

Refilling Punjab's Aquifer: Preventing Desertification of the Bread Basket of India

I would like to begin by sincerely thanking the Landscape Architecture Canada Foundation (LACF) for supporting my practicum project through this grant. This funding made it possible for me to travel to Punjab, India, and carry out fieldwork that was essential to the success of my research. Without this support, I would have been limited to online data sets which are not readily available to the general public in India, and additionally which could not capture the complexities of the landscape, the farming practices, and the cultural context that define the region.

The funding allowed me to conduct site visits and firsthand analysis of villages in the Hoshiarpur district, more specifically in the Nadalon Village. Being present on the ground enabled me to collect accurate data on hydrology, settlement patterns, and agricultural conditions. More importantly, I had the opportunity to meet and speak with local farmers and community members. These conversations provided deep insights into why rice cultivation continues despite the severe water crisis, reasons that included cultural attachment, economic dependence, and the lack of awareness around it. These human perspectives were critical to understand that any successful design must integrate technical solutions and community participation and education.

With this foundation, I was able to develop site-specific design strategies that propose water collection and aquifer recharge systems tailored to the unique geomorphology of the area. The grant enabled me to identify precise plots of land where water harvesting structures can be implemented, along with methods for integrating these systems into existing agricultural cycles. By aligning the designs with local practices and lived realities, the project was able to offer practical solutions that can be adopted by the community with the help of NGOs. This travel also allowed me to meet with different NGOs and learn how they are making these changes on even smaller scales “one farm at a time”.

The impact of this funding is reflected directly in the depth and authenticity of the project outcomes. The practicum now presents a framework that addresses the urgent issue of groundwater depletion and how as a community it can be tackled. The work also demonstrates how landscape architecture can engage meaningfully with pressing challenges of food security, climate change, and desertification in Punjab.

By documenting and analyzing these lived experiences alongside ecological and hydrological data, this project offers a replicable model for landscape interventions for similar geographic areas that are both environmentally resilient and socially grounded.

I am deeply grateful to LACF for making this work possible. The grant supported the travel and research required for this practicum while ensuring that the outcomes remain rooted in the agricultural identity of the state.