EAZA Guidelines to Managing Operations to Reduce your Environmental Footprint

Approved by EAZA Council
26 April 2023

These Guidelines acknowledge and refer to the excellent work already carried out by other associations such as WAZA Sustainability resources, AZA Green Guide, 2013, Volume I; AZA Green Guide, 2013, Volume II; BIAZA Sustainability Guide for Zoos and Aquariums: 2021 Edition; as well as coordinating with other EAZA Guidelines such as EAZA Guidelines for ethical and environmental policies for suppliers and contractors; EAZA Guidelines on Palm Oil ; EAZA Guidelines on Meat and Soya ; EAZA Guidelines on Timber.

The aim of these Guidelines is to provide a framework of references, information and examples to inspire and empower EAZA Members to manage the operations of their organisations to reduce the environmental footprint. EAZA is concerned about the current biodiversity crisis and the increasing rate of species extinction. The main reason of this ecological disaster is mostly due to overexploitation of natural resources and over-consumption by humans.

All stakeholders (including industry, NGOs, institutions, local communities, scientists, and individual consumers) have a major role to play to promote necessary changes of our current production and consummation models towards more durable and sustainable practices. EAZA recognises that in order to truly achieve its vision of *progressive zoos and aquariums saving species together with you,* Members should be continually following the latest science and taking appropriate steps to reduce their environmental footprint.

This document is split into the following key areas:

Green Team

Establish a group of personnel ranging from upper-level managers to representatives from all departments that are interested in sustainability and/or are already involved in sustainability efforts.

Roles and responsibilities should be clearly articulated for the Green Team members. The Green Team should be responsible for creating a sustainability mission and/or vision statement, quantifying operational baselines, prioritizing sustainable practice opportunities and strategies, and developing a dynamic Sustainability Plan.

More guidance in AZA Green Guide, 2013, Volume I, p. 9 - 12.

Develop and Maintain a Sustainability Plan

To create a dynamic sustainability plan, zoos and aquariums need only rely on their existing staff expertise and commit to reinvesting the monetary savings earned from implementing each year's sustainable practice strategies into the following year's sustainable practice strategies.

Five steps to developing and maintaining a Sustainability Plan as identified in the AZA Green Guide, 2013, Volume I, p. 9 - 12 are:

1. Conduct inventories to quantify and document the monthly unit usage amounts (or generation/discharge amounts) and associated euro (or relevant currency) spent amount within one or all topic areas (chemical, energy, fuel, waste, water) over the past 12 months.
2. Identify which Sustainable Practice Strategies (AZA Green Guide, 2013, Volume I, p. 11 & AZA Green Guide, 2013, Volume II, p. 7) are already met in each topic area and indicate the year initiated on the corresponding scorecard (AZA Green Guide, 2013, Volume II, p. 39 - 51) and tally the total number of baseline points earned.
3. Select which new Sustainable Practice Strategies will be implemented for the current year of the Sustainability Plan.
4. Count and compare the unit usage and money spent from those at the beginning – to those at the end – of the Sustainability Plan to assess progress.
5. Repeat steps 3 and 4 annually!

Chemical Management

Some wastes contain chemicals that are hazardous to the environment and people. Once these hazardous chemicals are present in the environment, it is often very difficult to get rid of them. Therefore, it is of utter importance that we know exactly what kind of chemicals we use, how we can separate them from other wastes and how we can process them in a safe and reliable way. Most importantly: if you can avoid using chemicals, then do so!

General Chemical Management Recommendations can be found in the AZA Green Guide, 2013, Volume I, p. 15. For example:

1. The Green Team should assess the organization's collective chemical usage amount over the past year by conducting a Chemical Inventory.
2. The Chemical Inventory should be conducted or updated on an annual basis (or more frequently depending on local regulations) and should:
    - Identify the type and quantity of all chemicals used onsite over the past 12 months.
    - Identify the ways in which each chemical was and still is currently used throughout the organization and by outside contractors.
    - Stipulate the purchasing practices used for each chemical, including quantity ordered and vendor information.
    - Describe the management, handling, and storage requirements for each chemical.
    - Identify the potential environmental hazards and disposal protocols for each chemical.
3. Results from the Chemical inventory should be used to determine if there are chemical management related sustainable practice strategies your organization can implement to reduce or eliminate your chemical usage unit amount, or switch to greener alternatives over the course of the following year.

More information concerning:

- Chemical Inventory
- Incorporation into your Sustainability Plan
- Sustainable Practice Strategies for Chemical Management

can be found in the AZA Green Guide, 2013, Volume II, p.12 - 13.

Chemical management resources can be found in the AZA Green Guide, 2013, Volume II, p. 13.

Energy Management

Energy use has become a matter of complex and strategic social, economic, and environmental importance worldwide. Against this backdrop, businesses are challenged to deliver responsible and effective energy management. BIAZA, 2021, p. 17 – 19.

General Energy Management Recommendations can be found in AZA Green Guide, 2013, Volume I, p. 17. For example:

1. The Green team should assess the organization's collective energy unit usage amount over the previous year by conducting an Energy Inventory.
2. The Energy Inventory should be conducted or updated on an annual basis and should:
    - Identify the type and quantity of energy (electricity, natural gas, solar, wind, hydro, geothermal, fuel cells, gasification, mega-generator, etc.) used and/or generated onsite over the previous 12 months.

- Stipulate purchasing or generation practices including vendor information.
- Calculate British Thermal Units (BTUs) per square meter (or foot) for each building and exhibit as well as your organization's total BTU consumption over the past year.

3. Results from the Energy Inventory should be used to determine if there are energy management related sustainable practices strategies your organization can implement to reduce or eliminate your energy usage unit amount, or if you should switch to greener alternatives over the course of the following year.

More information concerning:
- Energy Inventory
- Incorporation into your Sustainability Plan
- Sustainable Practice Strategies for Energy management

can be found in: AZA Green Guide, 2013, Volume II, p. 17 - 19.

Energy management resources can be found in: AZA Green Guide, 2013, Volume II, p. 19 - 20.

Other energy saving interventions can be found in BIAZA, 2021 p. 20 - 24.

Water Management

Reducing our water footprint will be a key challenge over the next 10-20 years. Within zoos and aquariums, taking positive action now will provide both substantial financial savings and, in many cases, also support adaptation to climate change (BIAZA, 2021, p. 25 - 26).

General Water Management Recommendations can be found in AZA Green Guide, 2013, Volume I, p. 29. For example:

1. The Green Team should assess the organization's collective water usage amount over the past year by conducting a Water Inventory.
2. The Water Inventory should be conducted and updated on an annual basis and should:
   - Identify all sources (buildings, food preparation, restaurants, landscaping, fountains, pools/exhibits, animal diets, public misters/fountains, etc.) where water was used onsite over the past 12 months.
   - Stipulate purchasing and discharge practices including vendor information.
   - Calculate the amount of water used and/or discharged for each source (in litres or gallons) and their associated costs over the previous year.
3. Results from the Water Inventory should be used to determine if there are energy management related sustainable practices strategies your organization can implement to reduce or eliminate your energy usage unit amount , or if you should switch to greener alternatives over the course of the following year.

More information concerning:

- Water Inventory
- Incorporation into your Sustainability Plan
- Water usage reduction

can be found in AZA Green Guide, 2013, Volume II, p.34 - 36.

Water Management Resources can be found in: AZA Green Guide, Volume II, p. 36.

More recommendations about reducing water consumption, reducing wastewater issues and other info can be found in: BIAZA, 2021, p. 27 – 33.

Waste management

As an example, waste that has been disposed of to landfill is the largest contributor to methane emissions, a greenhouse gas over 20 times more powerful than carbon dioxide. In addition, landfilled waste can often lead to pollution of aquatic systems and soils through leachate. As well as the environmental aspects, waste can also be very costly for your organisation. Dealing with your waste more sustainably can often lead to significant financial rewards (BIAZA, 2021, p. 4 - 5).

General Waste Management can be found on AZA Green Guide, 2013, Volume I, p. 25.

1. The Green Team should assess the organization's collective water usage amount over the past year by conducting a Waste Inventory.
2. The Waste Inventory should be conducted and updated on an annual basis and should:
    - Identify all waste generating sources (e.g. office supplies, food services, composting, animal faeces, etc.) across the organization.
    - Stipulate the disposal practices including waste removal vendor information.
    - Describe the management, handling, and storage requirements for each type of waste
    - Identify the potential environmental hazards of each type of waste
    - Quantify the amount of waste generated for each source (e.g. cubic metres, feet) and costs associated with these product losses (e.g. excess food) or waste removal over the previous year
3. Results from the Waste Inventory should be used to determine if there are waste management related sustainable practices strategies your organization can implement to reduce or eliminate your waste generation amount , or if your organization could switch to sustainable and/or compostable product alternatives over the course of the following year.

More information concerning:

- Waste Inventory
- Incorporation into your Sustainability Plan
- Sustainable practice Strategies for Waste Management

can be found in AZA Green Guide, 2013, Volume II, p. 31 - 33.

Waste management resources can be found in: AZA Green Guide, 2013, Volume II, p. 33.

More recommendations about waste disposal, transfer and other information can be found in: BIAZA, 2021, p. 6 – 9.

Fuel management

By establishing an annual monitoring program for fuel use, you empower your organisation with the information that is needed to move towards reductions and a more efficient use of fuel resources (AZA Green Guide, 2013, Volume I, p. 21).

General Fuel Management Recommendations can be found in AZA Green Guide, 2013, Volume I, p. 21. For example:

1. The Green Team should assess the organization's collective fuel usage amount over the past year by conducting a Fuel Inventory.
2. The Fuel Inventory should be conducted or updated on an annual basis and should:
    - Identify the type and quantity of all fuel (gasoline, propane, diesel, oil, etc.) used and/or generated onsite over the past 12 months.
    - Identify all fuel-powered equipment (e.g. combustion engines, vehicles, generators, etc.) and vehicles used onsite and calculate the amount of fuel used to power each (Fuel Efficiency for vehicles)
    - Stipulate the purchasing practices used for each fuel, including quantity ordered and vendor information.
    - Describe the management, handling, and storage requirements for each fuel.
    - Identify the potential environmental hazards and disposal protocols for each fuel.
    - Conduct a personnel commute and travel audit.
3. Results from the Fuel Inventory should be used to determine if there are energy management related sustainable practices strategies your organization can implement to reduce or eliminate your fuel usage unit amount , or if you should switch to greener alternatives over the course of the following year.

More information concerning:

- Fuel Inventory
- Incorporate fuel management into your Sustainability Plan
- Sustainable Practice Strategies for Fuel Management

can be found in: AZA Green Guide, 2013, Volume II, p. 23 - 24.

Fuel management resources can be found in: AZA Green Guide, 2013, Volume II, p. 24 - 25.

Construction

Sustainable construction means that buildings are designed and used with respect for people and the environment. It is not only about energy use, but also about responsible

water use, recycling materials and avoiding depletion of natural raw materials. Sustainable construction and remodelling encourage innovation and contributes to a better environment.

General Construction Recommendations can be found in AZA Green Guide, 2013 Volume I, p.17.

1. The Green Team should assess the organisation's collective construction management strategies for all construction projects over a designated budget amount, including new buildings and projects, renovations, and temporary exhibits, by conducting a Construction Inventory.
2. The Construction Inventory should be conducted or updated on an annual basis and should:
    - Identify the ways existing buildings and exhibits, as well as new capital construction projects, incorporate BREEAM (Building Research Establishment Environmental Assessment Method) or LEED (Leadership in Energy and Environmental Design) Certified, Green Globes and / or Wildlife Friendly components.
    - Stipulate purchasing practices including vendor information for these components.
3. Results from the Construction Inventory should be used to determine if there are construction-related sustainable practices strategies your organization can implement to reduce or eliminate your non-sustainable construction materials usage amount, or switch to greener alternatives over the course of the following year.

More information concerning:

- Construction Inventory
- Incorporation into your Sustainability Plan
- Sustainability Practice Strategies for Construction

can be found in AZA Green Guide, 2013, Volume II, p. 16 - 18.

Construction resources can be found in: AZA Green Guide, 2013, Volume II, p. 18.

Sustainable travel

For many zoos and aquaria, visitor travel may make up the largest part of their carbon footprint. Staff travel from commuting can also account for a large amount of carbon emissions. While the choice of how to travel ultimately lies with the visitor or staff member, zoos and aquaria can use a range of initiatives to encourage staff and visitors to travel more sustainably by writing a travel plan (BIAZA, 2021, p.11).

More information about how to approach sustainable travel in a zoo or aquarium can be found on: BIAZA, 2021, p. 11 – 16.

Sustainable Procurement

Procurement has an important part to play in delivering a sustainable future. By thinking carefully about the goods, services, works and utilities we buy, how we buy them, and who we buy them from, purchasing decisions can contribute to the achievement of sustainable development goals (BIAZA, 2021, p. 36).

General Purchasing Management can be found in AZA Green Guide, 2013, Volume I, p. 23.

1. The Green Team should assess the organization's collective bulk product usage amount over the past year by conducting a Purchasing Inventory.
2. The Purchasing Inventory should be conducted and updated on an annual basis and should:
    - Identify all bulk products (e.g. office, education, landscaping, food/catering, animal diet, custodial, gift shop supplies, etc.) your organization used onsite over the past 12 months.
    - Identify the ways in which purchasing practices incorporate sustainable products within different departments.
    - Stipulate the purchasing practices used for all bulk items, including quantity ordered and vendor information.
3. Results from the Purchasing Inventory should be used to determine if there are purchasing related sustainable practices strategies your organization can implement to replace products with more sustainable choices and increase purchasing efficiency and cost-effectiveness over the course of the following year.

More information concerning:

- Purchasing Inventory
- Incorporation into your Sustainability Plan
- Sustainable practice Strategies for Sustainable procurement

can be found in AZA Green Guide, 2013, Volume II, p. 28 - 29.

Purchasing Resources can be found in: AZA Green Guide, 2013, Volume II, p. 29 - 30.

Recommendations for practical considerations and first steps towards a sustainable procurement can be found on: BIAZA, 2021, p. 37 – 40.

Recommendation on which certifications prioritize in the areas of sustainability and ethical product can be found in: EAZA Guidelines for ethical and environmental policies for suppliers and contractors , 2017.

Specific EAZA recommendations on products can be found in the following:

- EAZA Guidelines on Palm Oil
- EAZA Guidelines on Meat and Soya
- EAZA Guidelines on Timber

More information on responsibly sourced palm oil can be found in WAZA - A Short Guide: Sourcing Sustainable Palm Oil at Your Zoo or Aquarium (available in English, Bahasa Indonesia, French, Japanese, Russian, Spanish) and from the WAZA Palm oil resources website.

More information on responsibly sourced forest products can be found in: WAZA - A Short Guide : How to choose responsibly sourced forest products at your zoo or aquarium, 2021 (available in English, French, Spanish, Russian) and in the WAZA Sustainability Webinar about Choosing Sustainable Forestry Products.

More information on how to reduce single-use plastic can be found in: WAZA – A Short Guide: How to reduce single-use plastic at your zoo or aquarium, 2020 (available in English, French, German, Japanese, Portuguese, Russian, Spanish, traditional Chinese) and in the WAZA Sustainability Webinar about Reducing the Use of Single-use Plastic.

EAZA Members are also encouraged to view Protecting our Planet – The WAZA Sustainability Strategy 2020-2030 for a range of additional information and related case studies. This document is available in: English, Bahasa Indonesia, Catalan, French, German, Italian, Japanese, Portuguese, Russian, Spanish, Traditional Chinese