

## International Network for Collaboration in Volcanology (INVOLC)

# Guidelines for Best-Engagement Protocols in International Collaboration

*This document presents a set of guidelines for best-engagement protocols in international collaboration in volcano science, both related to times of volcanic crises (unrest and/or eruption) and research at all other times (i.e. volcano science undertaken in all sectors including but not limited to operational and academic settings). An initial version of these guidelines were drafted via group discussion during an inaugural workshop of INVOLC, “Fostering developed-developing country partnerships for the advancement of global volcano science”, hosted by The University of the West Indies Seismic Research Centre (UWI-SRC) from 4-7 June 2019, and with support of seven different international organisations/institutions, including IAVCEI and IUGG. In total 25 participants from 20 different countries, primarily Lower-and-Middle-Income Countries (LMICs), came together to discuss challenges to undertake volcanology in a resource-limited context, as well as mechanisms to advance volcanology and inclusion of all volcano scientists into the international community.*

*These guidelines were presented to the IAVCEI Executive Committee during the 27<sup>th</sup> IUGG General Assembly in July 2019, Montreal, Canada. The IAVCEI EC formally endorsed INVOLC to function as an IAVCEI network and requested some minor changes to the guidelines. The updated version was presented to the wider volcanology community as a series of 15 recommendations for additional feedback in June 2022. Feedback and comments were incorporated into the current version.*

*These guidelines have been prepared with the intent of seeking formal endorsement by the IAVCEI Executive Committee during the IAVCEI2023 General Assembly in January-February 2023, for incorporation and publication as formal IAVCEI guidelines to guide collaborations in volcanology. It is expected these guidelines could provide a foundation for future measure of progress of collaborative practice in volcanology.*

*For IAVCEI-INVOLC, 21<sup>st</sup> December 2022*

## Best-engagement protocols for international volcanology collaboration:

1a. **Research activities** carried out by foreign teams in a country should be undertaken in partnership with (an) appropriate local institution(s). Ideally, the local institution(s) should be contacted and involved in the research strategy, rollout and outcomes. The *minimum* should be that the **local institutions** (i.e. those institutions based in the country where the research target is located) are informed well in advance of research implementation and research outcomes shared.

1b. Research teams using **satellite remote sensing** on a particular region in a country other than where they are based, but without any on-the-ground field component of data collection, are strongly encouraged to also engage with a research partner of the respective country and include them in the research. They are particularly advised to share their results with relevant organisations mandated with crisis response in the host country, especially regarding potentially increasing volcanic unrest or activity.

2. At the start of a partnership, the assessment of **needs and knowledge gaps** of the involved partners should be openly discussed. This assessment should be the basis for the definition of the objectives of the partnership and the selection of suitable partners.

3. The **long-term goal** of each partner and how the project feeds into that goal are essential factors, and should be openly discussed between partners to ensure common understanding. This requires consideration of, for example:

- the exchange of knowledge and building of human capacity in local institutions
- the structural/sustainable development of infrastructures (including instrumentation)
- the inclusion of local partners within the international research community (participation in conferences, research outputs, outreach, ...)

4. During the design of a project, the **roles and responsibilities** of each partner (including during changes in level of activity or unrest at a volcano) should be clearly defined at initiation of a partnership, ideally as a component of a written partnership agreement that also articulates the scope and duration of the project. As much as possible, project responsibilities should be shared between the foreign and local partner to promote equitable decision-making during the formulation and implementation of the project.

5. Prior to the establishment of a new partnership, a **data sharing and use policy** should be agreed upon, as one component of the partnership agreement. This policy should include the rights and limitations in using and sharing relevant existing and new data\* collected during the project with third parties for the duration of the partnership and beyond. *\*Subject to the*

*agreement of all parties, “data” may include any samples, results, analyses, code, metadata, etc. collected.*

6. As part of the establishment of a new partnership, all partners should be aware of relevant **national or institutional regulations** related to scientific activities of foreign scientists in the host country. Compliance with these regulations is essential before starting the research activities.

7. The partnership agreement should clearly define the **contributions** from all parties, including financial and any other resources, e.g. human, existing infrastructure and equipment, ...

8. The partnership **agreement** should cover the ownership of tangible assets, intellectual property, research output, etc. after the **end of the partnership**.

9. **Duties and priorities** of the local partners should be considered so that the partnership activities do not impose any undue burden on the available resources of the local institution.

10. **Dissemination of any research output**, e.g. through scientific publications, outreach activities, project web pages, etc., should be undertaken with explicit mutual agreement of all partners, and properly acknowledge the contribution of all partners and all data sources.

11. All partners should be **encouraged to contribute** to the interpretation and publication of all research results from the partnership, including in international and national publication venues. Local partners should be encouraged and supported to **lead publication** of the results coming out of the partnership.

12. Foreign partners should be aware of and respect the established relationships and trust between the **local partners and their stakeholders** (e.g. communities, civil protection, authorities, ...). As appropriate, the partnership should seek to contribute to the interactions with stakeholders, under the lead of the local partner.

13. Foreign partners should comply with the **existing IAVCEI protocols** regarding the professional conduct at **times of crisis** (IAVCEI Subcommittee for Crisis Protocols 1999; IAVCEI Task Group on Crisis Protocols 2015).

14. Foreign partners should consider and respect the **cultural realities** of the region involved in the partnership.

15. **Communication strategy** related to the partnership should be agreed upon at initiation of the collaboration among all project partners, including conditions of revision of the strategy. This strategy should be repeatedly discussed and reviewed throughout, and where appropriate, beyond the duration of the collaboration. It encompasses, but is not limited to communication through social media, outreach activities, etc., and with specific attention to potentially sensitive information during crisis.

### References

IAVCEI Subcommittee for Crisis Protocols, 1999. Professional conduct of scientists during volcanic crises. *Bulletin of Volcanology* 60, 323–334. <https://doi.org/10.1007/PL00008908>

IAVCEI Task Group on Crisis Protocols, 2016. Toward IAVCEI guidelines on the roles and responsibilities of scientists involved in volcanic hazard evaluation, risk mitigation, and crisis response. *Bulletin of Volcanology* 78, 31. <https://doi.org/10.1007/s00445-016-1021-8>