

As we experience the effects of a changing climate, and the conservation profession becomes more environmentally conscious, there is growing impetus to become more sustainable. 'Going zero-waste' can encourage us to rethink our practices and test how sustainable consumption might work on a larger scale. In 2019, a zero-waste initiative was trialled by the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) during the training courses:

**Communication and Teaching Skills in Conservation Science, 9 – 20 September, Saga University, Arita, Japan;**  
**Planning new exhibitions: conservation, communication, community, 2 – 23 October, Lao National Museum, Vientiane, Laos PDR.**

Established in 1959, **ICCROM** provides its 137 Member States with the skills, knowledge, tools and enabling environments to preserve cultural heritage in all forms, for the benefit of all people. It achieves this mission through training, research, information, cooperation and advocacy.

**Sustainable consumption** is action taken to minimise our environmental impact by promoting resource and materials efficiency, as well as reducing the production of waste, emissions and pollutants, and use of toxic materials so as not to threaten the needs of future generations.

**Zero-waste** is the diversion of all non-hazardous waste from landfill or incineration through eliminating, reducing, reusing, composting or recycling waste products.

## Planning

- ▶ Early communication and collaboration with the course organisers, partners, teachers, participants, venue staff, caterers and suppliers.
- ▶ Appointing a Zero-Waste Officer to keep the team on track.
- ▶ Anticipating the biggest potential sources of waste: food packaging and PET bottles in Arita; plastic water bottles in Vientiane.
- ▶ Careful planning and creative thinking to eliminate or reduce consumables (Figure 1).

## Venue & facilities

- ▶ Selecting an appropriate-sized training room (avoiding unnecessary heating or cooling), with natural light, ventilation and temperature controls used where possible.
- ▶ Utilizing projectors and whiteboards to limit the use of paper flipcharts.
- ▶ Switching off electrical equipment when not in use.
- ▶ Providing clearly labelled bins to separate waste and prevent the contamination of recycling with compostable or non-recyclable waste (Figure 5).

## Course materials

- ▶ Eliminating non-essential paper and stationery items.
- ▶ Digital programs, maps and reading materials made available before and after the training courses.
- ▶ Reducing the amount of printing with clever design (e.g. removing specific dates or locations), which also enables future use.
- ▶ Reusing materials from previous training courses, including branded stationery items and teaching objects.
- ▶ Before purchasing new materials from local suppliers, checking that anything leftover could be reused by the host institution (Figure 3).

## Food

- ▶ Providing a water re-fill station, ceramic cups, plates, glassware and metal cutlery (Figure 4).
- ▶ Replacing single-serve sachets with coffee pots, loose-leaf tea, sugar bowls and milk jugs.
- ▶ Serving seasonal, locally-sourced food buffet-style, so people only took what they had appetite for.

## Transport

- ▶ Selecting accommodation walking distance from the venue and/or restaurants, pharmacies and grocery stores.
- ▶ Participants and teachers shared transport to the airport, venue and excursions (Figure 2).
- ▶ Offsetting the carbon emissions from flights of the course team and participants (not implemented in 2019, but highly recommended in future).

## Evaluation

- ▶ Daily tracking of waste allowed for quick adjustments to target specific issues or remind participants of the zero-waste objective (Table 1).
- ▶ Surveying participants to gauge their understanding of the initiative and suggest improvements.
- ▶ Recording any costs or savings to assist with future planning.

## Challenges

Sustainability measures are most useful when understood and applied as a process and not merely an end-goal. Although it was difficult to collect accurate results, the act of measuring waste proved more useful as it prompted regular evaluation and improvements. Setting a zero-waste objective required early planning, problem-solving, creative thinking, and making many small, informed decisions to guide meaningful changes to behaviour. Often this was difficult, as people easily fell back into old habits or convenience. This challenge also highlighted the need for changes to be easy to adopt; strong leadership from course organisers and trainers; and regular encouragement to drive collective change.

## Opportunities

The zero-waste initiative showed the great potential for meaningful change within a collective. Significant savings resulted from buying fewer course materials, printing, food and refreshments. Widely communicating the zero-waste objective in Arita helped foster goodwill and food donations from the community, as well as free tours and admission to cultural sites. Furthermore, actions such as sharing transport in Vientiane, and cooking meals together in Arita, greatly strengthened the group bond. Inspiration was drawn from old and new practices. The traditional lunchtime bento box addressed food packaging waste in Japan, while the digital sharing of information limited paper-based waste in Vientiane and Arita. Applied on a small scale, zero-waste offered a useful way to test sustainability initiatives and encourage broader conversations about sustainability in the profession. Participants' understanding of sustainability increased overall and prompted the integration of sustainability issues into the course programs. For example, sustainable exhibition practices were discussed in Vientiane.

**Table 1: Example of Daily Waste Record, Arita, Japan.**

	COMPOST	RECYCLE			DISPOSE	
	Kitchen waste (kg)	Paper (kg)	PET bottles (kg)	Cans & glass bottles (kg)	Landfill (kg)	Burnable waste (kg)
10/9/19	1.910	0.174	0.095	0.360	0	1.351
11/9/19	2.600	0	0	0	0.066	1.078
12/9/19	8.100	0	0.100	0.500	0	2.250
13/9/19	5.700	0	0.900	1.400	0	3.800
14/9/19 Nagasaki excursion	0	0	0	0	0	0
15/9/19 Day-off	0	0	0	0	0	0
16/9/19	5.200	0	0.450	1.200	0.450	1.600
17/9/19	2.650	0	0.100	1.000	0.350	0.400
18/9/19	5.400	0	0	0	0	1.000
19/9/19	1.100	0	0.150	0	0	2.000
20/9/19	2.700	0	0.450	0	0	1.000
<b>TOTAL (kg) 11 days</b>	<b>35.360</b>	<b>0.174</b>	<b>2.245</b>	<b>4.460</b>	<b>0.866</b>	<b>14.479</b>

## Waste Hierarchy

### ELIMINATE



**Figure 1:** Single-use plastic name-tags and lanyards were replaced with stiff cardboard and metal button badges.

### REDUCE



**Figure 2:** Shared transport was arranged to reduce emissions.

### REUSE



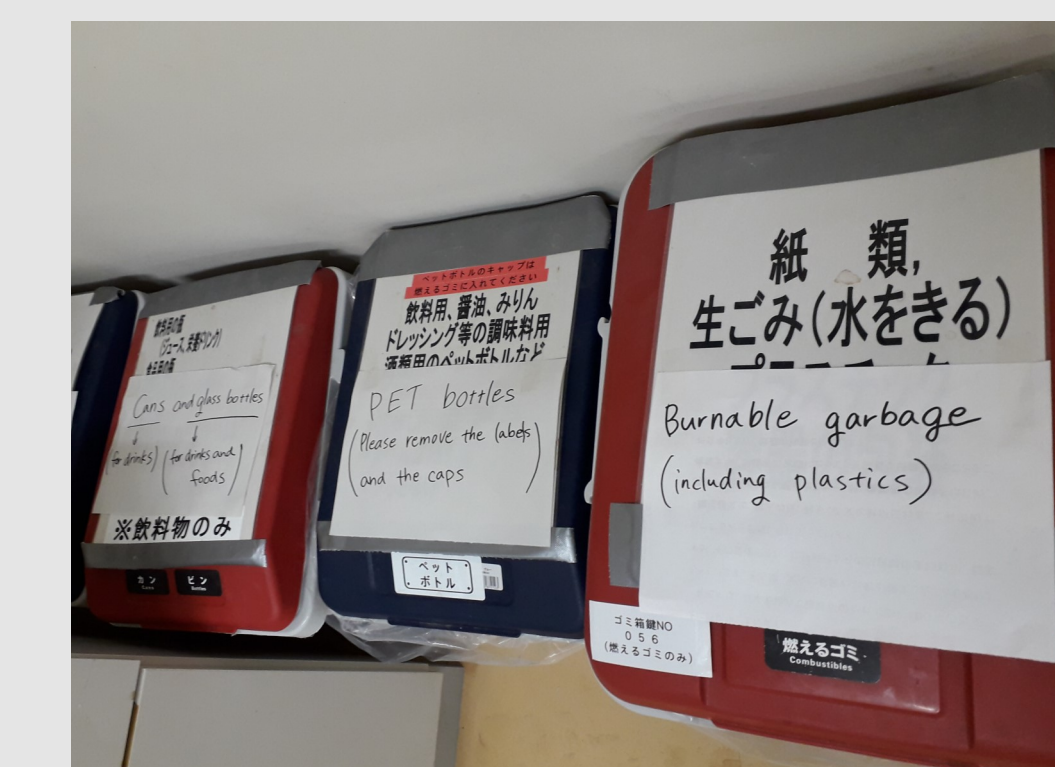
**Figure 3:** In Vientiane, leftover stationery items were donated to Lao National Museum after the training course.

### COMPOST



**Figure 4:** Reusable tableware and serving local tropical fruit were a means to reduce waste in Vientiane.

### RECYCLE



**Figure 5:** Waste was separated in Arita to prevent the contamination of recycling.

### DISPOSE



**Figure 6:** In Arita, different types of waste were recorded and weighed each day.

During ICCROM courses in Japan and Laos PDR, organisers and participants were encouraged to make conscious choices and modify their behaviour to reduce waste. Although changing behaviour was challenging and required careful planning, the opportunities were promising. There were economic benefits, through cost savings; environmental benefits through minimising waste and pollution; and social benefits from educating participants through collective action. It is hoped the zero-waste initiative will encourage sustainable conservation practices.

**Acknowledgements:** Mie Ishii (Saga University), Khamseng Keoasa (Lao National Museum) & José Luiz Pedersoli Junior (ICCROM).

This project formed part of an ICCROM internship, generously supported by the Gordon Darling Foundation.