

MAPPING SOCIAL VULNERABILITY IN THE AFTERMATH OF THE GORKHA EARTHQUAKE: A FULBRIGHT SPECIALIST JOURNEY IN NEPAL

KAREN S. BARTON

ABSTRACT

As a Fulbright Specialist to Nepal, my goal was to help the Institute for Crisis Management Studies in Kathmandu survey and map communities affected by the 2015 Gorkha earthquake, the largest natural disaster to impact the nation in recorded history. This paper shows how one fellowship expanded its scope to include a team of first-generation college students from Colorado, providing student participants with opportunities to increase field skills and network with overseas partners.

Keywords: Nepal • natural disaster • community resilience • GIS • experiential learning



INTRODUCTION

In 2018, I had the privilege of receiving a Nepal Fulbright Specialist award to work with the Institute for Crisis Management Studies (ICMS) in Kathmandu. In collaboration with Dr. Ram Thapaliya at ICMS, our field plan was to research and map the Kavre-Palanchok region of the Kathmandu Valley in the wake of the Gorkha earthquake, one of the largest natural disasters in Nepal's recorded history. The April 2015 quake, with a magnitude of 7.8, killed 8,964 people and injured 21,952 more, toppling multi-story buildings in the capital, the countryside, and creating massive landslides throughout the celebrated Himalaya Mountains. Our Fulbright Comprehensive Municipalities Mapping project, with support from Nepal's Central Government and the Swiss Red Cross, would give us forty days to conduct mountain fieldwork, map the affected valley, and submit an external funding proposal to help vulnerable communities in advance of emerging natural disasters. At the time, I did not know the extent to which my Fulbright Specialist award to Nepal would create a long-lasting partnership between myself, colleagues in Kathmandu, and undergraduate students in Colorado. What essentially began as a stand-alone fellowship to Nepal would evolve into a collaborative, transnational initiative to embed students in engaged field work on important disaster risk reduction (DDR) alongside colleagues in Kathmandu. By leaning on existing resources, we were able to leverage the Fulbright Specialist grant to provide exciting study abroad opportunities for a group of predominantly

first-generation students in Colorado and Kathmandu. Approximately 42% of students at our institution identify as the first person in their family to attend college and many tend to be in lower income brackets and thus not on equal footing with their peers.

THE FOUNDATIONS FOR THE US-NEPAL PARTNERSHIP

Building upon a strong track record of international collaboration, in 2017, Nepalese scholar and local leader Dr. Ram Thapaliya lobbied the Fulbright Commission to bring me as a Fulbright Specialist to Kathmandu to help ICMS on a municipalities mapping project in earthquake prone areas of Nepal. Dr. Thapaliya was himself a Fulbright Alumni, and could therefore personally attest to the role this program played in helping him succeed, not only as an educator, but as a future Nepalese diplomat. Dr. Thapaliya's proposal was awarded, and on December 15th after flying back home from a field course with students to the Rupununi region of Guyana, I received a phone call from World Learning, the administering agency for the Fulbright Specialist program, who shared news with me about the Fulbright opportunity in Kathmandu. Having been a past recipient of Fulbright Hays and Fulbright Scholar grants, I could not believe my good fortune, and my first thought was on how to include students in the upcoming journey to Asia. I had seen the way in which past field experiences--whether in the US or abroad--had changed my students' lives through firsthand, visceral experiences, and I was eager to connect undergraduates to our partners in Nepal.

Given the ambitious nature of the GIS mapping project in Kavre-Palanchok, Dr. Thapaliya and I decided to expand its scope to include other participants from the US who could add expertise to the mapping expedition. My students at University of Northern Colorado (UNC) have strong Geographic Information System (GIS) and field research skills, given the nature of our experiential undergraduate program, so they were a natural fit for the job. By February 2018, our small team effort had evolved into a transnational expedition, and we designed a three-credit course for the ten UNC students who would assist with the project in the Kathmandu Valley. Because 42% of my students identify as first-generation scholars with a limited resource base, I decided to write a proposal to underwrite the costs of our expedition, which would in turn support the pilot project in Kavre-Palanchok and partial travel costs for students. To my surprise, the Hewitt Institute of Colorado generously awarded nearly \$20,000 in support for the expedition. By June 2018, Dr. Thapaliya, his son Subash Thapaliya and I had organized a full-fledged expedition that harnessed the skills and expertise of not one, but two postsecondary institutions. Grant support also enabled us to bring UNC paleoclimatologist Dr. Jim Doerner along on the expedition to assist with student logistics and deliver a lecture on natural hazards at ICMS.

We were fortunate in that wherever we went, doors seemed to open to help advance our efforts in the field. Using our local connections with Fulbright, we were able to create synergies that benefited not only American scholars but also professionals and village leaders in the Kavre-Palanchok valley.

Fulbright alumni know well that study abroad provides enormous tangible and intangible benefits for awardees and host nations when designed in a manner that creates a mutual understanding for both parties. International fieldwork cannot be one sided. When Senator Fulbright launched his flagship Fulbright program after World War II in 1946, he did so with a clear goal in mind; that is, to create a *mutual understanding* between people of the United States and other states around the globe. In 1976, reflecting on the program, Fulbright wrote: “International educational exchange is the most significant current project designed to continue the process of humanizing mankind to the point, we would hope, that men can learn to live in peace--eventually even to cooperate in constructive activities rather than compete in a mindless contest of mutual destruction. We must try to expand the boundaries of human wisdom, empathy and perception, and there is no way of doing that except through education.” Today, the Fulbright program is a bipartisan success story. It awards 8,000 grants annually, which includes 1,900 US students, 4,000 foreign students, 1,200 US scholars, and 900 visiting scholars, not to mention the several hundred teachers and professionals who participate in the diverse array of programs. I represent just one Fulbright awardee among thousands of scholars in the world, but it was important for me to pay my grant forward by allowing students to experience firsthand the value of the flagship program. I also believed that student participation in the Nepal expedition would encourage some participants to apply for their own international fellowships upon graduation, or to seek out international experiences that aligned with their career goals.

Fulbright alumni know well that study abroad provides enormous tangible and intangible benefits for awardees and host nations when designed in a manner that creates a mutual understanding for both parties.

FIELD EXPERIENCES IN NEPAL

Students at UNC underwent rigorous academic preparation in advance of their travel to Kathmandu, many of them never having traveled outside the US before. We managed to assemble a diverse team of participants including those majoring in Geography, GIS, Anthropology, History, Education, Sustainability Studies, Sports and Exercise Science, and Geology. The team - composed of both undergraduates and graduates - also reflected a broad age range and wide economic demographic cohort. Despite calling Colorado home, several students had no experience working in mountain environments, and so fieldwork proved challenging but rewarding for these emerging scholars. Helping to facilitate the process was the ICMS group itself--a team of indispensable Nepalese and international graduate students and Research

Fellows including Subash Thapaliya, Shyam Thapa, Rony McGown, Lucy Donnelly, Bidhya Lohani, Satish Baidya, Ambu Khanal, and Major Bhadra Thakuri. On the ground in the Kavre-Palanchok region our field group was aided by the translation expertise of local citizens such as Badri Paudyl and Narayan Blon. It is not possible to include all of the human effort that went into creating a successful project, so this list remains incomplete, but it was clear that our small project had broadened by drawing from our existing social capital in the region.

Based at the Sunkoshi Retreat, ICMS Chairman and Professor Ram Thapaliya and his staff provided exemplary accommodations for our team, which proved a good respite after intensive days navigating the field. Students were tasked with conducting interviews on security and vulnerability in the Kavre area using survey questions designed in part by Nepal's Minister of Agriculture. Together our team mapped 130 household coordinates using GPS and Collector, snapping photographs for cartographic data, and traversing the challenging topography of the Kavre-Palanchok region. Interview and GIS data were recorded by our transnational team and the GIS was created by UNC students and GIS analysts. We produced maps that indicated the highest sites of vulnerability during natural disasters, which would be folded into long term planning documents. During our time in the country our transnational team put in long, difficult days in an altogether new environment, yet most thrived in the face of uncertainty and enjoyed challenges that come with navigating new terrain.

In addition to these tasks for ICMS, UNC students were responsible for creating final projects to be presented back in Colorado, part of the agreement for being awarded funds from the Hewitt grant. While ICMS graduate students needed to meet separate requirements for their institution, UNC students produced a diverse array of interdisciplinary projects for their final grade that were rooted in their academic disciplines: (1) Several participants completed projects on Nepal's UNESCO heritage sites, many of which we visited during our time in Nepal; (2) Geology student participants focused their work on landslide activity near the Tibetan border; (3) GIS majors developed interactive ESRI (Environmental Systems Research Institute Story Maps) and lesson plans on mapping social vulnerability; and (4) One graduate student created a podcast for UNC's podcast program "Bear in Mind, which includes "voices from the field" and student reactions to the expedition. This same student also created a video production highlighting his drone footage from our research in the Kathmandu Valley. His media project showed the extent to which our expedition impacted the lives of students as well as their future plans after completing college at UNC. Because of their embedded experiences in the country, two student participants applied for graduate school at the Institute for Crisis Management in order to study Disaster Risk Reduction alongside Nepalese students and research fellows.

UNC professor Jim Doerner and I also gave several lectures at ICMS, providing a great opportunity to work with Nepalese graduate students and exchange knowledge of natural hazards and risk reduction in the US and Nepal. Given the similar mountain environments of Nepal and Colorado's Front Range, there are some natural synergies between both our regions and postsecondary institutions. We were able to draw comparisons between both universities and also discuss the potential for longer term collaborations. Several project extensions were generated during our stay including: (1) a direct exchange between our universities, which would allow UNC and ICMS students to engage in international study and research; (2) a UNC workshop on natural hazards and disaster response run by Subash Thapaliya; and (3) the development of a USID grant funded project designed to map vulnerability in Nepal upon completion of the Swiss Red Cross proposal. In the wake of my Fulbright experience, Dr. Thapaliya appointed me the Visiting Researcher at ICMS, allowing us to continue our ongoing partnership between Nepal and Colorado, US.

CONCLUSION

In my experience, Fulbright fellowships provide immeasurable consequences, both intended and unintended. They allow faculty and students to embed themselves in the field in pursuit of scholarly work that makes a difference in the lives of local communities. In our case, the research project in the Kathmandu Valley was driven by Nepalese people in the wake of one of the most profound natural hazards in the country's history. We did not drive the agenda, but rather played one small part in a larger constellation of national projects designed to help Nepal recover from the environmental and social impacts of disasters. While our project assisted the people of Nepal in their disaster recovery, it also transformed the lives of the student participants themselves. Lifelong partnerships and friendships were formed and solidified, and some of our Kathmandu partners have since applied to graduate programs in the United States. The field course and Fulbright project to Kavre-Palanchok was not just a course, but a project that allowed us to kickstart a long-term friendship with our colleagues in Kathmandu. I can say that the team at ICMS - led by Dr. Thapaliya, Subash Thapaliya, Lt. Gen (Retd.) Balananda Sharma - are no longer just colleagues, but they are part of our extended family. The level of resilience and optimism among Nepalese people, even in the face of adverse circumstances such as Gorkha, will continue to motivate and inspire us. I am grateful for the personal and professional relationships we

have created and look forward to new collaborations as the next steps unfold. For example, one key outcome of the Nepal project was the formation of regional networks, such as a Fulbright Specialist fellowship to Bangladesh which will focus on transboundary plastics pollution in the Bay of Bengal.

In the four years since I completed the Fulbright Specialist grant to Nepal, I've watched my own students from this expedition flourish as they navigate their careers in the fields of geography, sustainability, and GIS. Some UNC alumni were able to use their experience from the mapping expedition to secure full time careers as GIS analysts for municipal or county agencies, while others have taken posts with Homeland Security or the United States Peace Corps. Many are now eligible to join the ranks of the US Exchange Alumni program, which provides an active professional network for those who have participated and completed a US government funded or sponsored exchange program. It is energizing to watch these former students thrive--whether in the US or Nepal--as they navigate their own careers in global environmental research and education. I maintain contact with all ten of these students and enjoy receiving texts, emails, and photos, especially those that reference our 2018 shared experience in Kathmandu. In 2023, we are hosting a class reunion in Colorado, where we'll eat *momos* from a local food truck and reflect on all that we learned in 2018-2019 while working in Nepal.

NOTES

1. An abbreviated video of the Fulbright field expedition may be found at <https://www.youtube.com/watch?v=TcPW1tCPBIU>
2. Information about the Institute for Crisis Management Studies and its programs may be found <https://www.tuicms.edu.np/>
3. Details for getting on the Fulbright Specialist roster in order to apply for open projects may be found <https://fulbrightspecialist.worldlearning.org/>
4. T. H. Poiani, R. Dos Santos Rocha, L. C. Degrossi and J. Porto De Albuquerque, "Potential of Collaborative Mapping for Disaster Relief: A Case Study of OpenStreetMap in the Nepal Earthquake 2015," *2016 49th Hawaii International Conference on System Sciences (HICSS)*, Koloa, HI, US, 2016, pp. 188-197, doi: 10.1109/HICSS.2016.31.
5. University of Arkansas Special Collections. J. William Fulbright Papers, MS/F956/144



UNC-ICMS Fulbright Specialist Team, December 2018, Photo Credit: Dannon Cox

BIOGRAPHY

Dr. Barton is a Professor of Geography, GIS, and Sustainability at the University of Northern Colorado. Her research focuses on community resilience and deep adaptation in the wake of environmental disasters and global climate change. Her fieldwork in West Africa has been supported by Fulbright, NEH, and the Red Cross. She was recently selected as a Fellow for Cohort 7 of Homeward Bound, a global leadership initiative for women in science. In 2022, Barton was awarded the Senegalese Knighthood of the Order of the Joola for helping to bring the story of Senegal's largest humanitarian maritime disaster to American audiences. Her Fulbright Specialist grant to Nepal took place in 2018-2019 and Barton can be reached at karen.barton@unco.edu for anyone interested in learning more about the program.
