INDIAN OCEAN
COMMISSION

New methods to protect our people and our economy against Disaster Risk and Climate Change

ISLANDS
Nos îles. Nos vies. Notre devenir.
Our lands. Our life. Our future.

UNISDR
The United Nations Office for Disaster Risk Reduction

Project funded by the European Union

A new initiative

New action is being launched by the Indian Ocean Commission in partnership with UNISDR to help the countries of the Indian Ocean region protect their people against the damage and loss that result from catastrophic events. Catastrophes are becoming more and more frequent, and their impact on the economy is more and more devastating. Climate change is intensifying the risk of disaster, and losses will soon soar to record amounts unless quick, efficient action is undertaken.

Governments of the region are aware of increasing risk and have begun to integrate measures for disaster isk reduction and climate change adaptation into national planning and investment. They know that they must ensure the safety and stability of their budgets and of public investment.

But it is hard to justify increasing investment in disaster risk management, since it is difficult for governments to quantify these investments and losses and therefore make the economic and political case for disaster risk reduction. It is also difficult to determine resources needed to assess future risks and build governance capacity. Yet many studies have shown that investing in disaster risk reduction is highly cost-effective and can save many times over the investment in humanitarian aid costs. The new initiative is designed to help governments achieve this aim.

More recent and reliable methodology

The initiative will provide governments with a new, more robust methodology that will enable them to calculate the nature and extent of future risks with much more accuracy, particularly those related to weather and climate hazards.

Traditional ways of preparing for disasters are not enough. Until now, the method has been to use statistics concerning previous catastrophic events to forecast future needs. But these statistics can no longer be used for predicting the future. Conventional analysis is unable to capture new, emerging dangers, the interactions between different kinds of dangers, and the impact of climate change.

The new initiative will help governments to draw up a scientifically valid probability index of future disasters with estimates of the specific damage they will cause. This will be used to introduce new and result-oriented measures for disaster risk reduction and disaster management. Additionally, in the longer run, this will lead to increased risk sensitive planning and investment, both for the government and the private sector. It will also serve as a basis for the future introduction of a regional system or risk insurance, known as risk financing and transfer mechanisms, which will enable governments and the productive sector to make sound decisions to ensure the sustainability of their investments.

Aims of the project

1. To help countries learn new techniques

More accurate techniques mean that individual risk profiles for each country can now be drawn up, based not only on past knowledge but also on multiple interrelated forecasted factors, including climatic change. These probabilistic models, combining hazard, vulnerability and exposure models are accurate and realistic. They have to be produced by national experts. The aim of the programme is therefore to help each country learn to master the new techniques, by organizing methodology and training workshops.

2. To help countries claim ownership

All programme activities are designed to enable each country assume ownership of the project. The aim is not to provide ready-made solutions from the outside, but to transfer technical knowledge and expertise to the national structures in each country, thus strengthening resilience.

The initiative reaches out to all stakeholders involved in risk reduction activities including the representatives of National Platforms set up within the framework of UNISDR, and relief management agencies. A national Hosting Agency for these activities will be designated.
The impact and visibility of disaster reduction and climate adaptation activities will be reinforced by integrating them into central governmental concerns. At the close of the project, each country will not only have acquired complete mastery of modern techniques for establishing risk profiles, but will also have developed a national capacity for risk profile modeling.

3. To harmonize initiatives

A major aim is to harmonize efforts that are being undertaken in IOC countries in this area so that countries can benefit from pooled knowledge and resources. The seminars organized by the programme are the starting point for discussion concerning the coordination of local and regional priorities for risk financing and transfer mechanisms. They train participants in in the use of a standardized methodology that will be applied throughout all the countries of the region. Countries also attend international seminars to learn from the experiences of other island regions.

All activities are aligned with UNISDR Global Assessment Report (GAR) recommendations and with the the Hyogo Framework for Action. They are also fully aligned with the European Commission's Disaster Risk Reduction Strategy and with the European Union's Environment and Natural Resources Thematic Programme.

SPECIFIC OBJECTIVE	DESCRIPTION	ACTIVITIES	EXPECTED	RESULTS INDICATORS
Build the capacity to properly account, valuate and analyze disaster losses through the development of national disaster loss databases	A capacity increase and technical support to governments will allow development of national disaster loss databases, which represents a low-cost, high-impact strategy to systematically account for all disaster losses. Disaster loss databases are the crucial first step to generate the information necessary for accurate risk assessments and to inform public policy in CCA and DRR. As a second step, countries will develop the capacity to allow the physical losses recorded in the databases to be translated into monetary/economic losses enabling an initial evidence-based estimate of recurrent losses. UNISDR has already helped building disaster loss databases in more than 60 countries, (see global site www.desinventar.net, etc.). UNISDR has estimated that present losses in all countries are greatly underestimated.	Strengthening capacities for national loss accounting **Activity 1:** National workshop: Staff from government agencies, UN, and other partners on each country will be familiarized with the methodology and tools for building national disaster databases. Loss databases are suggested to be built using the DesInventar methodology and free open source software tools, with a high degree of interoperability with other systems, including GIS and statistical information systems **Activity 2:** Data collection and entry: additional capacity in human resources will be provided to national teams in each country so that governments will be able to collect historical disaster data covering a 20 to 30 year period and build a fist version of a loss database. **Activity 3:** Training and technical assistance will be provided to countries to ensure the capacity for conducting analysis of historical risk trends and patterns and estimation of recurrent economic losses. National governments will then be expected to undertake a preliminary analysis of risk patterns and trends and the estimation of recurrent economic losses using their collected disaster data.	**Expected Result 1.1:** All Countries will have the required capacity and willundertake the creation and/or update of national disaster databases. In addition to the specific capacity development detailed in this Grant, assistance could also beprovided on how to develop a large number of sub-products that can be obtained from disaster databases ranging from Historical Disaster Risk Indexes and maps to statistics on the accumulated impact of disasters in a country. **Expected Result 1.2:** Capacity and infrastructure built in the country to operate and analyze or reinforcement of the process of institutionalization disaster loss databases in 4 countries. On each country a 'Hosting Agency' will take ownership and responsibility of operating and maintaining the dataset; previous experiences have successful implementations with emergency management and environmental agencies, among others. Disaster databases require minimal hardware to run and can leverage existing computational infrastructure.	▪ The number of disaster loss databases builds by the beneficiary countries as consequence of the capacity building activities. ▪ The number of trained personnel who are able to operate disaster loss databases. ▪ The number of Government staff who are able to use and analyze disaster loss databases information and software. ▪ The number of Hosting National agencies operating or in possession of a disaster database

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Build the capacity to assess and understand disaster risk through handson training on actual development of probabilistic risk assessments for the countries, which will allow the construction of Hybrid Risk Models	The initial capacity to derive risk estimates empirically will be complemented with additional training and assistance to perform analytical (i.e., modeled) assessment of catastrophic risks (flood, cyclone, landslide, drought and other climate-related hazards, as well as geological origin hazards such as earthquake, volcanic and tsunami). With these capacities, countries will be able to combine the analytical assessment with disaster loss data indicators and economic valuations to construct Hybrid Risk Models that estimate the full spectrum of risk the country faces. Through these initiatives the 4 countries have the capacity to and will be expected to build state-of-the-art Hybrid Risk Models, which integrate Probabilistic Risk Assessments with the outputs of disaster loss databases, using methodologies that have been developed jointly with the World Bank using the CAPRA free open source platform. UNISDR and the World Bank have implemented CAPRA in a number of countries (see www.ecapra.org). Fully documented experiences are available in Colombia, Mexico and Nepal. The GAR 2011 documents in Chapter 5 how these models operate. Through this initiative, member countries will have the skills and staff that will have the opportunity of improving and integrating DRM and CCA as one of the areas of their work plan, while at the same time they will strengthen their capacities and create a risk information baseline. These objectives will be reached through building capacity and accompanying the countries with technical support in producing the models in a hands-on approach that will guarantee countries have full ownership of the processes and data that allow better understanding of the risk they face. This will be achieved by means of continuous transfer of knowledge and extensive training given in National Workshops while actually building the products adjusted tocountry needs.	Strengthening capacities for probabilistic risk assessment and risk management portfolio development **Activity 1:** Estimations of hazards: training on how information will be compiled from a variety of local sources to reach a characterization of major hazards. **Activity 2:** Instruction on quantification and characterization of the exposure and vulnerability of public assets at risk: national teams will acquire the capacity to calculate the value of exposed public assets, and will be able and expected to assign vulnerability classes or functions to these elements. **Activity 3:** Training and guidance on Probabilistic Risk Assessment: By developing the capacity in the countries to use CAPRA (or equivalent) tools, it is expected that risk will be assessed and initial outputs such as profiles and hazard and risk maps produced by countries including forecasted catastrophic risk. **Activity 4:** Training and guidance on Generation of Hybrid models: increasing the capacity in government and local teams to address this topic will permit countries to produce probabilistic risk metrics combining the estimation of historical losses with the probability of forecasted catastrophic losses.	**Expected Result 2.1:** All 4 beneficiary countries will have the required capacity and will undertake the development of comprehensive, multi-hazard, probabilistic risk assessments. These risk assessments will include country profiles, hazard, vulnerability and risk maps and a the basic set of risk metrics (AAL, PML, PRP, etc) that will allow countries to understand the full spectrum of risks they face. **Expected Result 2.2:** Capacity built in the country to continuously improve, operate and enhance the analysis of probabilistic risk assessments. As in the case of the Loss databases, one 'Hosting Agency' will be selected in the country, which will take ownership, operate and maintain the risk assessments. In both cases these hosting agencies will be the repositories of the capacity built in the country. **Expected Result 2.3:** Development or improvement of skills and capacities in these 4 countries to combine loss data results with national probabilistic assessments to allow countries to develop hybrid risk models and assessments, covering both extensive and intensive risks.	▪ The number of probabilistic risk assessments (by hazard) build by the beneficiary countries as consequence of the training and technical assistance provided through this Grant. ▪ The set of Risk Maps produced for different hazards on each beneficiary country as consequence of the capacity built through this Grant. ▪ The number of trained personnel who are able to produce a hazardspecific risk assessment ▪ The number of Government staff who are able to read and analyse risk maps and probabilistic risk measures.

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Build the capacity to define risk transfer and financing mechanisms and to incorporate climate change adaptation and disaster risk reduction into the country's national public investment and development planning system.	Hybrid models and loss exceedance curves provide the basis for calculating how much risk a country must retain and how much it could share through insurance or other means, how much the country should be investing in climate change adaptation and disaster risk reduction and what an optimal portfolio of adaptation and risk management investments could look like. This calculation will build on the risk estimations identified in Component 2 and on the experiences of other countries in incorporating climate change adaptation and risk reduction into their public investment planning systems. A first step to reach this objective will be a joint review of existing national budgeting and public spending to develop the capacity of providing an overview of what priority is currently being given to DRR. Specifically, the review would seek to guide governments in identifying historical levels of public spending for (a) disaster response (b) post disaster reconstruction (c) disaster reduction investments (d) climate change adaptation and (e) insurance and reinsurance schemas. The review will also work to identify the proportion of development investments (schools, health facilities, infrastructure, roads etc.) which are made factoring in disaster risk considerations and the proportion which are not. The review will also use tools such as the World Bank Disaster Aid Tracking instrument to identify flows of ODA towards disaster risk reduction. A second step will be the review of current mechanisms to include DRR in public investment examining whether there are existing mechanisms in national, sector and public investment planning or project formulation to ensure that DRR and CCA considerations are factored into public investment.	Strengthening capacities for incorporating risk management into public investment planning and decision making **Activity 1:** Joint Review of portfolio of existing investments in CCA and DRR. This initial portfolio which will be analyzed to establish impact and cost-benefit ratio. **Activity 2:** Providing guidance for the characterization of an optimum risk management portfolio: work with planning or finance ministries to training them in estimating how much risk should be retained and how much can be reduced or transferred. Estimations of the costs and benefits of potential prospective and corrective disaster risk management investments will be conducted in order to suggest an optimal portfolio. **Activity 3:** Incorporating risk management into public investment planning and decision making: a set of methods and procedures appropriate to the institutional architecture and mechanisms and administrative procedures of each country would be developed and suggested o governments based on the experience of countries that have already incorporated disaster risk considerations into their national public investment and planning systems.	**Expected Result 2.4:** Support provided to these countries in the formulation and calculation of an optimal portfolio of DRR and CCA investments. **Expected Result 2.5:** Capacity building in these countries to actually incorporate climate change adaptation and disaster risk reduction into the country's national public investment and development planning system. **Expected Result 2.6:** Public investment planning, land use, development, CCA and DRR plans in most of the target countries informed by evidence on recurrent losses, probable future risks and on the assessment of the costs and benefits of reducing disaster risk. **Expected Result 2.7:** A measurable increase of National and sector-based public investment contributing to a medium term and sustainable reduction in disaster risk and to adaptation to climate change in the majority of target countries.	▪ The number of National Consultants/Government staff trained to perform analysis of the financials and economics of risk. ▪ Number of DRR/CCA Agencies in target countries having a reviewed investment portfolio informed by risk and loss analysis outputs ▪ Number of Governments in which conditions are set for increased/integrated public investments sensitive to DRR/CCA, by developing or proposing legislation and/or administrative mechanisms in this sense.

Blue Tower, 4th floor, Rue de l'Institut,
Ebène, Mauritius
Phone: (+230) 402 61 00
Fax: (+230) 466 01 60
secretariat.islands@coi-ioc.org
www.coi-ioc.org