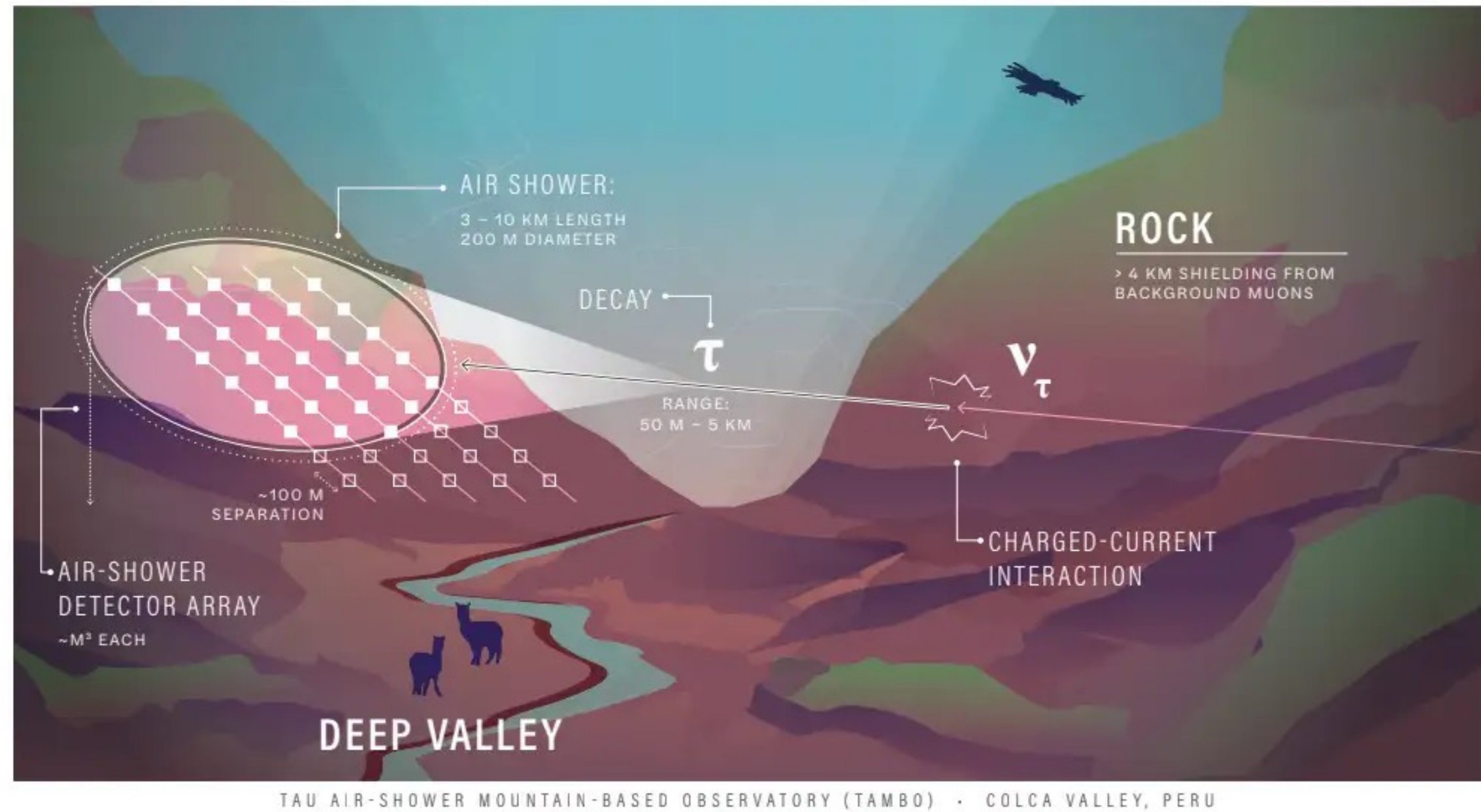


Equitable Astrophysics in Underserved Communities: The Case of the TAMBO Neutrino Observatory in the Peruvian Andes

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The TAMBO Observatory



The TAMBO observatory is a proposed neutrino telescope that aims to detect Earth-skimming tau neutrinos.

Due to the small number of expected tau neutrinos produced at Earth, each tau neutrino observed in TAMBO is expected to be of astrophysical origin. Yielding a unique sample of high-energy astrophysical neutrinos.

Interdisciplinary Workshop



We organized an interdisciplinary workshop in January of 2024 at Harvard Radcliffe Institute. Workshop included Peruvian academics, scientists representing large experiments in Latin America (e.g., HAWC, Auger, SWGO), government officials, and science policy makers,

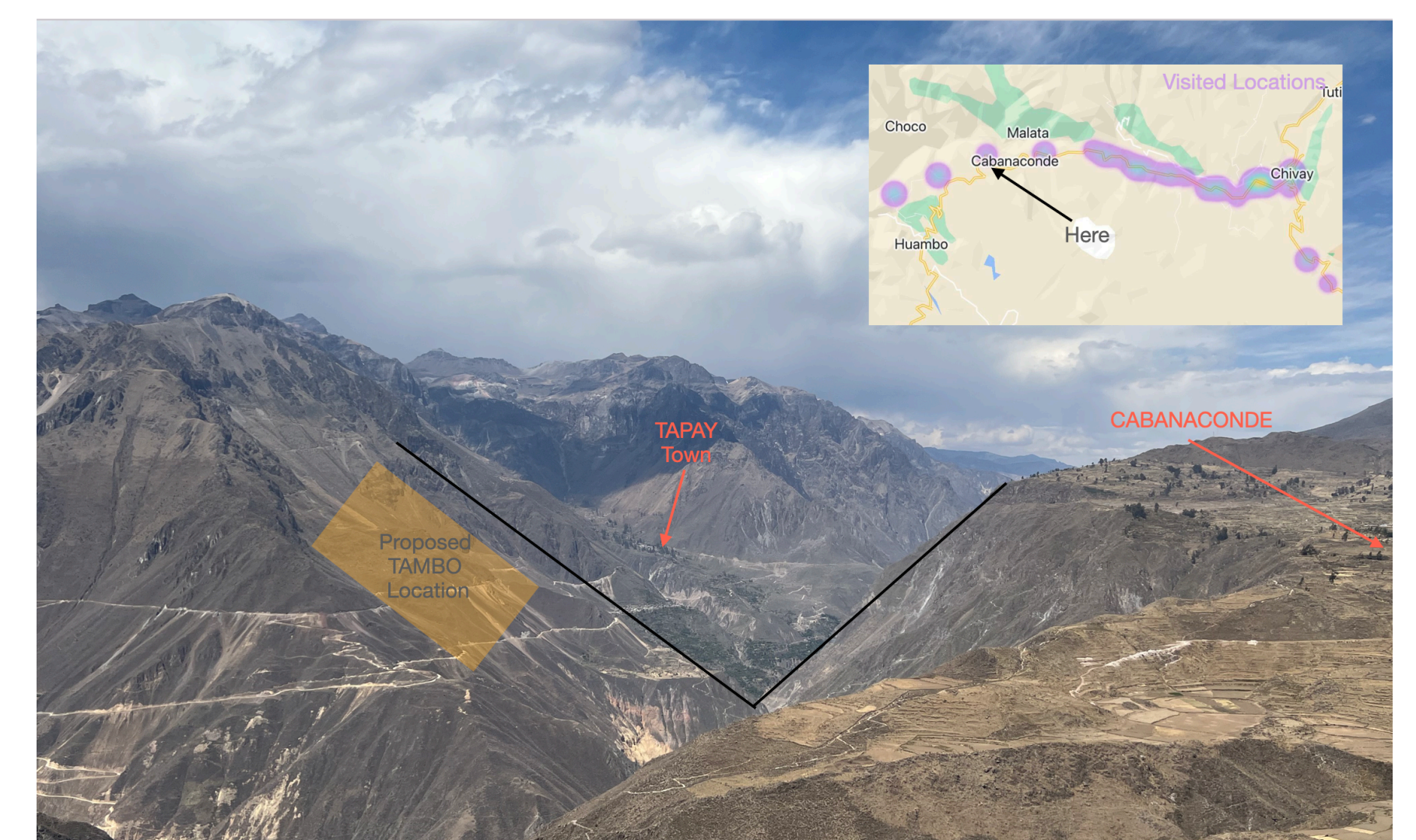
1. What are the key factors that determine if an observatory is embraced or rejected by its host community and how do these factors relate to scientists' engagement with host communities?
2. How can scientists engage the local population such that they sustain a long-term, positive societal impact in the community in which their experiment is based?
3. How can developing countries help fund and responsibly site large-scale scientific infrastructure—involving local communities, businesses, and governments?

First steps and site expedition

We were invited to participate in a workshop on astroparticle physics at the *Universidad Nacional de Arequipa*, which is the local university close to the proposed TAMBO site. The workshop included university official, local, state, and central government officials.

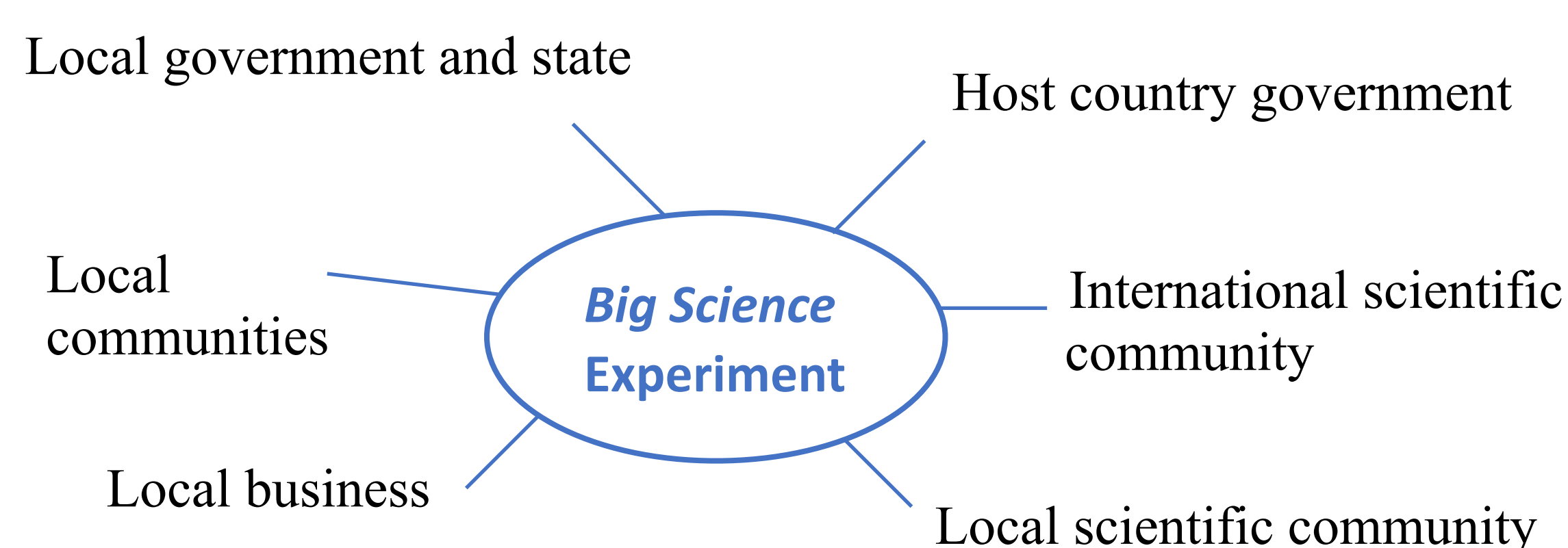
We traveled through the Colca canyon looking for sites for a prototype array and the main array.

The Colca canyon is site to various agricultural and touristic activities. The area is inhabited by three ethnic groups the *Kollawas*, *Cabanas*, and *Ccaccatipay* people.



Responsible siting of an observatory

Identifying and mapping stake holders



Many players involved in these large-scale experiments involved. With different interests and speak different language. Local community involvement is specially important.



Lessons Learned

- **Stakeholder mapping:** Structural approach to stakeholder mapping
- **Consent:** Do not commodity consent
- **Value:** Multiple levels of adding value
- **Engagement:** Going beyond traditional outreach activities
- **Indigenous knowledge:** Appreciation and respect for indigenous knowledge.

Acknowledgments

We thank the Harvard Radcliffe Institute for the support of this work, the Harvard Physics Department, and the Faculty of Arts and Sciences of Harvard University. Additionally, TAMBO development and research was supported by the Milton Fund and the Faculty of Arts and Science of Harvard University.

