

**PAHO Conference on Hospital Mitigation**

**II Commission:     Role of International Development  
Financing Agencies**

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## **I. Introduction**

International development financing institutions, or lending institutions as the banks prefer to be called, respond to requests from eligible developing countries for loans to finance needed social infrastructure. These institutions develop internal policies for priorities and conditions under which they will concede loans. Their objective is to assist the borrower, whether the central government, one of its dependent institutions, or a designated quasi-public or private entity, in producing and executing an acceptable loan project. Lending institutions expect a return on the loan they make.

Their specific policies may direct lending to certain sectors, population groups, or geographical areas, and on occasion these policies may have as an objective a change (albeit imposed) in the products or services to be provided by the loan. The majority of conditions negotiated during the project cycle, however, are financial or administrative (OAS, 1988).

Mitigation of natural hazard risks is rarely a specific objective of the loan as seen by the lender or the borrower. It is presumed that the financing provided will be used wisely to produce a performing loan. The institutional structure of lending institutions does not promote sensitivity to risk considerations at the earliest stage of project review (OAS, 1988). The lender usually assumes a risk-neutral stance whereby the borrower will sufficiently guarantee the loan so that whatever damage may occur to facilities built with the loan proceeds, the lender will nonetheless recover its money (OAS, 1988).

The technical and administrative uncertainties of implementing development programs tax the lending institutions sufficiently to make them cautious about complex project analysis procedures or programs that are administratively demanding. Asking an institution to consider additional policy objectives that require careful analysis and that are difficult to administer is likely to meet resistance from the project staff. The traditional caveats that donors cannot override the sovereignty of borrowing governments, that they cannot fund activities that governments do not request, and that they cannot control the implementation process are normally valid as well (OAS, 1988).

In the case of the health sector, loans are used to build needed facilities which meet sector goals. In most instances it is assumed that the facilities built will serve throughout the life of the loan and beyond. There is rarely an explicit loan objective of addressing vulnerability to natural hazards such as earthquakes, floods, volcanic eruptions, tsunami and landslides. Nor is there usually explicit mention of protecting the life of the patient

from natural disasters while in the medical facility, nor of protecting the lives of the staff or visitors, nor of protecting the equipment and services offered by the facility during and after a disaster.

It is also assumed that construction of new facilities or the addition to or modification of existing facilities will withstand perceivable natural events. Even though benefit-cost studies may be prepared as part of the loan preparation process, possible loss of structures to natural events and the benefits of natural hazard vulnerability reduction measures to achieve specific levels of risk are rarely identified. No distinction is usually made between an investment sufficient to avoid structural collapse and one sufficient to avoid functional collapse.

Damage to health facilities, from large national hospital centers to neighborhood clinics, following natural events are all too common. In the last 20 years, more than 100 hospital facilities in the Americas, serving up to 12 million people, have been affected by earthquakes. Replacement costs, at current costs, are more than US \$700 million (PAHO, 1993, Vol. I). What, then, is the role of lending institutions in mitigating the losses due to natural events?

## **II. Rationale for Mitigation as Part of Health Sector Infrastructure Financing**

### ***A. The Need for Increasing the Availability of Infrastructure***

The availability of health facilities in developing countries usually falls far short of the need. Following more than a decade of under-capitalization of the sector, attention is now being turned to investment, together with a change in the number, location and scope of service delivery of health facilities. In some instances, post-disaster reconstruction has prompted radical changes in the structure and function of health facilities, as is the case following the 1985 Mexico City earthquake. But often, site selection, design and construction of health facilities are subject to political pressures, and decision-making processes and project development responsibility are outside the direct control of the health sector.

*B. The Intersecting Need of Reducing Existing Vulnerability and New Investments in the Sector*

Notwithstanding the need for new facilities, the vast majority of health infrastructure that will carry the sector into the next century already exists. Much of the existing stock is vulnerable to natural events because of the lack of knowledge of natural hazards when the facilities were built, inadequate design and/or construction practices, or subsequent modifications to the structures and/or their uses. Few countries have identified the specific risk levels of existing facilities. And when known, budget constraints usually dictate that available funds be used for new facilities, and not for retrofitting existing ones. Available capital is often used to upgrade the technology for health care delivery housed inside existing facilities. And, in the case of hospitals, the cost of architectural and engineering design, mechanical and electrical systems, and equipment represent up to 90% of the facility's total value (PAHO, 1993, Vol. I).

*C. Synergistic Effects with Health as an Economic Sector*

Arguments for increased investment in the health sector are increasingly built around arguments as to the cost and benefits of reducing public and private expenditures for curative and chronic health care. Only recently has it been recognized that the loss of facilities to natural events such as minor earthquakes, which curtail delivery of services because of a functional collapse without prompting an international appeal for disaster assistance, is a significant portion of the economic losses slowing development (PAHO, 1993, Vol. I). And in only a few cases, usually based on isolated retrofit projects or post-disaster reconstruction, are benefit-cost studies undertaken to demonstrate the efficiency of building and maintaining a less vulnerable health infrastructure.

### **III. A Comprehensive Action Plan**

*A. The Loan Project Preparation Process*

Implicit in a lending institution's loan preparation process is the assumption that the resulting level of vulnerability to natural hazards is acceptable. This is reflected in (1) the lending institution's and the borrower's mutual agreement to the terms of the loan, and (2) the belief that the site selection, design, construction, maintenance

and repair process will preclude anything other than acceptable levels of risk. In the vast majority of cases, it is the borrower, and the mechanisms it employs during that process, that bears the burden of defining which natural hazards (location, severity and frequency) are to be considered and the corresponding loss reduction measures to be employed.

Lending institutions do not fix acceptable risk levels for natural hazard vulnerability levels, but rather depend on the borrower to carry out best design and construction practices. These practices are defined by locally mandated codes and standards interpreted by national criteria, sometimes using national and international consulting assistance. There are few, if any incentives for the lender to undertake its own vulnerability assessment during the loan preparation process (OAS, 1988).

Natural hazard vulnerability may be treated at the policy level by a lender (see Inter-American Development Bank/GP-92-10 in Appendix A). Direct intervention by the lender in natural hazard vulnerability reduction issues, however, is often dependent on an initiative by an individual in the lending institution with the knowledge and experience to coordinate a review of applicable local standards. In some instances, specific mention of natural hazard vulnerability reduction is triggered by post-disaster reconstruction lending policy and a request by the affected country for reconstruction assistance (see The World Bank/Operational Directive 8.50: Emergency Recovery Assistance in Appendix B).

*B. The Loan Project Preparation Product*

The final product of the loan preparation process for a health facility includes, among other items, the plans and specifications for the facility and the process by which the facility will be developed, along with the loan dispersal requirements. Usually, this part of the loan documentation does not address natural hazard vulnerability issues. There is little reason, therefore, to assume that vulnerability reduction to natural hazards will be manifest in anything other than the use of best practices and procedures. This means it is the burden of the borrower to meet existing national requirements as determined by experience and the state of the art at hand.

*C. Loan Project Preparation Related to Broader Lending Practices*

Loan projects for health sector facilities are developed in the context of the broader objectives of the borrower and the general lending criteria of the lender. The lender may impose credit limitations, thereby forcing the borrower to maximize the amount of infrastructure to be built from the loan proceeds, as well as to promote the greatest use possible of available local expertise and experience.

The lender may meet broader lending criteria by requiring that the borrower secure insurance for the facility. Ability to secure coverage in the private insurance market may reflect acceptable natural hazard vulnerability reduction levels. Such has been the practice of the Caribbean Development Bank. Following recent major hurricanes in the region, however, insurance became unavailable for many borrowers, and mandatory insurance clauses in loan documents were waived. Often times, public buildings may not be insured at all, or insurance may not be available at a cost deemed affordable by the borrower (the central government) or the operator of the facility (the ministry of health). In other instances, insurance requirements may be waived, postponed, or foregone if the borrower demonstrates that a good faith effort was made to obtain coverage.

Lenders now insist on an environmental impact review of loan projects, and natural hazard vulnerability may be generally considered as a part of the mandated environmental impact assessments or statements (see The World Bank/Environmental Assessment Sourcebook in Appendix C and the Caribbean Development Bank/Sector Policy Paper on Environment in Appendix D). Such statements may call for an identification of risk levels, accompanied by the identification of prevalent hazards. These requirements reflect the fact that natural events and the hazards they pose are part and parcel of environmental management, and the resulting risks are among the environmental issues most amenable to assessment and mitigation action (Bender, 1990).

#### IV. Policy and Program Issues

##### A. *The Position of the Health Sector*

Evidence shows that natural hazard vulnerability reduction must be demand oriented. In the presence of the risk neutral stance of the lender, the borrower must be risk adverse (OAS, 1988). The health sector must insist that the process and the product leading to approval of the loan project include an acceptable level of risk.

##### B. *Policy Formulation*

A policy must be in place that describes the acceptable level of risk of the facility for each applicable natural hazard vulnerability issue. This policy must be a visible part of health sector policy, accepted by lending institutions.

##### C. *Project Preparation Intervention Points*

No matter what the loan preparation process used by the lender, there are critical intervention points for including natural hazard vulnerability reduction information and analysis. As appropriate in the project identification, pre-feasibility, feasibility, engineering design and approval phases of a project, the health sector must use appropriate natural hazard assessment information, define acceptable levels of risk and make manifest the corresponding mitigation actions (OAS, 1992).

##### D. *Priority Infrastructure Vulnerability Areas*

Given the preponderance of existing health facilities compared with what is to be built, yet recognizing the need for new facilities, the health sector supported by lenders must determine which facilities, existing or new, are priority in terms of natural hazard vulnerability reduction. For existing facilities, this means preparing detailed vulnerability inventories by facility type, location, service function, and service life related to the type, location, severity and frequency of natural hazard events. For new structures, it means defining and selecting non-structural and structural mitigation strategies which maximize efficiency while meeting minimum risk levels. In each case, a determination of the functional, non-structural and structural alterations needed to meet acceptable risk levels must be made (PAHO, 1993, Vol. I).



## V. What Can Lending Institutions Do?

### *A. Support to the Health Sector*

Actions on the part of the health sector should be built around four areas which merit support from lending institutions.

First, lending institutions should actively support policy development by the health sector which defines the acceptable level of facility vulnerability to natural hazards with qualitative and quantitative measures and time tables for achieving those levels for both existing and new facilities.

Second, in assisting the health sector in developing its planning capability, lending institutions should create and/or identify key decision points in the planning process where natural hazard identification, vulnerability and risk assessments, and mitigation measure selection are to be included. The decisions made at these points should be reviewed in light of the health sector's policy statements.

Third, lending institutions should actively support the preparation and implementation of mitigation projects including retrofitting of existing structures which help the health sector meet policy guidelines on acceptable risk levels.

And, fourth, for unresolved facility vulnerability issues, lending institutions should actively support health sector actions to prepare for emergency situations in which the sector itself is a disaster victim in need of assistance.

### *B. Greater Technical Involvement with the Health Sector*

Greater technical involvement by international lending institutions with the health sector is needed. Three elements for the lending institutions to increase their involvement are as follows (OAS, 1988).

Lenders must change their perception of natural hazard assessment and mitigation. First and foremost, technical staffs of lending institutions must implement existing requirements for natural hazard and vulnerability assessments in response to stated lending institution policy and as part of environmental

assessments. More effort must be made in information system development, increasing the quality of projects identified, and building the appropriate mitigation measures into pre-investment activities. The most cost-effective approaches for lending institutions to construct a new technical context and support for the sector are:

- ▶ Focusing on priority hazards such as earthquakes and hurricanes; and
- ▶ Choosing simple and practical information collection and systems analysis of health infrastructure.

The Pan American Health Organization (PAHO) has prepared an excellent set of guides for the health sector to mitigate disasters in its facilities. These should be used by lending institution and health sector planners alike (PAHO, 1993, Vols. I-IV). The loan project preparation process and products that are most likely to appeal to the lending institutions' own internal need to bridge the gap between stated natural hazard components of policy, environmental assessment, vulnerability reduction, and the project preparation cycle are:

- ▶ Early identification and integration of natural hazard information and mitigation issues;
- ▶ Practical and cost-effective solutions to persistent problems; and
- ▶ Commitment to implementation by the lender and borrower project staff alike.

To achieve these effective approaches and outputs, the following cooperative mechanisms should be pursued.

- ▶ Pooling of technical resources;
- ▶ Exchange of experiences among regional and international organizations; and

- Support for government health sector planning development.

Overcoming the reluctance by lending institution staff to review or incorporate natural hazard vulnerability reduction into lending project preparation must include incentives for analysis. These should include:

1. Provision of reusable information such as guidelines to meet sector policy statements;
2. Integration of natural hazard vulnerability reduction concerns into existing mechanisms such as programming missions, project identification reports, reconnaissance surveys, environmental impact statement preparation, and project appraisals;
3. Promotion of proven mitigation measures in specific types of projects (best practices);
4. Incorporation of the costs and benefits of hazard mitigation into economic appraisals; and
5. Orientation of project staff members to issues related to hazard-prone regions and traditionally vulnerable building types.

Ultimately, the concern of lending institutions to natural hazard vulnerability issues is dependent on the degree to which natural events cause losses for projects in which the lending institution assisted in the identification, preparation, funding and/or implementation. Alternatives for assigning lending institution accountability include:

- Evaluation of losses from natural hazards in the context of the lender's program area and its project design and loan preparation performance;

- ▶ Study, discussion and publication of evaluations in instances where losses have been incurred for projects that failed to consider or evaluate natural hazard mitigation measures; and
- ▶ Promotion of professional standards on the part of the design and construction professionals responsible for preparing and implementing projects that include natural hazard vulnerability management issues.

## VI. Conclusion

The financing of health facilities is a unique opportunity to address sector natural hazard vulnerability reduction issues. This is so because during the preparation of the loan project, the design and construction of the facility can and should be examined in the context of prevalent hazards and the means by which acceptable levels of risk can be reached. Constraints to fully taking advantage of this opportunity are many. Health facilities are proposed and developed as site-specific structures responding to social demands, economic constraints, and changing roles for the public and private sectors, capital markets, and sector-specific lending. Health facilities are rarely developed in a broad urban/physical planning context. They are to an even lesser degree developed in the context of structural security in the face of natural hazards.

Lending institutions are generally risk neutral, but increasingly sensitive to natural hazard vulnerability issues, at least at the policy and operational directive levels, including directives related to environmental assessments. Unfortunately, for facilities, such as those in the health sector, compliance with policy and operational directives depends on individual initiative of lending institution staff with little monitoring. But without a strong policy position on the part of the health sector, accompanied by specific requests for not only lending support but also technical assistance, training and technology transfer, it is doubtful that significant improvements in mitigation will be made. With such health sector actions as incentives, lending facilities will be in a

position to follow through with mandated actions, or to create the environment for such actions where none are called for at present.

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