DO ALL GEORGIAN RIVERS LEAD TO EUROPE?

BY LUMIN EDMONDS

These Aren't Georgia Peach Trees

If the title and photo above are any indication, I didn't spend my summer in the peach orchards of the Georgian piedmont in the southern US. The Republic of Georgia, a post-Soviet country in the Caucasus Mountains, is located at the crossroads of Europe and Asia. The size of South Carolina, the country boasts 22 microclimates, supporting a range of biodiverse regions including temperate rainforests to the west and alpine environments to the north. Situated on a geologic plate boundary conducive to a unique geography with mountains serving as headwaters to high velocity rivers, there is support for this biodiversity in addition to hydropower and agricultural irrigation; contrarily, there is risk for natural disaster.

The unique position of the country plays an interesting role politically, as well, which I quickly realized impacted environmental outcomes. As 80 percent of the country's people look ahead to potential accession into the EU and Western donors continue to fund civil society's progress towards sustainable development, the Russian border looms to the north. Oil and grain supplies come from Russia, and the economy is fueled by continued trade with Russia. Compounding this, Georgian Dream, the ruling party in government, signals its intentions to pull away from Europe and increase ties with Russia.

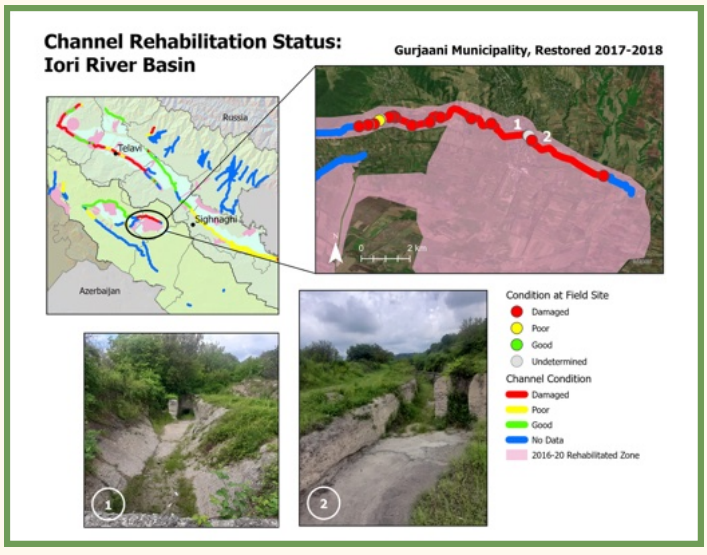
Reflections

I arrived in Tbilisi, Georgia, the first week of June with the intention of mapping forest cover for the Caucasus Environmental NGO Network (CENN) and learning a bit about the ways environmental NGOs interact with other state and non-state actors. Forests and trees (not of the cultivated peach variety), simple. Not so! Over my ten week stay, I did almost everything but map forests. Although I devoted most of my time at CENN to GIS and project management to increase capacity and disaster resilience within watersheds, forests remained a hot topic. Hydrology impacts forest distribution, and forests in turn impact hydrology, presenting a powerful nature-based solution to disaster risk management. Yes, it is confirmed: ecosystems are real.

1. A Participatory Approach

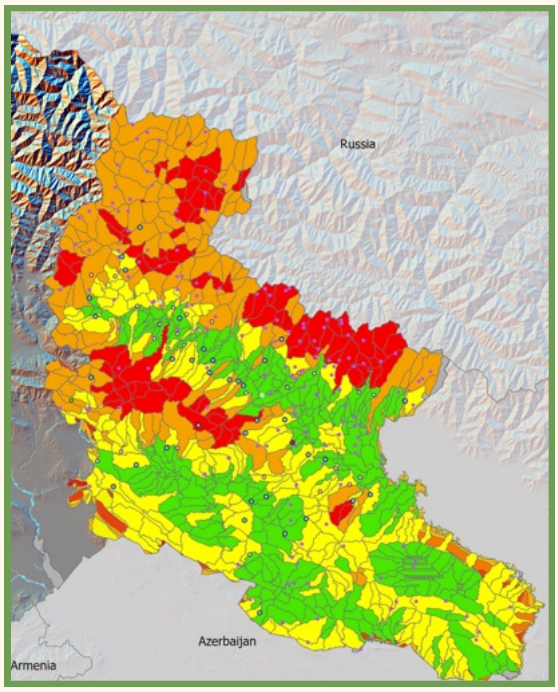
On what will probably go down as the most exciting first day of work I'll ever have, I left the city to join a participatory mapping workshop in Kakheti, Georgia's wine-making region. You could imagine my relief when I discovered that participatory mapping exists in the real world, outside of class discussions and the academic literature. Members from CENN, The German Agency for International Cooperation (GIZ), and Georgian Ministry of Environmental Protection and Agriculture officials joined local forest managers and experts to discuss forest ecosystem services. While Georgia's historical and cultural landmarks and waterways can't be assigned market values, their existence provides opportunities for local income generation beyond timber harvesting. With an understanding of these opportunities, in groups, each attendee used their own expertise to envision new ways of categorizing the region's forests for management.

This participatory approach and community involvement is something I frequently witnessed during my time with CENN. As a civil society organization with mostly Georgian personnel, they strike a balance between local contextual knowledge and professional scientific knowledge that foreign donors hoping to bolster sustainable development in the country cannot achieve. GIZ, the German donor agency, was the only foreign bilateral agency I interacted with who prioritized cooperation with local Georgian communities on the ground. CENN mediates between donors like GIZ, civilians, and other professionals from universities and government agencies to realize sustainable development outcomes.



2. A Restorative Approach

I used field data to produce 23 maps presented to stakeholders to begin guiding the restoration of stream channels along Iori and Alazani Rivers, which are damaged in many areas. Hydropower generates around 70-80% percent of electricity in Georgia in the summer months, and with the country's primary supplier of oil and gas being Russia, CENN and donors envision a switch away from gas towards greater hydropower generation. Functional channels and infrastructure are critical for such a transition, but there is another caveat: farmers in this agricultural region need the water for irrigation. This conflict of interests is addressed through work CENN does on ground with local communities, but also through informing the Ministry of Environmental Protection and Agriculture of where funding should be directed to maximize channel flow.



3. A Disaster Risk Reduction Approach

Georgia's geography presents risk for disaster, including frequent earthquakes, landslides, and mudslides, yet there are precautionary measures that can be taken to mitigate these risks. In an effort to help the Ministry of Environment and Agriculture, I classified the Kakheti Region based on its risk for disaster. Green areas in the map at left indicate areas where it is safest to fell trees, while in red areas the opposite is true. These classifications are based on frequency and location of past disasters as well as other geographic features like soil composition.

4. A Transboundary Approach

As surprising as it may be, Georgia's rivers and other natural features do traverse its borders. Georgia's southern border is shared with Armenia, yet Armenia's environmental, social, and economic vulnerabilities outnumber Georgia's. The USFS International Program partnered CENN with an environmental NGO in Armenia, with the goal of increasing Armenia's capacity to withstand disaster. I brainstormed youth and women's development activities and workshops that could be conducted under CENN's leadership, leveraging their expertise on disaster risk management and reduction strategies. The project focused on implementing nature-based solutions along the transboundary Debeda River, including agroforestry measures and wetland enhancement.

My friends, Ian Matthews ('25) and Kathryn Webb ('23)

5. A Climate Resilient Approach

Another factor among many impacting the country's hydrology are the glaciers lining the Caucasus Mountains along the Russo-Georgian border. I spent a day searching through database indices to track glacial melt, but much of the extant satellite and radar data conveniently exclude the border for political reasons. High elevation weather conditions don't help, producing a thick cloud cover that prevents geospatial analysis. A joint project between CENN and the USFS, Climate Resilient Watersheds reaches the heart of this– the goal being to install stream gauges in areas where there are currently gaps in data. Tracking changes in river flow can improve our understanding of the effects climate change may have on watersheds and risk for natural disaster.

Following a day of meetings with stakeholders, I was lucky enough to travel to the mountains in Kazbegi to visit the sites of current stream gauges with CENN, USFS members, the Deputy Head of Hydrometeorology at the National Environmental Agency, and a geomorphology professor from the US. It was impossible to escape the chatter of professionals passionate about their work! I learned that Georgia and Taiwan are two of the only places where uplift rates from converging plates exceed erosion rates, but Georgia's steep rivers contribute to high sediment load in said rivers. In typical fashion, this led to a debate on whether geology is really the source of erosion or more so the grazing that takes place on the mountainsides.

I also learned a great deal about how CENN is weighing both US and EU frameworks for watershed management, with a preference for the US framework in this case because of the project's source of funding. The mountains and glaciers were pretty cool, too.

I devoted hours to drafting potential outputs and goals for this project, but with limited funding, CENN's more ambitious goals weren't able to be addressed. However, during my final week, a landslide in the northern part of the country caused over 20 deaths, justifying the importance of tracking changes in glacial melt over time.

Looking Ahead

None of these experiences would have been possible without the hospitality of Georgians, generous donors, all that I've learned in my interdisciplinary coursework during my time at W&M, and Professor Maliniak's support and encouragement.

As I round out my time here as a senior at W&M, I look forward to expanding upon what I learned this summer through continued research in the International Political Affairs in the Caucasus Lab in the Government Department under the supervision of Professor Maliniak.

The Republic of Georgia presents a unique case for continued study because most of its citizens express a desire to formally integrate into the EU, while the country has not been granted accession. Development donors, each employing different approaches, are continually shaping a path towards sustainable development, carving the way to European integration. Theories in the literature suggest that processes of Europeanization occur as a result of changes in policy and incoming aid from European agencies and donors, but the literature focuses mostly on current EU members and those which have acceded in recent years. A normative process of Europeanization may be occurring as a result of European donor aid flows, despite not being on the formal accession path. Understanding how these processes affect sustainable development outcomes in Georgia is important both for understanding progress towards EU integration and ensuring a global sustainable community.

In addition to reviewing the extant bodies of literature to understand how these ideas are currently conceptualized and theorized, I plan to conduct interviews with professionals employed in environmental NGOs like CENN and bilateral donor agencies including the USFS and GIZ to fill in gaps that exist, as Georgia itself is often overlooked.

The greater aim of this research will be to determine how environmental or sustainable development agencies and donors, the Georgian government, Georgian non-governmental organizations, and Georgian civil society interact with one another to achieve sustainable development outcomes. Georgian civic engagement in development is pivotal to ensuring that programs implemented are socially, economically, and environmentally sustainable. The approaches that foreign aid agencies and donors employ affect the extent to which civil society is engaged in the process. The aim is therefore to uncover the differences in approaches by each of these actors and how those differences manifest themselves in environmental and social outcomes in Georgia.