

Towards a Hand Print Zoo and Aquarium

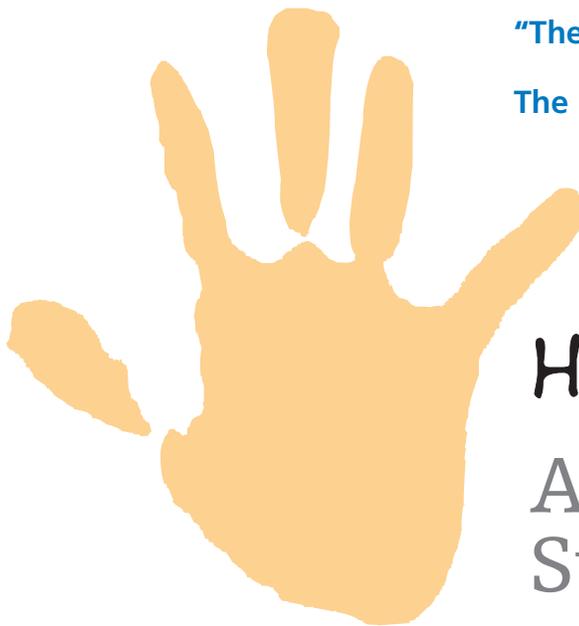
increase your Hand Print, decrease your footprint

by **Kartikeya V. Sarabhai** | Director | Centre for Environment Education | India and
Meena Nareshwar | Program Coordinator, Zoo Education and Interpretation Programs |
Centre for Environment Education | India

"The best one can get with a footprint is no impact at all.

The potential of a Hand Print is unlimited."

John Biemer



HAND PRINT™

Action Towards
Sustainability

In the 21st century, it is important to develop the educational role of zoos and aquariums so as to have an active, direct impact upon people's attitudes and behavior. In this way, awareness will be converted into action that has positive benefits for wildlife, people and conservation.

What is an Ecological Hand Print?

An ecological footprint describes the impact you have on the planet, both positive and negative. An ecological Hand Print represents only the positive impact. The ecological Hand Print is a person's contribution towards a sustainable future. It describes the good one has done for the world.

Today there is an urgent need to reduce our ecological footprints and a critical need to alter lifestyles and development models to ensure a sustainable future. Choices made now can shape opportunities for a better tomorrow and potentially change the lives of generations to come.

There is a definite need for positive action. The concept of a Hand Print is to decrease negative human footprints by taking more action towards education for sustainable development. According to the Hand Print concept, we need to shrink our ecological footprint so that it will have no negative impact on the environment. Plus, we need to start healing the planet, transforming our ecological footprints into ecological Hand Prints to increase the good we do for our world.

The Hand Print tool, developed by the Centre for Environmental Education (CEE), is an action and solution oriented tool designed for today's and tomorrow's leaders of sustainability. The Hand Print tool focuses on one's positive impact and options to improve the condition of life on our planet rather than on the damage done by human activity. Thus, the Hand Print aims at seeding optimism and motivation. The application will help to evaluate one's Hand Print including actions from daily behavior to global influence towards a sustainable future. The tool will also help improve one's Hand Print by suggesting actions and linking one to organizations offering additional advice and cooperative options.

The Hand Print concept was launched by CEE at the 4th International Environment Education Conference held at Ahmedabad, Gujarat, India in November 2007. The Conference was organized by the United Nations Educational, Scientific and Cultural Organization and the United Nations Environmental Programs in partnership with the Government of India.

The Hand Print tool, at its preliminary stage, analyses an individual's positive impact on three aspects of sustainability: environmental, societal and economical. Seven questions cover each aspect and are used to investigate the use of resources and awareness of sustainable investments. Additional questions concern personal, family/households, institutional, community, city, state, national and world levels of action. A person calculating his or her Hand Print collects more points for the personal sustainable level than actions on city, community, national or state level. The quantitative results will calculate an individual's action towards sustainability.

A comprehensive evaluation technique will be developed for the Hand Print tool, which will include evaluation of the Hand Print for individual, organizational, community and national levels at www.handsforchange.org/

The Hand Print for Zoos and Aquariums

Zoos in India are viewed as not exciting for adults, child-centric and a place for animal displays and inexpensive entertainment. This opinion must be altered through interesting programs and activities for all audience levels. Creative marketing and intriguing public relations strategies, concentrating on a park's conservation and education efforts, are needed to attract new visitors. A message of sustainable zoo and aquarium practices can make an impact on visitors' attitudes and mindsets about conservation.

Need for Strategy

Zoos and aquariums are universal, inspirational, educational and caring places to learn about wildlife and conservation. However, these places should also be about having fun! This thought goes hand-in-hand with a strategy that needs to include networking and information sharing with other organizations (for marketing and benchmarking) and increasing staff professionalism and communication skills through training. Zoos and aquariums can use the full range of media available and recognize that staff and volunteers need to be well informed so they can act as message bearers to visitors at their parks, in their homes and in their communities. Zoos and aquariums should strive to become environmentally sustainable in all their activities by evolving policies, management styles and use of resources. Facilities can celebrate and share these activities with park visitors and non-visitors alike.

CEE has proposed to weave sustainable actions generated by park programs as a Hand Print. The key publication used to promote sustainable action would be a Hand Print poster. Such a poster will highlight a variety of action messages identified in line with the overall sustainability strategy of the facility. The poster, along side human Hand Prints, will also include the "paw prints" of zoo or aquarium animals.

WANT TO MAKE A DIFFERENCE? HERE'S HOW!



The Earth provides enough to satisfy every man's need, but not for every man's greed"- Mahatma Gandhi

Save electricity—

Electricity produced in India is mainly generated from coal based power plants so unnecessary use of electricity would mean more CO₂ being emitted.

- Turn off lights, TV, computer when not in use.
- Computers on standby mode would consume less energy than when on. Although, each varies widely in the amount of energy they consume in the stand by and screensaver mode.
- Use Compact Fluorescent Lamps (CFLs) instead of incandescent bulbs.



Cut down on Car use---



More cars on the road would mean burning more fossil fuels, thus more GHGs. Take a bus whenever possible. Try to car pool. Walk or use a cycle whenever possible.

Use resources efficiently—

- Reduce, Reuse, Recycle.
- Reuse plastic bags. Reuse paper.
 - Recycle kitchen waste, it's the best compost material.
 - Reduce use of artificial light during the day.
 - Carry a cloth bag instead of plastic bags.

Buy food from local markets and buy in season—

Buy food from local vegetable vendors as no packing is required. The food does not need to be transported from long distances. Food not grown locally requires a lot of energy in transportation and packaging.

Buy wisely and become AWARE consumers---

Think about your needs and wants. Stick to what you actually need and not want. Everything you pick off shelves has a carbon footprint. Make sure you buy products that are more environment friendly and have less carbon footprint. Buy products specifying that they do not test on animals.

Plant Trees, Save Trees---

Trees are great for absorbing GHGs and Carbon Dioxide.

Become more aware of how your actions affect the environment and spread the word.



CEE
Centre for Environmental Education

Possible Hand Print poster themes:

- Waste reduction.
- Efficient energy use.
- Consuming local products.
- Encouraging public participation and awareness.
- Contributing to sustainable development and conservation.

Zoos and Aquariums for Sustainability

Zoos and aquariums can be important agents of change in creating a sustainable future and ensuring the conservation of species and habitats on a global scale. A zoo or aquarium's educational resources can be used to help people understand why changes are needed and what they can do personally to live in a more sustainable manner. Here are some topics and examples of how parks and people can achieve a more sustainable lifestyle:

Energy efficiency:

- Maximizing energy efficiency in all on-site and off-site operations.
- Reducing travel-related energy consumption.
- Efficiently maximize the use of energy which is produced and distributed, especially from renewable sources.
- Apply the three R's—reduce, reuse and recycle whenever possible.
- Conduct and maintain energy audits.

Environmentally sound waste management:

- Minimize total waste production.
- Manage separation of waste at source to encourage maximum re-use and recycling.
- Minimize the risk of polluting.

Using natural resources responsibly:

- Use products that embody the most efficient and least environmentally damaging use of renewable and non-renewable natural resources.
- Applies to major construction materials and daily consumables.
- Should apply back along the entire supply chain to the original source.
- Apply the three R's.
- Make sure that animal acquisitions and dispositions are not only sustainable environmentally but ethically as well.

Polluters should pay the cost:

- Support the principle that polluters should not pass on to others the cost of a clean-up.
- Apply this principle in your institution as a measure of good practice.
- Put local consumption first.
- Maximize the proportion of goods and services that come from local providers with acceptable environmental practices.
- Reduce the environmental impact of transportation when feasible.

Contribute to equitable, sustainable development:

- Conduct activities that contribute to a reduction in the differences of living conditions across the world.
- Support conservation projects that embody this principle by adjusting purchasing policies and company practices.
- Obtain and analyze as much information as possible before making a decision.
- When in doubt, put in place measures to reduce environmental impact.
- Use recycled and environment friendly materials in the construction of buildings.
- Set the example for other businesses through earth-friendly practices.

Encourage public awareness and participation of sustainable practices:

- Use educational resources to help people understand why changes are important and what they can do personally to live in a more sustainable manner.
- Set an example for other businesses in earth-friendly operations.
- Zoos and aquariums should embrace sustainable practices in every day operations.
- Demonstrate that use of sustainable resources can be convenient, fun, inexpensive and enriching.
- Conservation educators deliver sustainable actions with visitors to emphasize how we “walk the walk” when it comes to sustainable living.
- Facilities can live up to this “green” responsibility by substantially reducing their environmental footprint in the areas of waste, carbon emissions and energy consumption.
- All staff can be part of this endeavor and can inspire others to take action.

Train staff on choosing lifestyles that are low on consumerism:

- Set up model examples of recycling like compost pits.
- Display the amount of energy being used and saved and compare with levels of energy used in the past.
- Use educational resources to help people understand why changes are important and what they can do personally to live in a more sustainable manner.

Reduce energy use

- Use and promote fuel efficient vehicles.
- Reduce or replace use of fossil fuels (coal, oil, and natural gas) in facilities—this greatly reduces the amount of carbon dioxide released into the atmosphere, thereby reducing our “carbon footprint”.

Put “green” practices to work

- Develop an Environmental and Education policy and commitment to the international standard (ISO14001).
- Design animal enclosures that are not only animal-friendly but also eco-friendly.
- Design and develop all signs using environmentally-friendly materials and including messages.
- Use energy and water saving/efficiency devices in offices and animal enclosures.
- Recycle waste generated within the park, e.g. office paper, bottles, tins, organic waste from animals and restaurant, etc.
- Declare and maintain facility as a plastic free zone.

By reducing the amount of energy we use, changing the source of our energy and simultaneously removing CO₂ from the atmosphere through carbon sequestering, we can reduce the amount of CO₂ in the atmosphere and diminish its effects on ecosystems and wildlife around the world. Together, our collective efforts can make a big difference!

Going “Green”

Going green is about making choices in our daily lives that promote a healthy planet, from what we eat to what we wear to how we get from here to there. Going green is living sustainably so that future generations can enjoy the planet as well.

Centers that serve the public, such as the education departments found at most zoos and aquariums, are in a position to teach about sustainability to a large audience in meaningful ways. Through a combination of motivation and information, green facilities try to initiate changes in the behavior of people’s everyday lives. Green facilities lead by example and must explain to visitors their sustainable activities through park signage, educational programs and website information. The goal is that visitors will learn about sustainable practices at the facility and then be able to implement them at home.

CLIMATE CHANGE WILL AFFECT EVERY ASPECT OF LIFE

“The fluttering of a butterfly's wings can effect climate changes on the other side of the planet” -Paul Erlich

BIODIVERSITY- 30 out of 100 species are likely to go extinct. Climate change could kill more than a third of the world's plant and animal species by 2050.

Some have been already wiped out. The first victim was the Golden Toad.



WATER- Decreasing water availability. This will lead to irrigation problems and increasing droughts in areas like India, China, Australia, South America, Africa.



FOOD- Agriculture is dependent on water. Climate change will impact water more strongly decreasing the food availability. Cereal productivity will decrease in some regions.

HEALTH- Increasing rate of malnutrition and diarrhoeal and infectious diseases like malaria, cholera, bird flu. Increased number of deaths due to heat waves, floods and droughts.



COASTS- There will be more powerful floods and storms. A number of global wetlands could be lost. Ice caps are melting and as a result sea levels are also rising. The oceans will get warmer, its water will expand and sea level will rise. Places like Maldives, Bangladesh, Indonesia, Netherlands will need its large populations to be evacuated due to flooding or submersion of the entire islands.



There has been a rise of 0.4°C over the last 35 years. If the temperatures continue to rise at this rate then it is predicted that it will rise by about 1-3.5°C by 2100.

"Climate is what you expect, weather is what you get"



Climate tells us what its usually like in any place you live. Weather can change over a short time, it could be sunny for an hour and then it might rain.

Climate Change is something we have been hearing quite often lately!

Climate Change is natural. Earth's climate has been changing. Scientists say human beings that are responsible for this current change in climate.

Climate Change

Climate Change is due to global warming. How fast the Earth is warming is still not known, but there has been a considerate warming over the years. About 0.4°C of this warming occurred in the last 35 years.

Small variations in temperature could have big impacts. Every aspect of life on Earth will be affected directly or indirectly by this warming.



The Greenhouse Effect, what is that?

Greenhouse gases like carbon dioxide (CO₂), methane (CH₄), nitrogen oxide(N₂O) present in the atmosphere absorb some of the sunlight and trap the heat near the Earth's surface, so that the Earth is warm enough for life to exist; without this the earth would be freezing cold. This natural mechanism is known as the Greenhouse Effect and this causes global warming.

Green House Gases (GHGs)

- CO₂ Using fossil fuels, burning biomass
- CH₄ Rice fields, livestock
- N₂O Farming, industrial activities

Global Warming

As the quantity of GHGs increases in the atmosphere, more heat is retained on the Earth's surface resulting in the increase in the earth's average temperature. This phenomenon is known as Global Warming.

All of us contribute to global warming by sending out GHGs. Do you know when? *Whenever you...*



- Watch TV
- Use the Air Conditioner
- Turn on a Light
- Use a Hair Dryer
- Ride in a Car
- Play a Video Game
- Listen to a Stereo
- Wash or Dry Clothes
- Use a Dish Washer
- Microwave a Meal

If you picture the Earth as a soccer ball, the bulk of atmosphere would be no thicker than a sheet of paper wrapped around that ball. The amount of carbon dioxide we add to this thin layer is about 26000000000000 kg (26 billion metric tones per year)!

This would mean that each of us is adding more than 4000 kg (4 metric tones) per year to this shallow atmosphere!

Social Responsibility

“Zoos and aquariums can play a critical role in moving the communities they serve towards a more sustainable future. Aligning their missions and programs with sustainability principles... ..will recalibrate their own daily practices as well as awaken their community to the array of choices perhaps otherwise invisible to them” (Link, 2006).

In recent years, calls for zoos and aquariums to become sustainable institutions have come from within the field as a way to achieve social responsibility and civic engagement. Sustainability is an opportunity for proactive, thoughtful environmental work. Zoos and aquariums have been successful in increasing public awareness about climate change and the loss of biodiversity around the world. Unfortunately, increasing numbers of species are threatened by extinction and many habitats are being lost at an alarming rate. Not only are many species now more vulnerable, so may be our own way of life.

To promote sustainability, zoos and aquariums are in an exciting position to exhibit effective citizenship through recycling, renewable energy use, water and energy conservation and the purchase of earth-friendly foods and merchandise. Importantly, zoos and aquariums should share with the public their own work, in situ, and their efforts to save endangered wildlife.

There is a growing responsibility for zoos and aquariums to act as agents of conservation. A vital goal in this process is to provide as many educational opportunities for visitors as possible.

About CEE

India's Centre for Environmental Education is a national institution engaged in developing programs and material to increase environmental awareness and sustainable practices. CEE was established in 1984 as a Centre of Excellence in Environmental Education, supported by the Ministry of Environment and Forests (MoEF), Government of India. It is affiliated with the Nehru Foundation for Development.

CEE's primary objective is to improve public awareness and understanding of the environment with a view to promoting the conservation and sustainable use of nature and natural resources, leading to a better environment and a better quality of life. To this end, CEE develops innovative programs and educational materials and builds capacity in the field of Education for Sustainable Development (ESD). To test the validity and effectiveness of its programs and materials, CEE undertakes demonstration projects in education, communication and development that endorse attitudes, strategies and technologies which are environmentally sustainable. CEE is committed to ensuring that due recognition is given to the role of education in the promotion of sustainable development.

To learn more about CEE and our programs, please visit www.ceeindia.org

Author Contact: Meena Nareshwar |
meena.nareshwar@ceeindia.org

Centre for Environment Education, India
<http://www.handsforchange.org/>

Link, T. (2006). Models of Sustainability: Museums, Citizenship and Commonwealth. *Museums and Social Issue*, vol. 1, no. 2, Fall 2006, pp. 173-190.

National Zoo, Smithsonian institution, USA
nationalzoo.si.edu

World Association of Zoos and Aquariums
www.WAZA.org

REFERENCES