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PROPOSAL TO INTRODUCE DISASTER RISK MANAGEMENT TOPICS IN MASTER PROGRAMS IN ESAN GRADUATE SCHOOL OF BUSINESS

PROPUESTA PARA INTRODUCIR TEMAS DE GESTIÓN DE RIESGOS DE DESASTRES EN LOS PROGRAMAS DE MAESTRÍA DE ESAN GRADUATE SCHOOL OF BUSINESS

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ABSTRACT

This paper aims to explain and present a proposal to introduce Disaster Risk Management (DRM) topics into ESAN Graduate School of Business Master's programs. Although disasters have cost Peru more than USD 7,600 million in the past 2 decades the business sector, particularly Small and Medium Enterprises, have not developed preventive or continuity plans mainly because they are not familiar with DRM topics. Taking this into consideration, the paper presents a detailed academic/curricular proposal for DRM topics such as business continuity, business ethics, corporate social responsibility, and sustainable management. Additionally, it introduces the idea of promoting Disaster Risk Management (DRM) topics to the Peruvian business community as a strategy to enhance the graduate education.

KEYWORDS

Disaster; Resilience; Risk Management; Business Schools; ESAN; Peru.

RESUMEN

Este artículo tiene por objeto explicar y presentar una propuesta para introducir los temas de Gestión de Riesgos de Desastres (GRD) en los programas de Maestría de ESAN. A pesar de que los costos generados por los desastres naturales en Perú suman más de 7.600 millones de dólares en las últimas dos décadas, el sector empresarial, en particular las pequeñas y medianas empresas, no han desarrollado planes de prevención o de continuidad. Esto se debe principalmente a que no están familiarizados con los temas de Gestión de Riesgos de Desastres. Tomando en consideración este punto, el documento presenta una propuesta académica y curricular detallada para temas puntuales GRD tales como continuidad de negocio, ética en los negocios, responsabilidad social corporativa y gestión sostenible. Adicionalmente, introduce la idea de promover los temas de Gestión del Riesgo de Desastres en la comunidad empresarial peruana como una estrategia para mejorar la educación de posgrado.

PALABRAS CLAVE

Desastre; resiliencia; gestión de riesgos; escuelas de negocios; ESAN; Perú.

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INTRODUCTION

In recent years, Disaster Risk Management has gained more importance due to the increases both in recurrence and magnitude of natural disasters, challenging our ability to anticipate and prevent such events. Governments have taken on a series of commitments making Disaster Risk Management a national priority, where all development actors assume specific functions. These actors include not only civil society but also the private sector, which historically has contributed little effort in this regard. Other consequences which businesses face as the result of disasters include the effects of closure or financial distress, which in turn may impact the community in terms of loss of jobs and unpaid debts, among others.

An important strategy which countries and civil society tend to overlook is the importance of coordinating and collaborating with stakeholders from a wide range of sectors and disciplines. This includes coordination among countries facing common disaster risks³.

The private sector plays an important role in building and providing for strong resilience in the community, taking into account that more than 70% of the economic investments made in developing countries come from the private sector (UNISDR 2013b). This may, however represent a difficult challenge for many emerging economies as small and medium-sized businesses constitute a significant part of their economy, making them more vulnerable to disasters with less resources for resilience. These businesses usually depend on a centralized market that in the case of a disaster will be equally affected. They have less access to financial resources and the possibility of having a Disaster Risk Management plan is limited. As a result, large enterprises that rely on these small and medium-sized enterprises as their suppliers of goods and services will be affected.

Enterprises in general, no matter their size, lack the incentives needed to develop and implement a Disaster Risk Management. This lack of incentive is reinforced by the fact that they do not see the potential cost, losses and consequences that a disaster can cause. To this end Business Schools provide for the possibility to engage their professionals in the shared responsibility of ensuring continuity to the business community in the event of the occurrence of a disaster.

ESAN Graduate School of Business was created more than 50 years ago. It is the first academic Graduate School of Business created in the Spanish speaking world. Founded in 1963, under an agreement between the governments of Peru and the United States of America (through the cooperation agency USAID). Its organization and implementation was entrusted to the Graduate School of Business of Stanford University, California. Since its creation, ESAN has maintained a strong commitment to train managers capable of generating change within their organizations and thus contribute to the development of society. This commitment fulfills the objective of introducing Disaster Risk Management in business.

3 Asian Development Bank. *Operational Plan for Integrated Disaster Risk Management 2014–2020*, April 2014.

ESAN will address four of the seven topics related to Disaster Risk Management: (1) Business Continuity Planning; (2) Business Ethics and Social Responsibility; (3) Strategic Investment and Financial Decisions; (4) Sustainable Management. These themes will primarily be mainstreamed into the MBA Program and the following Masters degree programs: Real Estate Management and Development, Supply Chain Management, Energy Management, Public Management and Project Management.

PERU'S SITUATION

Due to its diverse geographical conditions and climate, Peru is exposed to various types of disasters. Two groups of disasters which represent the great threats considering their extent and cost of damages include, first, exposure to earthquakes, tsunamis and volcanic activity; and second, to climate changes such as the El Niño Phenomenon which causes extreme rainfall, flooding, drought, frost, and hail, among others. Additionally, the country is faced with adverse geological phenomena such as landslides, mudslides, among others, which are very common.

In the past two decades natural disasters have cost Peru more than USD 7,600 million⁴ in damages. This amount only includes earthquakes and disasters caused by the El Niño Phenomenon; however there are unknown costs due to business interruption or closure, that affects the GDP in the region and the country. This analysis has only been done in recent years.

During the first three months of 2016, Peru suffered from the El Niño Phenomenon, with enormous damage caused by flooding and landslides. One of the most serious consequences was a one-week closure of the country's main road (Carretera Central) which connects the jungle and mountains with the coast from east to west. This road is the main transport route for mineral exports, coffee exports and agricultural products coming to the coast, and especially to Lima. The Exporters Association (Adex) reported that a total of 6 million USD⁵ were lost each day that the road was closed. This affected the mining export region which represents 6.4% of mining total exports.

The government took preventive measures when the occurrence of the El Niño Phenomenon was predicted for 2016, using funds from the country's budget to mitigate the damage of all kinds of natural disasters, which represented about 1,000 million USD. However, these actions taken were focused on attending to emergencies rather than preventing them. In fact, Peru has confronted this climatic phenomenon with greater resources from a fund established by the Government to deal with natural disasters. With the first manifestations of this climatic phenomenon began to be felt, the mechanisms of action were immediately activated to minimize the damage generated by heavy rainfall in the northern coast of the country, increasing flows

4 Presidencia del Consejo de Ministros (PCM), et al. *Plan Nacional de Gestión Del Riesgo de Desastres: PLANAGERD 2014-2021*. May 2014.

5 (01 de marzo 2016) "El costo de cerrar la Carretera Central: ¿Cuánto se deja de exportar al día?" *Diario Gestión*. Recuperado de <http://gestion.pe/economia/costo-cerrar-carretera-central-cuanto-se-deja-exportar-al-dia-2155534>

and landslides in the mountains (central area of the country), and drought in the south-central region (Andes).

Government efforts were prearranged for public sector investment by providing for the functioning of social and productive infrastructure. However, the business sector took little or limited preventive and planning actions. This fact became apparent with the closure of the main road (Carretera Central) in March, where many trucks and passenger buses were stuck for days. Alternative routes were used as an immediate solution as many were left unprepared. This opened a discussion between the private and public sectors regarding the limited government investment in these routes.

Even though the private sector in Peru faces the same critical barrier to investment in Disaster Risk Management as other emerging countries, disasters caused by the El Niño Phenomenon are frequent, and have very similar consequences whenever they arise. Providing the private sector with valuable information in terms of possible situations that could arise during the disaster as well as their subsequent consequences is key. It is important to support the private sector's efforts in the response phase by focusing their efforts in minimizing the effects of the disaster after it has taken place; and resuming operations.

In this situation with the El Niño Phenomenon, Peru's private sector has the advantage of having some risk information available, but they still need to work on other barriers such as developing a long-term business perspective, understanding the difference between reaction to an event with Disaster Risk Management Plan, and the lack of access to funds to work and apply these plans.

ESAN's orientation towards business includes Ethics and Social Responsibility in all of the Masters degree programs offered by the School. However, Disaster Risk Management topics have not been developed in detail for these courses.

INTRODUCING DRM IN ESAN

ESAN is the most important Graduate School in Peru providing it with important access and relationships within the business and public sector actors in the country. The school offers programs not only for the business sector but has an important number of programs designed for other public institutions as well. The School aims to train leaders with competitive integrity, with critical and international vision by strengthening their competencies, knowledge and values; in an effort to fulfill the objectives of Disaster Risk Management in business.

Due to the fact that the nature, gaps and needs of the private sector in Peru are different, the efforts of ESAN should be concentrated on four of the seven themes presented within the framework of Disaster Risk Management. These include: Business Continuity Planning; Business Ethics and Social Responsibility; Strategic Investment and Financial Decisions; and Sustainable Management.

ESAN proposes an integral approach to promote Disaster Risk Management Plans that considers three main areas where ESAN has strength: Academic, Investigation and Business.

The academic approach

It aims to give the students a wider knowledge of Disaster Risk Management and includes it as part of their business topics. For that purpose 6 master degrees have been chosen for their nature, range and influence. These are: MBA Program and the following Master programs: Real Estate Management and Development, Supply Chain Management, Energy Management, Public Management and Project Management.

Within the academic approach four strategies are considered:

1. Include topics in the curricula:

The first step is to include Disaster Risk Management topics in the syllabi of courses related to the selected themes. This will introduce students to Disaster Risk Management in a specific course, and provide them with tools for the development of plans to not only prevent but to respond as well. The aim is to make them agents of change on Disaster Risk Management within their enterprises.

The MBA Program, the Master in Project Management and the Master in Supply Chain Management programs were chosen for having a natural link to the process of Disaster Risk Management. The MBA provides a strategic approach to the enterprise-wide level, while the specialized Masters of Project Management and Supply Chain Management programs have specific objectives related to the continuity of the operation and the specific development projects.

In this context, the Supply Chain Management Masters play a key role, since students focus on the processes needed to guarantee both the continuity of the enterprise as well as carrying out the important role of building and providing strong resilience within the community. Processes include managing the relationship with suppliers, logistics input and output, production of goods and services, distribution, foreign trade and customer relations.

Furthermore, the Master of Project Management provides the tools that businesses require to develop their plans at all levels. The projects are developed and implemented according to the sector, type and size of enterprise which is viewed as a strategic part of its management process. Disaster Risk Management Plans are not excluded from Project Management. Business Continuity Planning requires Project Management to be developed before and after the disaster occurs.

In the three Master programs chosen, Disaster Risk Management topics will be considered in traditional courses such as Finance, Marketing, Supply Chain and HR. These courses will also develop management skills by focusing on decision making in competitive contexts with deference to time and financial constraints, competition, and marketing decisions. These courses include:

- **Business Ethics:** all master programs in ESAN include in their curricula an Ethics and Social Responsibility course which aims to study the concepts and frameworks of analysis used to determine an organization's responsibilities to its shareholders. It evaluates business cases that are in the process of implementing Corporate Social Responsibility (CSR) Programs. Business Ethics and Social Re-

sponsibility related to Disaster Risk Management will be included in the course topics in all master degrees, not only just those chosen for this project.

- **Business Plan:** This course provides students with the tools needed to evaluate potential business ideas. Students learn methods for business planning, how to assess the feasibility of promising ideas, and review aspects of the processes required to implement business plans. While most Business Plan courses devote a section or chapter related to contingencies, these typically don't include disasters as part of those required, and if so, only briefly. Students are asked to analyze and consider those risks and disasters that could affect their area of influence taking into account suppliers, clients, supply chains, and employees, among others. This course gives students the support they need to present a Business Plan in a thesis topic.
- **Business Strategic Simulator:** this course helps develop management skills by focusing on decision making in competitive contexts with time and financial constraints. Students learn how their decisions affect the business environment and influence the decisions made by other organizations. The course is taught using a simulator where students can plot several decisions and compete with their peers for the best results. Market, finance, availability of materials and supplies, among others; can be modified by the professor. Disaster effects and plans can be include within these variables.
- **Strategic Management:** this course aims to break parochial paradigms in an effort to redefine strategic options available to students. After completing this course, the participant will be able to conceptualize value on a regional or global dimension. Disaster Risk Management issues will be included to broaden students' way of thinking while allowing them to analyze new strategies in the event of a disaster.
- **Operation and Supply Chain Management:** this course gives the student the fundamentals, theories, and instruments needed for adequate supply chain management. The supply chain specialist must process constant requests from differing areas within an organization while being capable of making financial projections, effectively managing human resources, and generating low-cost efficiencies. In this scenario, students are asked to consider contingencies related to any possible disaster or problem. This section will now include a wider view and consider not only the contingency but a supporting plan to grant continuity of operations.
- **Financial Management:** students receive the tools required to develop and evaluate investment projects and make decisions in order to increase the enterprise's value within the financial market. Topics with a key focus in corporate finance Strategic Investment and Financial Decisions issues related to Disaster Risk Management will be included. Case study evaluations will consider search and creation of investment and trust funds.

Additionally, the ESAN Master program will develop a series of workshops that aim at helping students to develop essential management skills. This workshops can be complemented with Disaster Risk Management issues. Workshop topics will include:

- **Managerial Skills:** the objective is to evaluate and work on student's management skills.
- **Critical Thinking:** helps students rediscover their capacity for critical and questioning thought. They will learn why people resist unlearning old patterns and will learn to review and abandon paradigms, learn from difficulties, tolerate uncertainty, and resist the temptation to over-structure. Disaster Risk Management themes can be incorporated into this workshop, focusing on collaboration with, and working within the community.
- **Business Environment:** analyzes the environment in which companies operate in national and international contexts and within the global economy. It looks at how companies adapt to new global trends to ensure viability. The topics on Business Continuity Planning and Strategic Investment and Financial Decisions will be considered in this workshop.

Additionally, three Specialized Masters were selected due to their importance and strategic position within the economy of the country. ESAN has selected three masters degrees focused on specific topics: Real Estate and Urban Development, Energy and Public Management.

The Master in Management and Real Estate Development focuses on the field of urban and real estate development where the city's economy becomes more important when related to Disaster Risk Management. The goal is for students within their enterprises to participate in city planning with a focus on the continuity of the economy and the restoration of the community. A greater emphasis will be placed on Business Ethics and Social Responsibility, in all phases of planning Disaster Risk Management, taking into consideration the limited existing regulation and the potential for speculation, post disaster. These points are particularly important in Peru due to urban development of large cities, many of which are on the coast and exposed to major disasters such as earthquakes and tsunamis; with 54.6%⁶ of the country's population concentrated on the coast. Making the situation worse, most urban development has remained unplanned, with little involvement of the authorities. There is also a great informality in the construction of houses (called "auto contruccion") as well as land acquisition thru land invasions. This leaves the populations highly vulnerable.

In the Master in Management and Real Estate Development, the theme of Business Ethics and Social Responsibility will be considered in the following course:

- **Business and Social Responsibility Strategies:** a real estate project may have two approaches: a good opportunity for investment or, alternatively, for an en-

6 Presidencia del Consejo de Ministros (PCM), et al. *Plan Nacional de Gestión Del Riesgo de Desastres: PLANAGERD 2014-2021*. May 2014.

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trepreneur with vision, a real estate development with sustainable economic activity over time. This course discusses the comprehensive strategy needed to take the second option and successfully manage the organization. The important challenge of achieving profitability without sacrificing ethical principles and to exercise responsible corporate citizenship is stressed.

The Master in Energy Management was selected due to its focus on one of the most strategic sectors within the country. Energy is one of the main supports for the economy as well as for community continuity. The dynamism of the energy sector is critical to maintaining the growth of the economy within the country. By its strategic nature, the four DRM topics selected are included in the master program: Business Continuity Planning; Business Ethics and Social Responsibility; Strategic Investment and Financial Decisions; and Sustainable Management. Peru's energy sector faces a number of changes in production, transportation, energy use and environmental impact, and faces the challenge of establishing new energy sources; all areas which need consideration of Disaster Risk Management.

Regarding the energy industry in Peru, one of the most important projects for new energy sources in the country, Camisea Gas, experienced a natural disaster in one of its locations. Both its exploration and distribution plants are located in areas of high risk for disaster: Cusco and Pisco, respectively. In 2007, the Fractionation Plant of Pluspetrol Camisea suspended operations due to a 7.9 magnitude earthquake in the city of Pisco. The plant had a preventive stoppage, immediately after the quake started. Despite the magnitude of the event, staff and facilities suffered no damage, and operations resumed four days later. The gas supply had to be treated by other plants within the enterprise.⁷

Disaster Risk Management topics will be considered on the following courses:

- **Energy management companies and corporate governance:** this course provides a review of relevant practices that aim to implement corporate governance activities that allow to transparently show the risk prevention actions undertaken by the enterprise; including damages caused by disasters. It proposes alternatives for the recognition and specific risk management in the energy sector by governing bodies of companies, and shows the benefits of such practices.
- **Financial Evaluation of Projects for the Energy Sector:** this course provides tools for financial capital budgeting within the theory of value creation. It facilitates the acquisition of a solid understanding of the theoretical and practical basics of capital budgeting, risk and decision making under uncertainty. Strategic Investment and Financial Decisions issues related to Disaster Risk Management will be included in the evaluation of projects. Students will propose ways to incorporate the characteristic risks of the sector in the overall financial evaluation.

⁷ Pluspetrol Camisea SA. *Memoria Anual 2007*. Lima. Enero 2017

Meanwhile, the Master in Public Management, by its nature, is oriented to state officials and aligned with the requirements of state reform. Disaster Risk Management topics are being not only as guidelines for implementing the Disaster Risk Management, but also as a requirement of committed staff with a professional profile according to new concepts of managing for results.

2. International Week

Twice a year, ESAN organizes The International Week that consists of five, all-day intense study sessions during which students of the MBA and specialized master's courses participate. The aim is to update their knowledge on the latest management trends from prominent international professors coming from prestigious universities in the United States, Europe, Asia and Latin America. Interaction between Peruvians and foreigners of different backgrounds and cultures enhances everyone.

The International Week is one of the academic events with the greatest capacity to attract a large crowd at a regional level. More than 1,500 Wstudents participate each week, while more than 10% come from abroad. In each edition, this event increases its strength as the only one of its kind in the academic field, attracting a larger number of international participants each year, thereby producing a greater cultural exchange and the expansion of the network of contacts.

The teaching methodology is similar to the one used in regular courses, using case studies, interactive lessons, exercises, small group discussion and teamwork. More than 60 courses, 15 hours of contact (1.5 US credits or 4 ECTS-European Credit Transfer System) in 3 schedules (morning, afternoon and evening) are taught during this week.

Disaster Risk Management courses will be included in the program of The International Week, related to Business Continuity Planning; Business Ethics and Social Responsibility; Strategic Investment and Financial Decisions; and Sustainable Management; giving students the opportunity to know more about this topic based on the experience of international professors. Also, classes will be enriched by the experience of students coming from different regions of Peru and different countries.

3. Include a Disaster Risk Management Workshop in the curricula

A Disaster Risk Management Workshop will be added to the curricula of the 6 chosen Master programs. Each session will address a topic related to Disaster Risk Management, and will be reinforced with case studies of enterprises located in disaster areas. Greater emphasis will be given to the study of those areas most affected by disasters in recent years. The goal is for the student to sense the reality faced by businesses in affected areas, and to become aware of changes implemented after the disaster. This will give them the vision they need to develop a plan to build for and provide a strong resilience within the community.

For a clearer view of the reality faced by the business sector in their region, students will visit enterprises that are in these risk areas. The aim is for them to analyze

the real situation that the enterprise has confronted in the face of disaster, and to witness first hand, the actions taken. Visits will be made to different sized organizations. Taking advantage of the fact that ESAN offers programs in different areas of the country, each faced with its own realities, will expose students with a business reality to which they can relate personally.

4. Promote Thesis topics

ESAN will promote Disaster Risk Management as thesis topics, for Investigation, Business Plan or Case Studies thesis. The aim is to give greater emphasis to the development and implementation of plans, and quantifying current losses in a disaster situation.

In the case of Business Plans, students should engage in issues of Disaster Risk Management from the initial business idea. For Investigation topics, students will be asked to investigate, in depth, the issues of Disaster Risk Management and its application within the country, not only at the government sector but also the private sector. For Case Studies, students will be asked to focus the case on Disaster Risk Management and to present a proposal with a Business Continuity plan.

Each thesis would need to consider four of the seven topics chosen by the school: Business Continuity Planning; Business Ethics and Social Responsibility; Strategic Investment and Financial Decisions; and Sustainable Management.

The investigation approach

One of the main problems faced in the implementation of Disaster Risk Management is the lack of information on the risks and consequences of disasters. Even more difficult is to quantify the resilience of the enterprise and the community. It is difficult for businesses to gain access to economic or financial information, the few numbers available being general and based on posterior consequence as opposed to providing for a clear estimate of what could be lost or the costs associated. For this reason, ESAN considers it important to develop other activities to help gather information. The investigation approach aims to access Disaster Risk Management information at the enterprise level, not only in its application but on the level of subject knowledge geared towards the business sector. This approach includes 2 schemes:

1. Development of study cases.

In addition to having very little information about the economic consequences of natural disasters, the few existing case studies of Peruvian enterprises are not focused on issues of Disaster Risk Management. Enterprise Case Studies will be developed taking advantage of the presence of ESAN in different cities in Peru, each belonging to the most important economic regions within the country. This will also help to recognize the economic reality of the region, differences between each region and the risks each faces. The diversity of situations, enterprises size and regional economies would provide valuable information for the development of specific cases. This will provide a more detailed view of the regional situation.

Two cities being considered which can possibly offer more information taking advantage of the fact that each provides for access to information on the economic effects of a recent disaster are: Arequipa and Ica. Both have suffered major earthquakes in the last 2 decades, in 2001 and 2007 respectively.

In the case of Arequipa, the region is the 2nd most important in the country, its capital is the second largest city in Peru, and has the second largest economy due to mining exploration, fine wool exports and a dairy products industry.

The Ica region as previously mentioned has the most important gas plants as well as the country's most important agroindustry exports area. New economic sectors have developed after the earthquake despite the damages, estimated at USD 600 million. The tourism sector has increased its investment and three, five stars hotels have been built since the earthquake in 2007. One of the most interesting cases is that of the Hotel chain Libertador Peru, which invested 30 million dollars in their hotel in Paracas, 30kms from the epicenter. The chain was in the middle of the acquisition process of this hotel when the earthquake struck. The hotel was completely rebuilt after it was affected by the earthquake and tsunami in August 15, 2007. The hotel was reopened on September 2009⁸.

Another event to consider is the El Niño Phenomenon which affected the north region of the country during the first four months of 2016, namely in the coastal regions of Piura, Lambayeque and La Libertad. The presence of this phenomenon during the first quarter of 2016 opened the doors to access of the latest information. El Niño (first quarter 2016) had moderate consequences compared to El Niño from the years 1982-1983. Trujillo, the capital city of La Libertad its capital, is the third largest city in the country with the second largest coastal population. The region's economy depends on agricultural activity particularly exports. The Piura region has developed a rich agricultural, fishing, mining and oil economy over the last 10 years, and has become a center of development, thanks to strong private investment. It has also developed a strong tourism industry in the coastal area, known for its pleasant tropical climate. In the case of Lambayeque, it is a commercial region given its links from the northern mountains of the country to the coast. Its economy depends on agriculture and minerals exports that come from the adjacent mountain regions.

The region of Cusco cannot be ignored, as it is the most important tourism destination in the country (Macchu Picchu ruins are located in Cusco), and is home to the main gas extraction area, Camisea gas, which represents 30% of the economy of the region⁹. Cusco is in a high risk area, affected mainly by earthquakes, landslides, frost and floods. It is also an area that has an important economic influence in neighboring areas which are regions of extreme poverty which are also exposed to major natural disasters as well.

8 (Miércoles 18 de marzo del 2009) En setiembre reabren el Hotel Libertador de Paracas. Diario Peru.21. Recuperado de <http://peru21.pe/noticia/260950/septiembre-reabren-hotel-libertador-paracas>

9 Instituto Peruano de Economía. Fichas Regionales 2015 Actualizadas. PBI Cusco 2015. 2015

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Cusco depends on the tourism sector. During the period of February to March 2010 it experienced severe flooding due to the heavy rainy season. The flooding cost a total of USD 224.6 million in damages. Figure 1¹⁰ shows a summary of the cost by sectors, even though the tourism sector was one of the less affected, it indirectly relies on other sectors such as transportation.

Table 1. Summary of the economic effects - rainy season in Cusco 2010 - in USD

Sectors	Total	Direct damages	Indirect damages	Percentage
SOCIAL	79,238,323	75,606,501	3,631,821	35.27%
Social	3,631,821		3,631,821	1.62%
Education and culture	8,323,605	8,323,605		3.70%
Health	3,893,216	3,893,216		1.73%
Housing	63,389,681	63,389,681		28.21%
INFRAESTRUCTURE	123,298,620	122,536,835	761,784	54.88%
Water and sewage	1,314,488	552,703	761,784	0.59%
Transport and Communications	119,846,860	119,846,860		53.34%
Electricity	2,137,272	2,137,272		0.95%
ECONOMIC	18,948,333	18,948,333	-	8.43%
Industry, Commerce and Services	549,442	549,442		0.24%
Agricultural and livestock	7,850,672	7,850,672		3.49%
Tourism	10,548,220	10,548,220		4.69%
Emergency attention costs	3,189,964		3,189,964	1.42%
TOTAL IN USD	224,675,239	217,091,670	7,583,569	100.00%

During this two month period, visits to the Machu Picchu ruins where closed, due to the damages to the railway, the ruins, and the partial destruction of the city, Aguascalientes, that supplies the tourism compound. During the previous year (2009) Machu Picchu received 17,496 tourists from the period February-March. In 2010 the ruins where closed, and could recover until 2012¹¹.

10 Instituto Nacional de Defensa Civil (INDECI), Cuaderno Técnico 7. *Evaluación del Impacto Socioeconómico de la Temporada de Lluvias 2010 en la Región Cusco*. 2010.

11 Instituto Nacional de Estadística e Información, Ministerio de Cultura - Oficina General de Estadística, Tecnología de Información y Comunicaciones. *Afluencia Turística Nacional Mensual Al Parque Arqueológico De Machu Picchu, 2004-2012*

2. Annual survey,

An annual national survey will be distributed to students and alumni of the master programs, in order to identify the levels of knowledge and application of Disaster Risk Management Plans in their organizations. The purpose is to assess, each year, the progress in the knowledge and application of Disaster Risk Management in enterprises in Peru.

This survey will be distributed to ESAN graduate students from the masters as well as to the alumni. Taking advantage of the fact that ESAN has one of the strongest and largest networks of alumni in master programs in the country, more than 15,000 graduates will be engaged. Another advantage is the scope of the School regionally, as ESAN offers programs in 13 main cities in Peru.

The results will be published and presented yearly, not only to the academic authorities but the business sector, in order to generate greater interest and awareness on the issues of Disaster Risk Management. ESAN aims to take advantage of the relationships developed with other key actors within civil society such as chambers of commerce, business associations and unions.

Additionally, the results of these surveys should open the door to greater partnerships between the state and the private sector, which could help develop public-private partnerships (PPP) not only in terms of infrastructure projects but other policy areas.

The business approach

In addition to a lack of awareness and a limited availability of information related to Disaster Risk Management, another shortcoming is the lack of incentives available for the private sector to implement a Business Continuity Plans within their enterprises.

Another issue to consider is the possibility of barriers which Business Students may face in their enterprises as they attempt to present or develop Disaster Risk Management Plans. The lack of demand on the topic and of knowledgeable professionals may be reflected in a lack of interest by students enrolled in the courses that include Disaster Risk Management concepts.

Economic incentives made available to enterprises in an effort to engage them as well as to acknowledge the importance of Disaster Risk Management cannot be offered thru the academic sector. However, public recognitions for good practice could be a strategy for introducing DRM topics to enterprises, while helping them to resolve their shortcomings. In the long-run, this recognition would help in promoting Disaster Risk Management in the private sector and within their community.

The Business approach aims to acknowledge and promote Disaster Risk Management best practices in the private sector by primarily focusing on the enterprise's social responsibility to the community, and its sphere of influence (clients and suppliers).

To achieve this objective ESAN proposes the launch a Disaster Risk Management Plan Competition.

The Competition will look to promote the participation of different sized enterprises, giving priority to small and medium enterprises which together represent a

greater participation in the economy (more than 95% of Peru's economy) and are the most affected in the event of a disaster.

Other variables that will be taken in consideration will be to focus on different economic sectors and in different regions of Peru. Enterprises will be asked to present their experience, plan or activity related to Disaster Risk Management.

The cases presented by the competing enterprises must consider at least three of the four stages of Disaster Risk Management. Each enterprise will compete in their category and will be evaluated according to the following criteria:

- Effect within the community: this criteria aims to assess the effect of the plan within the area of influence of the enterprise; from a qualitative point of view. Social Responsibility geared toward the community is a crucial point in this criteria.
- Area of area of influence: this criteria aims to assess the quantified impact of the plan applied in the area of influence of the enterprise. The enterprise will need to present the quantified effects on their city, region and country.
- Community participation: this criteria seeks to understand to what extent enterprises are involving the community in their Disaster Risk Management Plans. Enterprises need to focus not only on their employees but the community around them.

Business associations and government institutions will be invited to promote and participate as partners in this Competition. Taking advantage of ESANs relationships with the Lima Chamber of Commerce, the largest business association in Peru, ESAN will invite the chamber to partner in the competition.

CONCLUSIONS

Disaster Risk Management can be integrated into the curricula as an essential topic within each course. However, if these topics and courses have no connection between each other, students will likely not be sensitive to its need and importance. Promotion should not only focus on the inclusion of a topic in the curricula and apply it as required, but to generate a commitment and a paradigm shift in its approach. Therefore, the ESAN proposals need to consider a transversal approach among masters programs selected: MBA Program and Specialized Master in: Real Estate Management and Development, Supply Chain Management, Energy Management, Public Management and Project Management.

It is necessary to strengthen the topics brought into the curricula by searching and gathering related economic information. The development of regional and specific disaster case studies will help to reinforce the topics to be taught in the new courses and in the curricula in general. ESAN programs in different cities of Peru will provide us with the possibility to gather information, and to study cases and surveys. It will also give the students the opportunity to analyze different situations and different solutions in each case.

Promotion of topics related to Disaster Risk Management in the private sector will strengthen the inclusion of topics in the curricula, helping to generate a greater knowledge and commitment within private organizations. It will be key to engage those professionals charged with the responsibility of ensuring both the continuity of their businesses as well as the resiliency of the community they serve, in the event of the occurrence of a disaster. Given that economic incentives cannot be granted by the academic sector; the ESAN proposal of public recognition will be crucial to support promotion strategies for organization commitment.

Any actions aimed at the implementation of Strategies of Disaster Risk Management need to consider the engagement of stakeholders and coordination of partnerships within other organizations, universities, and private sector associations such as chamber of commerce. ESAN has a great advantage due to its connections with the private sector and government, and with the multiple Universities and Business Schools that are already part of its worldwide network.

The next steps in Disaster Risk Management will focus on gathering statistical and economic (costs, etc.) information on natural disasters from the private sector, focusing on small and medium sized enterprises, as well as developing access and tools that can assist in the analysis of this information.

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