DISASTERS, DECISIONS, DEVELOPMENT: A CASE STUDY FOR INTERNATIONAL PARTNERSHIPS AND PEDAGOGY FOR TSUNAMI HAZARD RISK MITIGATION

1. Zahraa Saiyed, Scyma Consulting, Stanford University
2. Jenny Suckale, Assistant Professor of Geophysics, Stanford University

INTRODUCTION

The Department of Geophysics at Stanford University has developed a unique multi-disciplinary course on tsunami hazard risk reduction in Indonesia in collaboration with partners in the Government of Indonesia and Syiah Kuala University in Banda Aceh, taught in Winter of 2016. The goal of this course, called Disasters, Decisions and Development (D3), is to propose tsunami hazard risk mitigation projects as an integrative and feedback-driven process with overseas partners. This abstract describes the methods by which a community engaged pedagogy can inform global issues such as tsunami hazard risk reduction with assistance and mutual interest from international partnerships. The lessons learned from development and implementation of this course will be documented as an archetype for future such courses at Stanford University and at other academic institutions. The research and documentation for this abstract will be completed in mid-March.

BACKGROUND

The Ministry of Marine Affairs and Fisheries in Indonesia along with the Tsunami Disaster and Mitigation Research Center at the Syiah Kuala University in Banda Aceh showed keen interest in collaborating with Stanford University during the design and implementation of D3. Following the 2004 Indian Ocean Tsunami, where Banda Aceh was most severely struck with immense losses from the earthquake induced tsunami, research and preparedness within state have grown significantly to lessen the catastrophic damages of a future such disaster. The course focuses specifically on tsunami hazard risk reduction in Banda Aceh to parallel local efforts, as it also attempts to bridge the gap between science and on-the-ground realities and action. Due to the diverse nature of the students in the class, and the overseas collaboration with language as a potential barrier, this class requires strategic structuring of coursework to be appropriate for all students and ultimately provide valuable proposals to the Indonesian partners.

OBJECTIVES

The pedagogical objectives for this course entail accessibility and inclusivity for all students, of any level and discipline in the Stanford community. The course inquires of each student if they believed they could (as individuals and as a collective) assist toward disaster risk reduction. The emphasis on immediate involvement underscores the course evolution, as many individuals consider themselves as unqualified or unable to be a contributor to disaster risk reduction, a notion which this class deliberately and frequently probes. In addition, the curriculum of this course includes topical descriptions of science, engineering and decision making concepts for on-the-ground research and advocacy in disaster risk reduction. Students are given overviews of various relevant themes, encouraging the enrollment in future quantitative and applied-math courses that explore further into such topics.

METHODOLOGY

D3 began the course with prompts on self-reflection and emotional intelligence appraisals, generally atypical for science and engineering classes. The students are thereby encouraged to understand the
complexities and nuances of participating within a foreign context, such as Banda Aceh. Additionally, students have been placed in multi-disciplinary and multi-level groups, from undergraduate to PhD level during the first assignment. The rational for this is to allow students to become familiarized and engaged with one another, especially from vastly different backgrounds, and to sponsor synergy in final projects. For graduate students, a mentorship component is required in that students must be able to assist peers on final projects and through the duration of its process. The goal is to allow doctoral level students to practice leadership, especially significant for those interested in continuing careers in academia. Finally, students are periodically offered feedback opportunities, or mud cards, to describe concepts that may be unclear thus far in the class and elements the students would like to see improved moving forward.

OUTCOMES

The research and documentation for this abstract will be completed in mid-March. This section will include the realization (if at all) of a truly collaborative course among Stanford students, general feedback over the duration of the course from students, and success (or failure) of dialogue with international partners given language barrier.

CONCLUSIONS

The research and documentation for this abstract will be completed in mid-March. This section will contain outcomes of projects, observations of student involvement and engagement, and international partner reception and utility of proposals.

DISCUSSION

The research and documentation for this abstract will be completed in mid-March. This section will include lessons learned, future iterations and improvements, and effectiveness of the course. In addition, this section will describe the contribution of such a class to a larger disaster discourse, especially in SE Asia, and the pedagogical influence and contribution for future courses and collaborations to emulate.