# Proposal: Safecast Radiation Mapping Workshops in Gelephu Mindfulness City, Bhutan

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## Executive Summary

Safecast proposes a partnership with universities and high schools in Gelephu Mindfulness City (GMC), Bhutan, to conduct hands-on workshops empowering students and educators to build and deploy open-source bGeigieZen radiation monitoring devices. These workshops will enable Bhutan to collect and share its first open radiation data, placing the country on the global Safecast radiation map. This initiative aligns with GMC's vision for sustainability, innovation, and mindful development.

Travel and instructor logistics will be finalized in close consultation with Joi Ito and his team, ensuring alignment with local needs and the broader vision of the project.

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## Project Overview

**Objectives:**

- Train students, teachers, and community members to assemble and use bGeigieZen kits.
- Map radiation levels across GMC and Bhutan, creating the country's first open dataset.
- Integrate Bhutan into Safecast's global citizen science network.
- Foster STEM skills, environmental awareness, and open innovation.

**Target Participants:**

- High school and university students
- Educators and faculty
- Local community members interested in science and sustainability

**Workshop Structure:**

- Duration: 1 day per workshop (flexible)
- Group size: 10 participants per session
- Instructors: 3 Safecast experts (technical, scientific, and data specialists)

**Location:**
Universities and/or high schools in Gelephu Mindfulness City

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## Alignment with Mindfulness City Vision

This project supports GMC's core values by:

- Advancing sustainability through environmental monitoring and transparency
- Providing practical STEM education and open-source technology training
- Fostering a culture of mindful, data-driven decision-making
- Connecting Bhutan to a global network of citizen scientists

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## Workshop Components

**Morning session:**

- Introduction to radiation science and environmental monitoring
- Overview of Safecast's global mission and impact
- Hands-on assembly of bGeigieZen kits

**Afternoon session:**

- Field deployment and data collection around GMC
- Uploading and visualizing data on the Safecast map
- Group reflection on science, mindfulness, and environmental stewardship

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## Expected Outcomes

- Bhutan's first open radiation dataset, visible on the Safecast global map
- 10+ trained local participants per workshop, capable of maintaining and expanding the network
- Educational resources in English and Dzongkha for future replication
- Enhanced STEM and environmental literacy in Bhutanese schools and universities

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## Implementation Timeline

1. **Month 1:** Confirm partnership with GMC institutions and consult with Joi Ito’s team on travel and instructor logistics.
2. **Month 2:** Procure bGeigieZen kits, translate materials, and prepare venues.
3. **Month 3:** Conduct workshops and deploy devices.
4. **Ongoing:** Monitor data uploads, provide support, and plan for expansion.

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## Partnership Benefits

- **For Bhutan:** Establishes the country’s first open radiation monitoring network and builds local capacity in STEM and citizen science.
- **For GMC:** Reinforces its status as a model for mindful, sustainable, and innovative urban development.
- **For Safecast:** Expands global data coverage and strengthens international partnerships.
- **For Joi Ito and Team:** Opportunity to support a pioneering initiative at the intersection of technology, education, and social impact.

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## Budget for Safecast Radiation Mapping Workshop in Bhutan (USD)

| Category | Description | Unit Cost (USD) | Quantity | Subtotal (USD) |
|---|---|---|---|---|
| **bGeigieZen Kits** | Radiation monitoring kits (Geiger counter, GPS, microcontroller, battery, enclosure, etc.) | $400 | 10 | $4,000 |
| **Shipping & Import** | International shipping and customs fees for kits and materials | $75 | 1 | $75 |
| **Educational Materials** | Printed manuals (assembly, radiation science), field notebooks, translation to Dzongkha | $30 | 10 | $300 |
| **Workshop Supplies** | Soldering irons, hand tools, safety goggles, extension cords (rental or purchase) | $350 | 1 | $350 |

| Category | Description | Unit Cost (USD) | Quantity | Subtotal (USD) |
|---|---|---|---|---|
| **Venue & Refreshments** | Classroom/lab rental if needed, refreshments and light meals for participants and staff | $250 | 1 | $250 |
| **Local Transportation** | In-country transport for field mapping (vehicle rental, fuel, or local taxis) | $200 | 1 | $200 |
| **Contingency** | Unforeseen expenses (extra tools, outreach, equipment replacement) | $400 | 1 | $400 |
| **Instructor Travel** | To be determined in consultation with Joi Ito and his team | TBD | TBD | TBD |
| **Total (excluding travel)** | | | | **$5,575** |

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## Line Item Explanations

- **10 bGeigieZen Kits ($4,000):**
  Ten complete kits, each including a professional-grade Geiger counter (using the LND7317 tube2), GPS, microcontroller, battery, and enclosure. These are the same devices used by Safecast volunteers worldwide for consistent, high-quality data collection.
- **Shipping & Import ($75):**
  Covers international shipping and any customs duties for bringing the kits and materials into Bhutan.
- **Educational Materials ($300):**
  Professionally printed assembly instructions, radiation science guides, and field notebooks for data recording. Includes translation of key materials into Dzongkha to ensure accessibility for all participants.
- **Workshop Supplies ($350):**
  Includes rental or purchase of soldering irons, hand tools, safety goggles, and extension cords. These are essential for safe and effective kit assembly and may be reusable for future workshops.
- **Venue & Refreshments ($250):**
  Rental of a classroom or laboratory space (if not provided free by the host institution), plus refreshments and light meals for participants and instructors during the two-day workshop.

- **Local Transportation ($200):**
  Covers local travel for field mapping exercises, such as vehicle rental, fuel, or local taxi fares.
- **Contingency ($400):**
  Reserved for unexpected costs, such as equipment replacement, additional translation, or outreach to remote schools.
- **Instructor Travel (TBD):**
  International and local travel, accommodation, and related costs for Safecast instructors will be determined later in consultation with Joi Ito and his team, ensuring the most effective and context-appropriate arrangements.

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## Summary Table

| Category | Amount (USD) |
|---|---|
| bGeigieZen Kits | $4,000 |
| Shipping & Import | $75 |
| Educational Materials | $300 |
| Workshop Supplies | $350 |
| Venue & Refreshments | $250 |
| Local Transportation | $200 |
| Contingency | $400 |
| Instructor Travel | TBD |
| **Total (excluding travel)** | **$5,575** |

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## Budget Notes

- **Instructor travel and related logistics** will be finalized with Joi Ito (Japanese entrepreneur, technologist, and former MIT Media Lab Director) and his team, leveraging their expertise in international collaboration and local context.
- If the host institution provides venue and/or tools, costs may be reduced accordingly.
- This budget is for one workshop (10 participants); additional workshops will scale proportionally.
- All Safecast data collected will be openly published and integrated into the global Safecast map, putting Bhutan’s radiation baseline on the world stage24.

This budget ensures a transparent, practical, and locally adaptable approach for launching Safecast's first Bhutan workshop, with flexibility for international collaboration.

## Conclusion

By hosting Safecast workshops in Gelephu Mindfulness City, Bhutan can become a thought leader in open environmental data and mindful innovation. With travel and instructor arrangements to be made in close consultation with Joi Ito and his team, this project will ensure both local relevance and global impact.

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*Joi Ito is a Japanese entrepreneur, venture capitalist, and former director of the MIT Media Lab, recognized for his leadership in technology, innovation, and citizen science2.*

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