disasters. | <ul style="list-style-type: none"> ▪ Sophisticated information assessment methodology that can be used <i>ex-ante</i> and <i>ex-post</i> ▪ Indicators and methodology for measuring key elements of risk management | Final evaluation of components I & II | Purpose to Goal Final products can be packaged in such a way as to facilitate decision making |
| Project Outputs <u>Component I – Risk Information through National Pilot Studies</u> <ul style="list-style-type: none"> • <u>Phase I</u> Improved evaluation methodology for both <i>ex-ante</i> and <i>ex-post</i> assessments • <u>Phase II</u> National workshops to adapt revised methodology to specifics of the four countries and four national studies to provide snapshot of countries' risk bearing infrastructure, including case studies for post-disaster assessment methodology <ul style="list-style-type: none"> ▪ <u>Phase III</u> Regional workshop to compare national experiences and draw out implications for risk management policies in the region ▪ <u>Phase IV</u> Conclusions and findings presented in publishable form so as to be easily disseminated and used in the region <u>Component II – Indicators for Disaster Risk Management</u> <ul style="list-style-type: none"> ▪ <u>Conceptual Foundation</u> Develop conceptual framework underlying a country's vulnerability and the performance of risk management measures ▪ <u>Development of Indicators</u> Manageable set of indicators for country tests ▪ <u>Data Collection and Testing of Indicators</u> Testing and adjustment of indicators in about 10 countries ▪ <u>Regional Workshop</u> Regional workshop to bring together national and international technical and policy authorities to review findings ▪ <u>Conclusions</u> Conclusions and findings presented in publishable form so as to be easily disseminated and used in the region | <u>Component I – Risk Information through National Pilot Studies</u> <p>Conceptual framework of risk bearing infrastructure developed. Revised ECLAC Methodology</p> <p>Four pre-study briefings/workshops Four national studies Four national workshops</p> <p>Final findings of national studies Regional workshop</p> <p>Final report Publishable material for book</p> <u>Component II - Indicators for Disaster Risk Management</u> <p>Formation of a team of specialists Definition of indicators and terminology Development of Methodology</p> <p>Description of indicators</p> <p>Set of data to calculate and adjust indicators 10 country studies to test indicators 10 country reports on results of indicator</p> <p>Regional Workshop Final Report Refined and tested set of indicators</p> <p>Final report Publishable material for book</p> | <u>Component I – Risk Information through National Pilot Studies</u> <p>Deliverables and reports</p> <p>Workshop reports National studies</p> <p>Regional workshop report and proceedings Level of participation in regional workshop</p> <p>ECLAC final report</p> <u>Component II - Indicators for Disaster Risk Management</u> <p>Phase one report Advisory group monitoring</p> <p>Phase two report and monitoring</p> <p>10 country reports Advisory group and Bank monitoring</p> <p>Final Report</p> <p>ECLAC final report</p> | Output to Purpose <ul style="list-style-type: none"> ▪ ECLAC has technical capacity to conduct studies and revise methodology ▪ The right combination of specialists can be incorporated into the teams ▪ ECLAC can secure participation and cooperation of national counterparts in the four countries ▪ Products and activities are delivered in a timely fashion <ul style="list-style-type: none"> ▪ IDEA has technical capacity to define terminology, and design and test indicators ▪ The right specialists will be involved ▪ A clear and concise terminology will be agreed on ▪ Products and activities are delivered in a timely fashion ▪ IDEA can secure participation and cooperation of national counterparts for testing the indicator methodology ▪ Policy-makers will be receptive to the indicators |