

Disaster Risk Management Education in the Philippines



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DMAPS D^MAPS



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1. DMAPS Course

2. DRRM Framework



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Dr. Benito M. Pacheco, Institute of Civil Engineering

Dr. Mark Albert H. Zarco, Institute of Civil Engineering

Dean Leonardo C. Rosete, College of Fine Arts

Dr. Flaudette May C. Datuin, Department of Art Studies

Prof. Elenita N. Que, Division of Education Technology

Dr. Aurora Odette Corpuz-Mendoza, Department of Psychology

and many more!

CE 10 DMAPS

Goals: At the end of the course, the student should be able to:

1. Explain the role of natural **disaster risk management** in nation building, responsible citizenship and earth stewardship.
2. Recognize the **multiple disciplines and sectors** involved in disaster risk management.
3. Communicate simple indicators and measures of commonly encountered natural or environmental **hazards**, especially in the Philippines.
4. Identify **exposure** or the various elements exposed to each hazard, and some simple measures of their **vulnerability**, or their resilience.
5. Integrate disaster risk management concepts to synthesize general alternative risk management **strategies**.
6. Display leadership, group organization and interpersonal **skills for working together** in group discussions, research, and presentations or productions*.

** In every student group of 5, ideally all members have different majors, colleges/units, years, talents, etc.*

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Cluster A: Arts and Letters Cluster

College of Arts and Letters

College of Fine Arts

College of Human Kinetics

College of Mass Communication

College of Music

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Cluster B: Management and Economics Cluster

Asian Institute of Tourism

College of Business Administration

National College of Public Administration and Governance

School of Economics

School of Labor and Industrial Relations

School of Urban and Regional Planning

Technology Management Center

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Cluster C: Science and Technology Cluster

College of Architecture

College of Engineering

College of Home Economics

College of Science

Institute of Library and Information Science

School of Statistics

Archaeological Studies Program

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Cluster D: Social Sciences and Law Cluster
 Asian Center
 College of Education
 College of Law
 College of Social Sciences and Philosophy
 College of Social Work and Community Development

** In every group of 5, ideally for this course, all members have different majors, colleges/ units, years, talents, etc. because DISASTER RISK MANAGEMENT is multi-disciplinary, multi-sectoral, multi-dimensional...*

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At UP, disaster risk management now a subject

By Julie M. Aurelio | [Philippine Daily Inquirer](#) 5:39 am | Monday, April 7th, 2014



MANILA, Philippines—In a large classroom, a professor discusses how to interpret a hazard map of the Philippines as students pore over its peculiar markings.

What appears to be an ordinary seminar on disaster risk management is now a three-unit subject at the University of the Philippines.

Called "Civil Engineering 10: Disaster Mitigation, Adaptation and Preparedness Strategies," the subject is offered as an introductory general education course for undergraduate students.

Dr. Benito Pacheco, one of the professors teaching the course, said CE 10 has been offered for two semesters now—since June 2013.

Since last year, two large classes composed of 240 students—or 120 students per semester—have taken up the interdisciplinary approach to teaching disaster risk management concepts.

"There was a perceived need for a general education course on disaster risk management, given the push since [the implementation of] Republic Act No. 10121, or the Disaster Risk Reduction and Management Act, to mainstream DRRM or DRM," Pacheco said in an e-mail.

First in the country

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UP's disaster preparedness class becoming more popular

BY RAISA SERAFICA

POSTED ON 03/18/2014 4:25 PM | UPDATED 07/07/2014 2:25 PM



"Superhero" team (among 26 teams) includes undergraduate majors in:

Civil Engineering;
Film;
Library and Information Science; and
Political Science.

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"Mind Shakers (Tremble)" team (among 26 teams) includes undergraduate majors in:

Biology;
Business Economics;
Civil Engineering;
Mechanical Engineering; and
Psychology.

Mind Shakers
Presents

TREMBLE

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"Alerta" team (among 26 teams) includes undergraduate majors in:

Architecture;
Civil Engineering;
Chemical Engineering;
Philosophy; and
Psychology.

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Group Presentations, Reflection Papers, Proctored Exams, Online Quizzes, ...

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Situationer and Introduction to the course
Ecological Frameworks
Media and forms of communication
Social-Psychological Construct of Disasters
Disaster risk communication
Disaster Risk Management Frameworks; Laws and Organizations
Sharing of individual experiences and Synthesis
Volcanic Hazards*
Earthquake and Related Hazards
Hydrometereological Hazards
Climate Change*
Fire Hazards
Student Production
Midterm Exam

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Hazards Maps as tools for mitigation and adaptation; Site selection; Region-specific examples

Design and Construction addressing exposure and vulnerability

Retrofitting and Repair of existing vulnerable infrastructure; Non-expert assessment of structures

Marine biodiversity**

Food security**

Business continuity**

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Public Information for disaster risk management

Preparedness: community-based disaster risk management strategies (continuation of DRM Frameworks)

Psycho-social intervention: coping with trauma of disasters (confirm if 2 meetings)

Indigenous knowledge**

Social conflict management**

Emergency health services**

Final Student Production

Final Exam

Synthesis

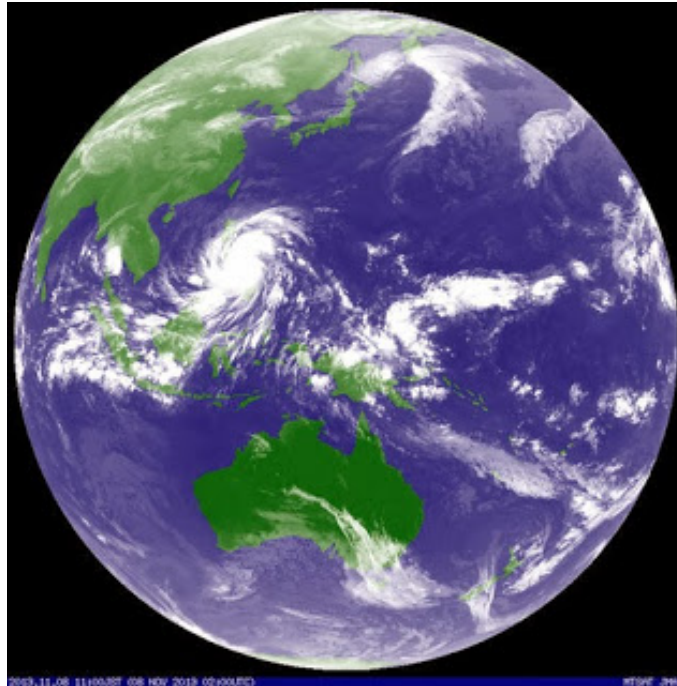
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Benito M. Pacheco, University of the Philippines Diliman, 2013

Hazard, Exposure, Vulnerability and Capacity Risk Factors

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JMA colorized satellite image



Haiyan or Yolanda

Earthquakes Lives
 Floods Storms Landslides
 Properties Volcanoes
 Ways of life

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Sample Quiz:

Which 2 documents define
"DRRM" and "DRM"
almost identically?

- (a) *Philippine Constitution & UN Charter*
- (b) *Philippine Constitution & UN ISDR Terminology on DRR*
- (c) *Philippine DRRM Act of 2010 & UN ISDR Terminology on DRR of 2009*
- (d) *Philippine DRRM Act of 2010 & UN Charter*

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Sample Quiz:

Which is not a full set by the intent of R.A. 10121?

- (a) mitigation, preparedness, response, rehabilitation
- (b) forecast, preparedness, response, recovery **X**
- (c) reduction, readiness, response, recovery
- (d) mitigation and adaptation, preparedness, response, rehabilitation

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UNISDR Terminology on DRR (2009)

B.M. Pacheco, Fellow, Phil. Inst. of Civil Engineers, 2013



<http://www.unisdr.org/we/inform/terminology> "The UNISDR was requested by the HFA."

Terminology by RA 10121 (2010)



25% of lines of text of RA 10121 are definition of terms.

DRRM* and DRM**

Disaster Risk [Reduction and*] Management**

The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse **impacts** of hazards and the **possibility** of disaster

* By R.A. 10121 (ca. 2010)

** By UNISDR (ca. 2009)

Disaster Risk Management

Mitigation and Adaptation (with Prevention, before, during)

Preparedness (just before)

Response (during and just after)

Recovery and Rehabilitation (after)

$$\text{DRRM}^* = \text{DRR} + \text{CCA} + \dots \approx \text{DRM}^{**}$$

Disaster Risk Reduction

Climate Change Adaptation

...

* By R.A. 10121 (ca. 2010)

** By UNISDR (ca. 2009)

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Then and Now

- 1990-1999
 - International Decade for Natural Disaster Reduction
- 2000
 - International Strategy for Disaster Reduction
- 2005-2015
 - Hyogo Framework of Action
- 2009
 - UNISDR Terminology on Disaster Risk Reduction

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Then and Now

- Natural Disaster
- Disaster
- Hazard
- Exposure
- Vulnerability
- Capacity
- Disaster Risk
- Risk

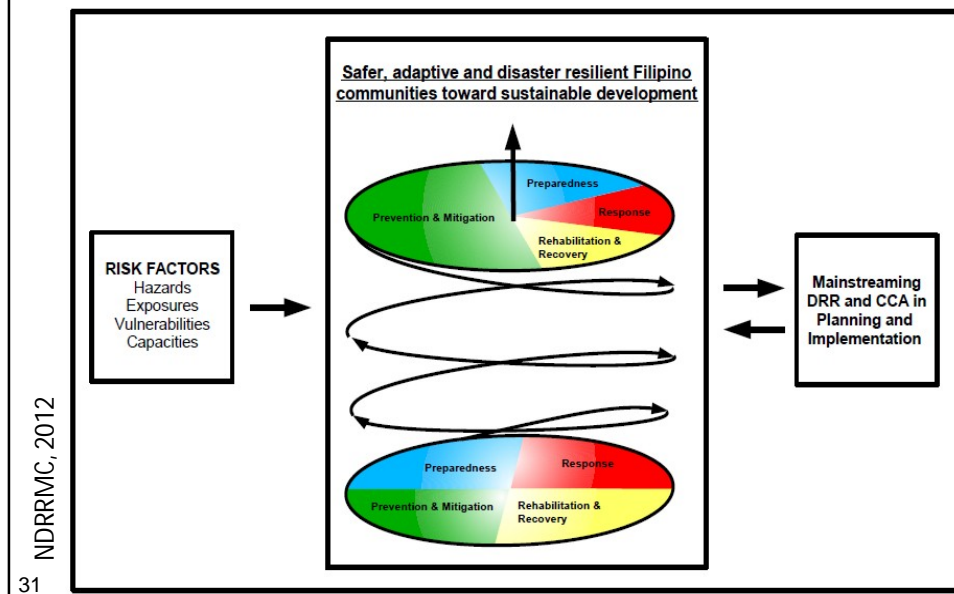
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Then and Now

- Disaster Control
- Disaster Prevention <http://www.bousai.go.jp/>
- Disaster Mitigation
- Disaster Preparedness
- Disaster Response
- Disaster Management
- Emergency Management
- Disaster Risk Reduction
- Disaster Risk Management

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Philippine DRM Framework



Sample Quiz:

4 main themes in DRRM
by R.A. 10121 wording:

- (a) Preparedness; Response; Prevention and Mitigation; & Rehabilitation and Recovery
- (b) Mitigation and Adaptation; Preparedness; Response; & Recovery and Rehabilitation
- (c) Reduction; Readiness; Response; & Recovery
- (d) Hazard Management; Exposure Management; Vulnerability Management; & Capacity Management

Now

- RA 10121 since 2010: NDRRMC
 - Chair: Secretary of DND
 - Vice-Chair for Disaster Preparedness
 - Vice-Chair for Disaster Response
 - Vice-Chair for Disaster Prevention and Mitigation
 - Vice-Chair for Disaster Rehabilitation and Recovery

Sec. of DILG

Sec. of DSWD

Sec. of DOST

Sec. of NEDA

B.M. Pacheco, Fellow, Phil. Inst. of Civil Engineers, 2013



Is it a relay race?

<http://blog.lyris.com/data-driven-digital-marketing-a-relay-team-of-top-notch-marketers-and-technology/>



A symphony performance?

www.philippineparadisepages.com%2fnews_details%26id%3d143/RK=0/RS=T8S7phFOZ2_EUeN0ZXezFKn58w0-

Strategy 1

Benito M. Pacheco, University of the Philippines Diliman, 2013

70% Proactive:

Mitigation, Adaptation and Preparedness

Why we are focusing on mitigation, adaptation and preparedness.

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Benito M. Pacheco, University of the Philippines Diliman, 2013

Disaster Mitigation, Adaptation and Preparedness Strategies

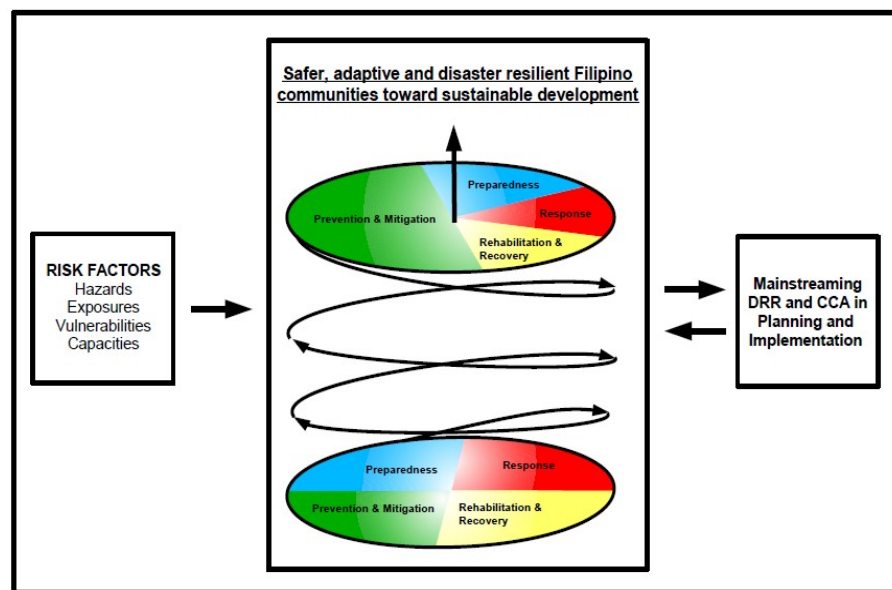
"... is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources." (R.A. 10121)

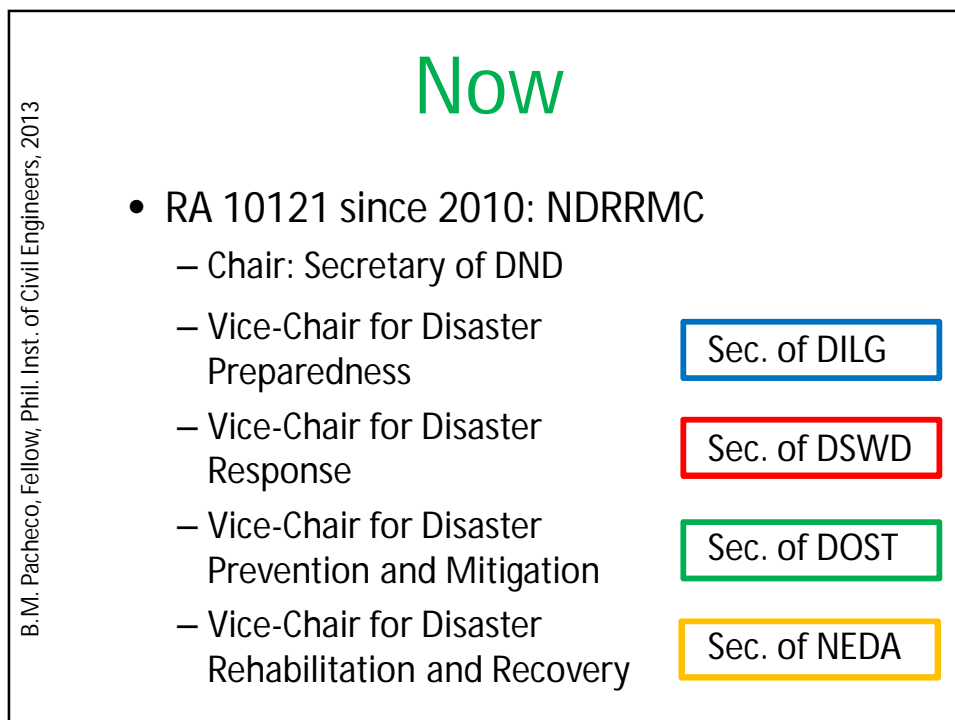
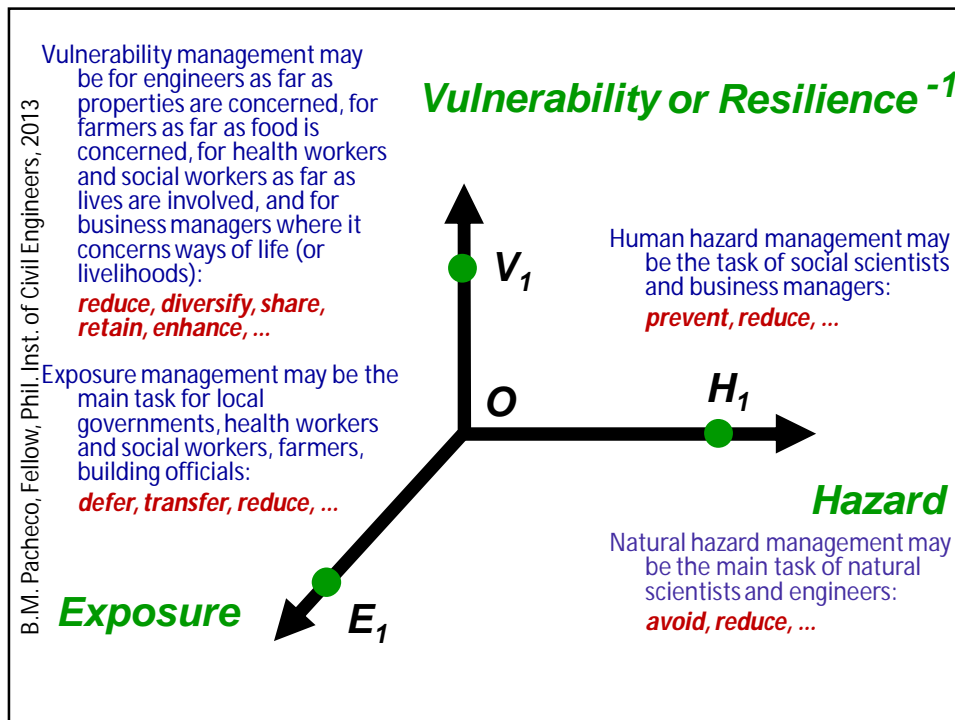
And a little about response, recovery and rehabilitation (needs a 2nd course)

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Strategy 2

Philippine DRM Framework





Strategy 3

Now

- RA 10121 since 2010: NDRRMC
 - Chair: Secretary of DND
 - Vice-Chair for Disaster Preparedness
 - Vice-Chair for Disaster Response
 - Vice-Chair for Disaster Prevention and Mitigation
 - Vice-Chair for Disaster Rehabilitation and Recovery

Sec. of DILG

Sec. of DSWD

Sec. of DOST

Sec. of NEDA

Near Future?

- RA 10121 since 2010: NDRRMC
 - Chair: Secretary of DND
 - Vice-Chair for Disaster Mitigation and Adaptation
 - Vice-Chair for Disaster Preparedness
 - Vice-Chair for Disaster Response
 - Vice-Chair for Disaster Recovery and Rehabilitation

Sec. of DOST

Sec. of DILG

Sec. of DSWD

Sec. of NEDA

B.M. Pacheco, Fellow, Phil. Inst. of Civil Engineers, 2013

Future?

- RA 10121 with new IRR: NDRRMC
 - Chair: Secretary of DND
 - Vice-Chair for Hazard Management
 - Vice-Chair for Exposure Management
 - Vice-Chair for Vulnerability Management
 - Vice-Chair for Capacity Management

Sec. of DOST

Sec. of DILG

Sec. of NEDA

Sec. of DSWD

B.M. Pacheco, Fellow, Phil. Inst. of Civil Engineers, 2013