

**EARTHQUAKES AND MEGACITIES INITIATIVE**

**MEASUREMENT OF THE RISK MANAGEMENT PERFORMANCE IN  
METRO MANILA**

**GENERAL DESCRIPTION AND FORMS  
FOR EVALUATION**

**20<sup>th</sup> of February, 2006**

## THE RISK MANAGEMENT INDEX (RMI)

The RMI brings together a group of indicators that measure risk management performance and effectiveness. These indicators reflect the organizational, development, capacity and institutional actions taken to reduce vulnerability and losses, to prepare for crisis and to recover efficiently from disasters. This index was designed to assess risk management *performance*. It provides a qualitative measure of management based on predefined *targets* or *benchmarks* that risk management efforts should aim to achieve. The design of the RMI involved establishing a scale of achievement levels or determining the “distance” between current conditions and an objective threshold or conditions in a reference country subnational region, or city.

The RMI is constructed by quantifying four public policies, each of which being described by six indicators. The policies include the identification of risk, risk reduction, disaster management and governance and financial protection. Risk identification (RI) comprises the individual perception, social representation and objective assessment of risk. Risk reduction (RR) involves prevention and mitigation. Disaster management (DM) comprises the response and recovery. And, Governance and financial protection (FP), are related to institutionalization and risk transfer.

The RMI permitted a systematic and quantitative benchmarking of risk management during different periods, as well as comparisons across cities or countries throughout the time. The RMI is novel and far more wide-reaching in its scope than other similar attempts in the past. It is certainly the one that can show the fastest rate of change given improvements in political will or deterioration of governance. This index has the advantage of being composed of measures that directly map of sets specific decisions/actions onto sets of desirable outcomes. The RMI is an innovative indicator, for the measurement of the performance of risk management and its feasible effectiveness, developed and applied by the Institute of Environmental Studies (IDEA in Spanish) of the National University of Colombia, in Manizales, for the Inter-American Development Bank, in the framework of its Program of Indicators for Disaster Risk and Risk Management in the Americas.<sup>1</sup> The Annex 1 presents a paper of the authors of this index to illustrate its application.

The RMI is defined as the average of the four composite indicators:

$$RMI = (RMI_{RI} + RMI_{RR} + RMI_{DM} + RMI_{FP}) / 4 \quad (1)$$

Each indicator is estimated based on five performance levels (*low*, *incipient*, *significant*, *outstanding*, and *optimal*) that correspond to a range from 1 (low) to 5 (optimal).<sup>2</sup> This methodological approach permits the use of each reference level simultaneously as a “performance target” and allows for comparison and identification of results or achievements. Government efforts at formulating, implementing, and evaluating policies should bear these performance targets in mind.

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<sup>1</sup> See more information in <http://idea.unalmz.edu.co>

<sup>2</sup> It is also possible to estimate the RMI by means of weighted sums of fixed values (such as 1 through 5, for example), instead of using fuzzy sets and linguistic descriptions. However, that simplification eliminates the nonlinearity of risk management and yields less accurate results.

It is important to recognize and understand the collective risk to design prevention and mitigation measures. It depends on the individual and social risk awareness and the methodological approaches to assess it. It then becomes necessary to measure risk and portray it by means of models, maps, and indices capable of providing accurate information for society as a whole and, in particular, for decisionmakers. Methodologically,  $RMI_{RI}$  includes the evaluation of hazards, the characteristics of vulnerability in the face of these hazards, and estimates of the potential impacts during a particular period of exposure. The measurement of risk seen as a basis for intervention is relevant when the population recognizes and understands that risk. Figure 1 shows the  $RMI_{RI}$  composition.

**Figure 1.  $RMI_{RI}$  Estimation**

Description	Indicator Weight	
Systematic disaster and loss inventory	<b>RI1</b>	w1
Hazard monitoring and forecasting	<b>RI2</b>	w4
Hazard evaluation and mapping	<b>RI3</b>	w5
Vulnerability and risk assessment	<b>RI4</b>	w6
Public information and community participation	<b>RI5</b>	w7
Training and education on risk management	<b>RI6</b>	w8

$RMI_{RI}$

The major aim of risk management is to reduce risk ( $RMI_{RR}$ ). Reducing risk generally requires the implementation of structural and nonstructural prevention and mitigation measures. It implies a process of anticipating potential sources of risk, putting into practice procedures and other measures to either avoid hazard, when it is possible, or reduce the economic, social and environmental impacts through corrective and prospective interventions of existing and future vulnerability conditions. Figure 2 shows the  $RMI_{RR}$  composition.

**Figure 2.  $RMI_{RR}$  Estimation**

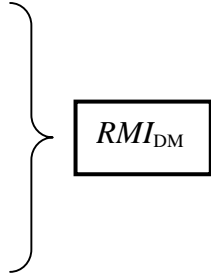
Description	Indicator Weight	
Risk consideration in land use and urban planning	<b>RR1</b>	w1
Hydrographic basin intervention and environmental protection	<b>RR2</b>	w4
Implementation of hazard-event control and protection techniques	<b>RR3</b>	w5
Housing improvement and human settlement relocation from prone areas	<b>RR4</b>	w6
Updating and enforcement of safety standards and construction codes	<b>RR5</b>	w7
Reinforcement and retrofitting of public and private assets	<b>RR6</b>	w8

$RMI_{RR}$

The goal of disaster management ( $RMI_{DM}$ ) is to provide appropriate response and recovery efforts following a disaster. It is a function of the degree of preparation of the responsible institutions as well as the community as a whole. The goal is to respond efficiently and appropriately when risk has become disaster. Effectiveness implies that the institutions (and other actors) involved have adequate organizational abilities, as well as the capacity and plans in place to address the consequences of disasters. Figure 3 shows the  $RMI_{DM}$  composition.

**Figure 3.  $RMI_{DM}$  Estimation**

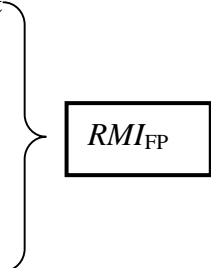
Description	Indicator Weight	
Organization and coordination of emergency operations	<b>DM1</b>	w1
Emergency response planning and implementation of warning systems	<b>DM2</b>	w4
Endowment of equipments, tools and infrastructure	<b>DM3</b>	w5
Simulation, updating and test of inter institutional response	<b>DM4</b>	w6
Community preparedness and training	<b>DM5</b>	w7
Rehabilitation and reconstruction planning	<b>DM6</b>	w8



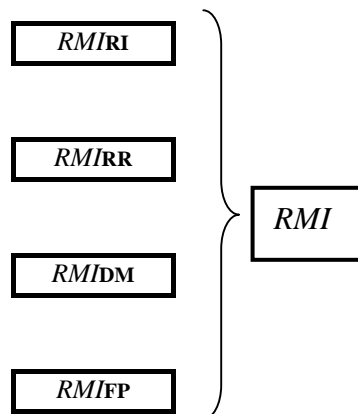
Adequate governance and financial protection ( $RMI_{FP}$ ) are fundamental for sustainability, economic growth and development. They are also basic to risk management, which requires coordination among social actors as well as effective institutional actions and social participation. Governance also depends on an adequate allocation and use of financial resources to manage and implement appropriate retention and transfer strategies for dealing with disaster losses. Figure 3 shows the  $RMI_{FP}$  composition. Lastly, figure 4 shows how to obtain RMI.

**Figure 4  $RMI_{FP}$  Estimation**

Description	Indicator Weight	
Interinstitutional, multisectoral and decentralizing organization	<b>FP1</b>	w1
Reserve funds for institutional strengthening	<b>FP2</b>	w4
Budget allocation and mobilization	<b>FP3</b>	w5
Implementation of social safety nets and funds response	<b>FP4</b>	w6
Insurance coverage and loss transfer strategies of public assets	<b>FP5</b>	w7
Housing and private sector insurance and reinsurance coverage	<b>FP6</b>	w8



**Figure 5. RMI Evaluation**



The effort to measure risk management, when faced with natural phenomena, using indicators is a major challenge from the conceptual, scientific, technical and numerical perspectives.

Indicators must be transparent, robust, representative and easily understood by public policy makers at national, sub-national and urban level. It is important that evaluation methodology have easy application to be used periodically, facilitating management risk aggregation and comparison between countries, cities or regions, or any other territorial level. Also, the methodology should be easy to apply in different time periods, in order to analyze its evolution.

In risk management assessment, it is necessary involving data with incommensurable units or information that only can be valued using linguistic estimates. This is the reason why we are using multi-attribute composite indicators<sup>3</sup> and the fuzzy sets theory as tools to evaluate the effectiveness of risk management. Fuzzy sets have not limits perfectly defined, that is to say the transition between membership and non membership of a variable to the set is gradual. This property is useful when flexibility is needed in modeling, using linguistic or qualitative expressions, as *much, few, light, severe, scarce, incipient, moderate, reliable*, etc.

Indicators are proposed for each public policy. Together, these serve to characterize the risk management performance of a country, region or city. Using a larger number of indicators could be redundant and unnecessary and make the weighting of each indicator difficult. Following the performance evaluation of risk management method proposed by Carreño, Cardona and Barbat (2004)<sup>4</sup>, the valuation of each indicator is achieved using five performance levels: *low, incipient, significant, outstanding, and optimal*. From the numerical perspective these correspond to a range of 1 to 5, low to optimal. Tables 1 to 4 show the performance levels for a city for each public policy.

This methodological approach permits the use of each reference level simultaneously as a “performance target” and therefore allows for comparison and identification of results or achievements. Governments should attempt to direct their efforts at formulation, implementation, and policy evaluation according to these performance targets.

A weight is assigned for each indicator which represents the relative importance of aspects that are evaluated in each of the four public policies. The values assigned to indicators and their respective are established via consultations with extern experts and representatives of institutions charged with the execution of public risk management policies in each country.

The RMI, as indicated in equation 1, is obtained by the average of four risk management The sub-indices of risk management conditions for each type of public policy (RI,RR,DM,FP) are obtained

$$RMI_{c(RI,RR,DM,FP)}^t = \frac{\sum_{i=1}^N w_i I_{ic}^t}{\sum_{i=1}^N w_i} \Big|_{(RI,RR,DM,FP)} \quad (2)$$

<sup>3</sup> This is also known as multi-criteria techniques.

<sup>4</sup> See Annex 1

**Table 1. Risk identification indicators**

<b>Indicator and performance levels</b>	
<b><u>RI1. Systematic disaster and loss inventory</u></b>	<ol style="list-style-type: none"> <li>1. Some basic and superficial data on the history of events that have affected the city</li> <li>2. Continual registering of current events, incomplete catalogues of the occurrence of some phenomena and limited information on losses and effects.</li> <li>3. Some complete catalogues at the national and regional levels, systematization of actual events and their economic, social and environmental effects.</li> <li>4. Complete inventory and multiple catalogues of events; registry and detailed systematization of effects and losses at the local level.</li> <li>5. Detailed inventory of events and effects for all types of existing hazards and data bases at the sub-national and local levels.</li> </ol>
<b><u>RI2. Hazard monitoring and forecasting</u></b>	<ol style="list-style-type: none"> <li>1. Minimum and deficient instrumentation of some important phenomena.</li> <li>2. Basic instrumentation networks with problems of updated technology and continuous maintenance.</li> <li>3. Some networks with advanced technology at the national level or in particular areas; improved prognostics and information protocols established for principal hazards.</li> <li>4. Good and progressive instrumentation cover at the national level, advanced research in the matter on the majority of hazards, and some automatic warning systems working.</li> <li>5. Wide coverage of station and sensor networks for all types of hazard in all the city; permanent and opportune analysis of information and automatic early warning systems working continuously at the local, regional and national levels.</li> </ol>
<b><u>RI3. Hazard evaluation and mapping</u></b>	<ol style="list-style-type: none"> <li>1. Superficial evaluation and basic maps covering the influence and susceptibility of some phenomena.</li> <li>2. Some descriptive and qualitative studies of susceptibility and hazard for principle phenomena at the national scale and for some specific areas.</li> <li>3. Some hazard maps based on probabilistic techniques for the national level and for some regions. Generalized use of GIS for mapping the principle hazards.</li> <li>4. Evaluation is based on advanced and adequate resolution methodologies for the majority of hazards. Microzonation of the city based on probabilistic techniques.</li> <li>5. Detailed studies for the vast majority of potential phenomena throughout the city using advanced methodologies; high technical capacity to generate knowledge on its hazards.</li> </ol>
<b><u>RI4. Vulnerability and risk assessment</u></b>	<ol style="list-style-type: none"> <li>1. Identification and mapping of the principle elements exposed in prone zones in the city.</li> <li>2. General studies of physical vulnerability when faced with the most recognized hazards, using GIS having into account basins inside and near the city.</li> <li>3. Evaluation of potential damage and loss scenarios for some physical phenomena in the principal cities. Analysis of the physical vulnerability of some essential buildings.</li> <li>4. Detailed studies of risk using probabilistic techniques taking into account the economic and social impact of the majority of hazards in some cities. Vulnerability analysis for the majority of essential buildings and life lines.</li> <li>5. Generalized evaluation of risk, considering physical, social, cultural and environmental factors. Vulnerability analysis also for private buildings and the majority of life lines.</li> </ol>
<b><u>RI5. Public information and community participation</u></b>	<ol style="list-style-type: none"> <li>1. Sporadic information on risk management in normal conditions and more frequently when disasters occur.</li> <li>2. Press, radio and television coverage oriented towards preparedness in case of emergency. Production of illustrative materials on dangerous phenomena.</li> <li>3. Frequent opinion programs on risk management issues at the national and local levels. Guidelines for vulnerability reduction. Work with communities and NGOs.</li> <li>4. Generalized diffusion and progressive consciousness; conformation of some social networks for civil protection and NGOs that explicitly promote local risk management issues and practice.</li> <li>5. Wide scale participation and support from the private sector for diffusion activities. Consolidation of social networks and notable participation of professionals and NGOs at all levels.</li> </ol>
<b><u>RI6. Training and education in risk management</u></b>	<ol style="list-style-type: none"> <li>1. Incipient incorporation of hazard and disaster topics in formal education and programs for community participation.</li> <li>2. Some curricular adjustments at the primary and secondary levels. Production of teaching guides for teachers and community leaders in some districts of the city.</li> <li>3. Progressive incorporation of risk management in curricula. Considerable production of teaching materials and undertaking of frequent courses for community training.</li> <li>4. Widening of curricular reform to higher education programs. Specialization courses offered at various universities. Wide ranging community training at the local level.</li> <li>5. High technical capacity of the city to generate risk knowledge. Wide ranging production of teaching materials. Permanent schemes for community training.</li> </ol>

**Table 2. Risk reduction indicators**

<b>Indicator and performance levels</b>
<p><b><u>RR1. Risk consideration in land use and urban planning</u></b></p> <ol style="list-style-type: none"> <li>1. Consideration of some means for identifying risk, and environmental protection in physical planning.</li> <li>2. Promulgation of national legislation and some local regulations that consider some hazards as a factor in territorial organization and development planning.</li> <li>3. Progressive formulation of land use regulations in various cities that take into account hazards and risks; obligatory design and construction norms based on microzonations.</li> <li>4. Wide ranging formulation and updating of territorial organization plans with a preventive approach in the majority of municipalities. Use of microzonations with security ends. Risk management incorporation into sectorial plans.</li> <li>5. Approval and control of implementation of territorial organization and development plans that include risk as a major factor and the respective urban security regulations.</li> </ol>
<p><b><u>RR2. Hydrographic basin intervention and environmental protection</u></b></p> <ol style="list-style-type: none"> <li>1. Inventory of basins and areas of severe environmental deterioration or those considered to be most fragile.</li> <li>2. Promulgation of legal dispositions that establish the obligatory nature of reforestation, environmental protection and river basin planning.</li> <li>3. Formulation of the plan for organization and intervention in strategic water basins and sensitive zones taking into account risk and vulnerability aspects.</li> <li>4. Environmental protection plans and impact studies, that consider risk a factor in determining investment decisions.</li> <li>5. Intervention of deteriorated basins, sensitive zones and strategic ecosystems. Environmental intervention and protection plans.</li> </ol>
<p><b><u>RR3. Implementation of hazard-event control and protection techniques</u></b></p> <ol style="list-style-type: none"> <li>1. Some structural control and stabilization measures in some more dangerous places.</li> <li>2. Channeling works, sanitation and water treatment constructed following security norms.</li> <li>3. Establishment of measures and regulations for the design and construction of hazard control and protection works in harmony with territorial organization dictates.</li> <li>4. Wide scale intervention in mitigable risk zones using protection and control measures.</li> <li>5. Wide implementation of mitigation plans and adequate design and construction of cushioning, stabilizing, dissipation and control works in order to protect human settlements and social investment.</li> </ol>
<p><b><u>RR4. Housing improvement and human settlement relocation from prone-areas</u></b></p> <ol style="list-style-type: none"> <li>1. Identification and inventory of marginal human settlements located in hazard prone areas.</li> <li>2. Promulgation of legislation establishing the priority of dealing with deteriorated urban areas at risk for improvement programs and social interest housing development.</li> <li>3. Programs for upgrading the surroundings, existing housing, and relocation from risk areas.</li> <li>4. Progressive intervention of human settlements at risk and adequate treatment of cleared areas.</li> <li>5. Notable control of risk areas of the city and relocation of the majority of housing constructed in non mitigable risk zones.</li> </ol>
<p><b><u>RR5. Updating and enforcement of safety standards and construction codes</u></b></p> <ol style="list-style-type: none"> <li>1. Voluntary use of norms and codes from other countries without major adjustments.</li> <li>2. Adaptation of some requirements and specifications according to some national and local criteria and particularities.</li> <li>3. Promulgation and updating of obligatory urban norms based on international or national norms that have been adjusted according to the hazard evaluations.</li> <li>4. Technological updating of the majority of security and construction code norms for new and existing buildings with special requirements for special buildings and life lines.</li> <li>5. Permanent updating of codes and security norms: establishment of local regulations for construction in the city based on urban microzonations, and their strict control and implementation.</li> </ol>
<p><b><u>RR6. Reinforcement and retrofitting of public and private assets</u></b></p> <ol style="list-style-type: none"> <li>1. Retrofitting and sporadic adjustments to buildings and life lines; remodeling, changes of use or modifications.</li> <li>2. Promulgation of intervention norms as regards the vulnerability of existing buildings. Strengthening of essential buildings such as hospitals or those considered indispensable.</li> <li>3. Some mass programs for evaluating vulnerability, rehabilitation and retrofitting of hospitals, schools, and the central offices of life line facilities. Obligatory nature of retrofitting.</li> <li>4. Progressive number of buildings retrofitted, life lines intervened, some buildings of the private sector retrofitted autonomously or due to fiscal incentives given by government.</li> <li>5. Massive retrofitting of principal public and private buildings. Permanent programs of incentives for housing rehabilitation lead to lower socio-economic sectors.</li> </ol>

**Table 3. Disaster Management Indicators**

<b>Indicator and performance levels</b>
<p><b><u>DM1. Organization and coordination of emergency operations</u></b></p> <ol style="list-style-type: none"> <li>1. Different organizations attend emergencies but lack resources and various operate only with voluntary personnel.</li> <li>2. Specific legislation defines an institutional structure, roles for operational entities and coordination of emergency commissions throughout the territory.</li> <li>3. Considerable coordination exists in some districts of the city, between organizations in preparedness, communications, search and rescue, emergency networks, and management of temporary shelters.</li> <li>4. Permanent coordination for response between operational organizations, public services, local authorities and civil society organizations in the majority of districts</li> <li>5. Organization models that involve structures of control, instances of resources coordination and management. Advanced levels of interinstitutional organization between public, private and community based bodies.</li> </ol>
<p><b><u>DM2. Emergency response planning and implementation of warning systems</u></b></p> <ol style="list-style-type: none"> <li>1. Basic emergency and contingency plans exist with check lists and information on available personnel.</li> <li>2. Legal regulations exist that establish the obligatory nature of emergency plans. Articulation exists with technical information providers at the national level.</li> <li>3. Protocols and operational procedures are well defined in the city. Various prognosis and warning centers operate continuously.</li> <li>4. Emergency and contingency plans are complete and associated with information and warning systems in the majority of districts.</li> <li>5. Response preparedness based on probable scenarios in all districts. Use of information technology to activate automatic response procedures.</li> </ol>
<p><b><u>DM3. Endowment of equipments, tools and infrastructure</u></b></p> <ol style="list-style-type: none"> <li>1. Basic supply and inventory of resources only in the operational organizations and emergency commissions.</li> <li>2. Centre with reserves and specialized equipment for emergencies at national level and in some districts. Inventory of resources in other public and private organizations.</li> <li>3. Emergency Operations Centre which is well stocked with communication equipment and adequate registry systems. Specialized equipment and reserve centers exist in various districts.</li> <li>4. EOCs are well equipped and systematized in the majority of districts. Progressive complimentary stocking of operational organizations.</li> <li>5. Interinstitutional support networks between reserve centers and EOCs are working permanently. Wide ranging communications, transport and supply facilities exist in case of emergency.</li> </ol>
<p><b><u>DM4. Simulation, updating and test of inter institutional response</u></b></p> <ol style="list-style-type: none"> <li>1. Some internal and joint institutional simulations between operational organizations exist in the city.</li> <li>2. Sporadic simulation exercises for emergency situations and institutional response exist with all operational organizations.</li> <li>3. Desk and operational simulations with the additional participation of public service entities and local administrations in various districts.</li> <li>4. Coordination of simulations with community, private sector and media at the local level, and in some districts.</li> <li>5. Testing of emergency and contingency plans and updating of operational procedures based on frequent simulation exercises in the majority of districts.</li> </ol>
<p><b><u>DM5. Community preparedness and training</u></b></p> <ol style="list-style-type: none"> <li>1. Informative meetings with community in order to illustrate emergency procedures during disasters.</li> <li>2. Sporadic training courses with civil society organizations dealing with disaster related themes.</li> <li>3. Community training activities are regularly programmed on emergency response in coordination with community development organizations and NGOs</li> <li>4. Courses are run frequently with communities in the majority of cities and municipalities on preparedness, prevention and reduction of risk.</li> <li>5. Permanent prevention and disaster response courses in all municipalities within the framework of a training program in community development and in coordination with other organizations and NGOs.</li> </ol>
<p><b><u>DM6. Rehabilitation and reconstruction planning</u></b></p> <ol style="list-style-type: none"> <li>1. Design and implementation of rehabilitation and reconstruction plans only after important disasters.</li> <li>2. Planning of some provisional recovery measures by public service institutions and those responsible for damage evaluation.</li> <li>3. Diagnostic procedures, reestablishment and repairing of infrastructure and production projects for community recovery.</li> <li>4. Ex ante undertaking of recovery plans and programs to support social recovery, sources of employment and productive means for communities.</li> <li>5. Generalized development of detailed reconstruction plans dealing with physical damage and social recovery based on risk scenarios. Specific legislation exists and anticipated measures for reactivation.</li> </ol>

**Table 4. Governance and Financial Protection (loss transfer)**

<b>Indicator and performance levels</b>
<p><b><u>FP1. Interinstitutional, multisectoral and decentralizing organization</u></b></p> <ol style="list-style-type: none"> <li>1. Basic organizations in commissions, principally with an emergency response approach.</li> <li>2. Interinstitutional and multisectoral organization for the integral management of risk.</li> <li>3. Interinstitutional risk management systems active. Work in the design of public policies for vulnerability reduction.</li> <li>4. Continuous and decentralized implementation of risk management projects associated with programs of environmental protection, energy, sanitation and poverty reduction.</li> <li>5. Expert personnel with wide experience incorporating risk management in sustainable human development planning in major cities. High technology information systems available.</li> </ol>
<p><b><u>FP2. Reserve funds for institutional strengthening</u></b></p> <ol style="list-style-type: none"> <li>1. A reserve fund does not exist for a city. City depends of national disaster or calamity funds.</li> <li>2. City depends on economic support from national level. International resources management is made. Incipient risk management strengthens.</li> <li>3. Some occasional funds to co-finance risk management projects in the city exist in an interinstitutional way.</li> <li>4. A reserve fund in the city exists, regulated for project co financing institutional strengthens and recovering in case of disaster.</li> <li>5. A reserve fund operates in the city. Financial engineering for the design of retention and risk transfer instruments.</li> </ol>
<p><b><u>FP3. Budget allocation and mobilization</u></b></p> <ol style="list-style-type: none"> <li>1. Limited allocation of national budget to competent institutions for emergency response.</li> <li>2. Legal norms establishing budgetary allocations to local level organizations with risk management objectives.</li> <li>3. Legally specified specific allocations for risk management at the local level and the frequent undertaking of interadministrative agreements for the execution of prevention projects.</li> <li>4. Progressive allocation of discretionary expenses at the national and municipal level for vulnerability reduction, the creation of incentives and rates of environmental protection and security.</li> <li>5. Local orientation and support for loans requested by municipalities and sub national and local organizations from multilateral loan organizations.</li> </ol>
<p><b><u>FP4. Implementation of social safety nets and funds response</u></b></p> <ol style="list-style-type: none"> <li>1. Sporadic subsidies to communities affected by disasters or in critical risk situations.</li> <li>2. Permanent social investment funds created to support vulnerable communities focusing on the poorest socio-economic groups.</li> <li>3. Social networks for the self protection of means of subsistence of communities at risk and undertaking of post disaster rehabilitation and reconstruction production projects.</li> <li>4. Regular micro-credit programs and gender oriented activities oriented to the reduction of human vulnerability.</li> <li>5. Generalized development of social protection and poverty reduction programs integrated with prevention and mitigation activities throughout the territory.</li> </ol>
<p><b><u>FP5. Insurance coverage and loss transfer strategies of public assets</u></b></p> <ol style="list-style-type: none"> <li>1. Very few public buildings are insured.</li> <li>2. Obligatory insurance of public goods. Deficient insurance of infrastructure</li> <li>3. Progressive insurance of public goods and infrastructure.</li> <li>4. Design of programs for the collective insurance of buildings and publically rented infrastructure.</li> <li>5. Analysis and generalized implementation of retention and transfer strategies for losses to public goods, considering reinsurance groups, risk titles, bonds, etc.</li> </ol>
<p><b><u>FP6. Housing and private sector insurance and reinsurance coverage</u></b></p> <ol style="list-style-type: none"> <li>1. Low percentage of private goods insured. Incipient, economically weak and little regulated insurance industry.</li> <li>2. Regulation of insurance industry controls over solvency and legislation for insurance of house loan and housing sector.</li> <li>3. Development of some careful insurance studies based on advanced probabilistic estimates of risk, using microzoning, auditing and optimum building inspection.</li> <li>4. Design of collective housing insurance programs and for small businesses by the city and insurance companies with automatic coverage for the poorest.</li> <li>5. Strong support for joint programs between government and insurance companies in order to generate economic incentives for risk reduction and mass insurance.</li> </ol>

## **EVALUATION FORMS**

Forms 1 to 4 allow the allocation of the qualifications of each indicator according to the descriptions of the tables 1 to 4. Forms 5 to 9 allow allocation of importance factors for determination of weights by means of the Analytic Hierarchy Process (AHP). Comparisons are made by pairs. Also, the preference is expressed by means of a scale from 1 to 9. Preference 1 means equality between indicators while a preference of 9 means that an indicator is 9 times more important than the other. These comparisons result in a comparison matrix to which its consistency is processed by means of a numerical process later. It is requested to select which of the indicators is perceived as more important and in which degree, pair by pair, using an X, according to the judgment of the advisor. The Table 5 shows the scale for assigning the comparative importance between pairs of indicators (Saaty and Vargas 1991)<sup>5</sup>.

**Table 5. Scale for the comparative importance**

<b>Importance judgment</b>	<b>Points</b>
Extremely more important	9
	8
Very strongly more important	7
	6
Strongly more important	5
	4
Moderately more important	3
	2
Equally important	1

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<sup>5</sup> See paper of Annex 1.

## Form 1. Indicators of risk identification

Place an **X** in front of the performance level obtained in each year according to the table 1

Indicator	1985	1990	1995	2000	200?
RI1. Systematic disaster and loss inventory	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RI2. Hazard monitoring and forecasting	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RI3. Hazard evaluation and mapping	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RI4. Vulnerability and risk assessment	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RI5. Public information and community participation	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RI6. Training and education in risk management	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>

## Form 2. Indicators of risk reduction

Place an **X** in front of the performance level obtained in each year according to the table 2

Indicator	1985	1990	1995	2000	200?
RR1. Risk consideration in land use and urban planning	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RR2. Hydrographic basin intervention and environmental protection	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RR3. Implementation of hazard-event control and protection techniques	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RR4. Housing improvement and human settlement relocation from prone-areas	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RR5. Updating and enforcement of safety standards and construction codes	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
RR6. Reinforcement and retrofitting of public and private assets	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>

### Form 3. Indicators of disaster management

Place an **X** in front of the performance level obtained in each year according to the table 3

<b>Indicator</b>	<b>1985</b>	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>200?</b>
DM1. Organization and coordination of emergency operations	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
DM2. Emergency response planning and implementation of warning systems	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
DM3. Endowment of equipments, tools and infrastructure	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
DM4. Simulation, updating and test of inter institutional response	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
DM5. Community preparedness and training	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
DM6. Rehabilitation and reconstruction planning	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>

### Form 4. Indicators of Governance and Financial Protection (Loss transfer)

Place an **X** in front of the performance level obtained in each year according to the table 4

<b>Indicator</b>	<b>1985</b>	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>200?</b>
FP1. Interinstitutional, multisectoral and decentralizing organization	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
FP2. Reserve funds for institutional strengthening	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
FP3. Budget allocation and mobilization	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
FP4. Implementation of social safety nets and funds response	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
FP5. Insurance coverage and loss transfer strategies of public assets	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>
FP6. Housing and private sector insurance and reinsurance coverage	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>	1. <i>Low</i>
	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>	2. <i>Incipient</i>
	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>	3. <i>Significative</i>
	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>	4. <i>Outstanding</i>
	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>	5. <i>Optimal</i>

### Form 5. Importance factor allocation to indicators of risk identification (AHP)

**Which of the indicators is perceived as more important?**

Place an **X** in front

**In which degree?**

Place an **X**

				1	2	3	4	5	6	7	8	9
	<b>RI1.</b> Systematic disaster and loss inventory	vs.										
	RI1. Systematic disaster and loss inventory	vs.	RI2. Hazard monitoring and forecasting									
	RI1. Systematic disaster and loss inventory	vs.	RI3. Hazard evaluation and mapping									
	RI1. Systematic disaster and loss inventory	vs.	RI4. Vulnerability and risk assessment									
	RI1. Systematic disaster and loss inventory	vs.	RI5. Public information and community participation									
	RI1. Systematic disaster and loss inventory	vs.	RI6. Training and education in risk management									
	<b>RI2.</b> Hazard monitoring and forecasting	vs.	RI3. Hazard evaluation and mapping									
	RI2. Hazard monitoring and forecasting	vs.	RI4. Vulnerability and risk assessment									
	RI2. Hazard monitoring and forecasting	vs.	RI5. Public information and community participation									
	RI2. Hazard monitoring and forecasting	vs.	RI6. Training and education in risk management									
	<b>RI3.</b> Hazard evaluation and mapping	vs.	RI4. Vulnerability and risk assessment									
	RI3. Hazard evaluation and mapping	vs.	RI5. Public information and community participation									
	RI3. Hazard evaluation and mapping	vs.	RI6. Training and education in risk management									
	<b>RI4.</b> Vulnerability and risk assessment	vs.	RI5. Public information and community participation									
	RI4. Vulnerability and risk assessment	vs.	RI6. Training and education in risk management									
	<b>RI5.</b> Public information and community participation	vs.	RI6. Training and education in risk management									





## Form 8. Importance Factor Allocation to Indicators of Governance and Financial Protection (Loss Transfer) (AHP)

**Which of the indicators is perceived as more important?**

Place an **X** in front

**In which degree?**

Place an **X**

			In which degree?									
			Place an <b>X</b>									
			1	2	3	4	5	6	7	8	9	
	<b>FP1.</b> Interinstitutional, multisectoral and decentralizing organization	vs.										
	FP1. Interinstitutional, multisectoral and decentralizing organization	vs.										
	FP1. Interinstitutional, multisectoral and decentralizing organization	vs.										
	FP1. Interinstitutional, multisectoral and decentralizing organization	vs.										
	FP1. Interinstitutional, multisectoral and decentralizing organization	vs.										
	<b>FP2.</b> Reserve funds for institutional strengthening	vs.										
	FP2. Reserve funds for institutional strengthening	vs.										
	FP2. Reserve funds for institutional strengthening	vs.										
	FP2. Reserve funds for institutional strengthening	vs.										
	<b>FP3.</b> Budget allocation and mobilization	vs.										
	FP3. Budget allocation and mobilization	vs.										
	FP3. Budget allocation and mobilization	vs.										
	<b>FP4.</b> Implementation of social safety nets and funds response	vs.										
	FP4. Implementation of social safety nets and funds response	vs.										
	<b>FP5.</b> Insurance coverage and loss transfer strategies of public assets	vs.										

## **ANNEX 1**