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Vulnerability and Disaster Risk Reduction

UNU-EHS Ph.D. Block course in cooperation with the University of the Free State Disaster Management Training and Education Centre for Africa (UFS- DiMTEC)

Basic Course Information

Timeframe: 25 January - 3 February 2012

Location: University of the Free State, Bloemfontein , South Africa

Website: <http://www.ufs.ac.za/dimtec>

Website: <http://www.ehs.unu.edu/elearning/>

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Background

The Institute for Environment and Human Security of the United Nations University (UNU-EHS), in Bonn, Germany assesses the vulnerability and coping capacity of communities facing natural and human-induced hazards in a changing environment. It aims to improve the understanding of cause and effect relationships to offer options to help reduce risks and vulnerabilities and increase resilience. The Institute supports policy and decision-makers with authoritative research and information.

UNU-EHS and its work programme reflect the overall mission of UNU *Advancing Knowledge for Human Security and Development*. The Institute leads UNU’s research and capacity building activities in the broad interdisciplinary field of *risk and vulnerability*. It explores the threats that environmental degradation, unsustainable land use practices, and natural and man-made hazards pose to human security. UNU-EHS works to anticipate the impact of ‘creeping’ environmental change - including climate variability, land degradation, population pressure and migration, and changing resource availability and quality - on risk and vulnerability.

Subtle shifting conditions imperil communities gradually, usually in a hidden way. This undetected increase of social vulnerability can manifest itself suddenly and dangerously in the presence of extreme events of natural or human-induced origin. UNU-EHS research work is devoted to developing capacity and giving advice to strategy and decision-makers. An integral part of UNU-EHS is the inclusion of young scientists within its research throughout one of the major educational activity - the UNU-EHS Block Course.

Goal and Objectives of the Block Course

The growing frequency and magnitude of extreme environmental events (such as floods, landslides and drought) have intensified research interest in these events, in particular regarding the level of risk they pose in different locations, the vulnerability of communities and their response capabilities. The concept of human security focuses on threats that endanger the lives and livelihoods of individuals and communities. Safeguarding it requires a new approach, and a better understanding of many interrelated variables – social, political, economic, technological and environmental - factors that determine the impact of extreme events when they occur.

The overall goal of the Block Course is to highlight the complexity and importance of vulnerability and resilience in the field of disaster management, development and risk reduction. The Block Course is based on the UNU-EHS key research questions, and covers the following major themes:

- Environmental, physical, social, and economical dimensions of vulnerability.
- Processes and conditions that have an impact on vulnerability and determine vulnerability patterns.
- Methods and models to assess vulnerability.
- Interlinkages between environmental migration and vulnerability.
- Measures and activities which enable shifting from vulnerability to resilience policy recommendations.

After completing the Block Course, students will:

- Be aware of the multi-dimensional nature of vulnerability and the necessity for an interdisciplinary approach.
- Be able to critically evaluate and understand different concepts and frameworks of vulnerability.
- Be able to analyse the role of vulnerability and resilience in disaster risk management and development planning.
- Be in the position to understand and implement models and methods for vulnerability assessment.
- Be in the position to implement measures and activities which enable shifting from vulnerability to resilience.

Block Course Outline

The Block Course, entitled “Vulnerability and Disaster Risk Reduction”, is offered by the UNU-EHS and the University of the Free State (UFS) Disaster Management and Training Education Centre (DiMTEC), and takes place on annual basis.

The Block Course time span is 10 days. It has been structured in teaching modules as follows:

Theme	Topics	Assignments
Terminology	Disaster risk management (DRM) terminology	•Comparative analysis of a risk management terminology
Hazards	•Hazard types •Weather related hazards •Historical spatial and temporal hazard distribution •Assessing hazards •Measuring hazards’ impact	•Mapping historical hazards •Hazard frequency-magnitude-damage analysis
Dimensions	•Definition of a system •Infrastructure •Economical •Environmental •Social •Coupling two or more dimensions	•Analysis of the basic elements of particular system •Practical exercise on describing applied systems
Vulnerability	•Basic principles •Theoretical basis •Conceptual frameworks •Vulnerability and sustainable development	•Discussion of the applicability different frameworks •Improved understanding of the different conceptual and theoretical approaches
	•Assessing vulnerability •Indicator and indices •Qualitative versus quantitative assessment •Input data collection methods	•Perform data collection •Examples of qualitative analysis •Examples of quantitative analysis •Exercises using indicators and indices
	•Vulnerability models •Progression of vulnerability •Root causes •Dynamic pressure •Unsafe conditions	•Assessing vulnerability using selected models •Analysing root causes for different vulnerability patterns - context specific
Vulnerability □-- -----> □Resilience	•On theory of resilience •Progression of resilience •Achieving safe conditions •Reducing hazard impact •Development of safety culture	•Assessing progression of resilience •Achieving safe conditions for selected hazard •Steps towards a culture of resilience •Linking vulnerability assessment and adaptation strategies

Block Course Materials

Course materials will be provided by UNU-EHS and UFS- DiMTEC in class. A Block Course has been set up at:

<http://www.ehs.unu.edu/elearning>, where participants can also find reading material, to be read before the Block Course starts, participate in preparation forums and access all related materials.

Block Course Organisation

The Block Course consists of lectures by experts, students’ practical work, discussions, and group work and students final presentations. Upon completion of the course, participants will be given a certificate of completion by the UNU-EHS and the University of the Free State (UFS-DiMTEC). Course participants will be invited to become members of the UNU-EHS Alumni Network.

Prerequisites

All accepted participants are assumed to satisfy the following prerequisites:

- Postgraduate candidate in the early stages of PhD research or about to start their Ph.D. studies.
- Advanced Master's degree students.
- Masters degree in geography, economics, social science, engineering, anthropology, environmental and/or natural science or related disciplines.
- Basic experience in vulnerability, risk and/or disaster management.
- Fluency in English.
- Basic computer user knowledge.

Admission

The Block Course is announced on the UNU-EHS web site (<http://www.ehs.unu.edu>) and on the website of the University of the Free State. Interested candidates are welcome to apply. A formal letter from their respective faculties / schools will be required, including basic information about candidate’s background and their field of research. The UNU-EHS and UFS- DiMTEC will select those students who best satisfy Block Course prerequisites.

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Financial information

Inquiries regarding the course fees should be addressed to Ms Alice Ncube at the University of Free State (ncubea@ufs.ac.za or 0027 51 401 2721/9701). The United Nations University Institute for Environment and Human Security (UNU-EHS) or University of the Free State, Disaster Management and Training Education Centre (UFS- DiMTEC) will not cover any travel, local transport or accommodation costs of students accepted. Accepted participants will have to organize their own accommodation while attending the Block Course.