

Developing an ESD strategy for your garden

Who should be involved?

For a botanic garden to reflect the ethos of sustainability, it should endeavour to ensure that everyone working in the garden is involved – trustees, director, education and scientific staff, horticultural and gardening staff, administrators, cleaners and friends of the garden. This might not be practical at the outset, but it should be the aim of gardens to involve all staff in developing ESD programmes. ESD is a dynamic and inclusive process, the more people involved the greater the potential for sustainability.

Who are we educating?

When deciding on target audiences for an education programme, botanic gardens have a wide range of people and groups to choose from (see BGCI's environmental education guidelines, p7). However, most gardens have limited access to financial resources and will not be able to provide education programmes for everyone.

Also the number of learners in a group will impact on the type of educational approach used. One way of prioritising your educational agenda is to focus on an environmental issue/s relevant to the garden and a particular target group. In deciding on which target group to work with, the following questions need to be addressed:

- What environmental issues are relevant to the garden and particular target audiences?

- Which target group is willing and able to contribute towards finding and implementing a solution?
- Does the garden have the resources to develop an appropriate education programme for them?

By selecting target groups in this way, botanic gardens can become more focused in empowering groups to resolve environmental issues.

Hallmarks of Good Practice

Have clear objectives:

If you don't know what you're trying to achieve, why are you doing it?

Get the process right:

Successful educational experiences do not (usually) happen by chance; they are a result of thorough research, targeting, planning, execution and evaluation

Offer experiences that are relevant to your audience

Know your audience and start from where they are

Get the style right:

Develop activities that stimulate and are fun

Build in progression:

Have a clear idea of where you are taking your audience, ideally build in a progression which takes them from awareness, through understanding to action

Practise what you preach:

Make sure that the way you run your operation is compatible with the messages you are trying to put across

Offer access

Offer a range of opportunities that will engage different audiences

Look for support

Don't think you have to do it alone; build local networks, share ideas

Evaluate outcomes:

Consider how you will measure the success of your programmes against your intended outcomes

McLeish, 1997

Working in collaboration, ethnobotanists at the IB-UNAM Botanic Garden, Mexico, share their technical and botanical expertise while healers share their knowledge on the traditional and ritual use of plants. This type of partnership has enabled the botanic garden to make this knowledge available to other healers, housewives, professionals and alternative health practitioners in Mexico. Photo: Edelmira Linares, IB-UNAM Botanic Garden, Mexico





A craft school in Archangel, Russia, helps children reconnect with their own culture and the natural environment. Aged between 8 and 18, they come to classes after school, two or three times a week; it takes them three years to become a 'master' at their chosen craft. Once a 'master' they are encouraged to become a teacher themselves and share their skills with other children. The crafts, including basket weaving and wood carving, use local natural materials which the children harvest themselves.

Photo: Sarah Kneebone, BGCI

Sustainability – agreeing on the definition

For consistency in communication to the public, it is important that all staff work to the same definition of sustainability. Before a garden develops an ESD strategy, it is recommended that staff decide on their definition of sustainability. One way of doing this is through staff consultation – a nominated member of staff should coordinate a process whereby staff can express their opinions about sustainability. This might involve staff members meeting to discuss the meaning of sustainability and arriving with a consensus view or it may involve preparing a discussion paper with several definitions for staff to agree on. As a garden's work in sustainability evolves so will its definition. Gardens need to build in a mechanism by which staff can reflect critically on their meaning of sustainability and monitor the viability of their definition.

Botanic gardens are now including sustainability in their mission statements e.g.

Mission of the Eden Project, UK, is to:

'Promote the understanding and responsible management of the vital relationship between plants, people and resources, leading towards a sustainable future for all.'

Foundations of ESD

Research suggests there are four environmental education foundations for learning about biodiversity: the emotional foundation, the ecological foundation, the ethical foundation and the political foundation. As ESD is closely aligned to environmental education, this research can be considered highly relevant to the development of ESD programmes in botanic gardens. Although gardens will place different emphases on the different aspects of ESD, depending on their site, the learners, the educators or their available resources, all four foundations will need to be incorporated in their programmes for the education offered to be called ESD.

Four environmental education foundations for learning about biodiversity

- Emotional foundation: (re)connecting with nature through discovery and sensitisation, and experiencing biodiversity to create personal meaning.
- Ecological foundation: understanding relationships, functions and (global) interdependencies.
- Ethical foundation: dealing with values, taking a moral position, raising critical questions.
- Political foundation: dealing with controversial issues, making choices, developing action competence.

(Wals, 1999, p61)

Learning goals

The foundations above offer a framework within which to establish learning goals and concrete learning objectives. While it is very important to establish these goals, it is vital to remember that the learners themselves play a major part in determining what is actually learned. This is affected by their motivation, past knowledge, skills, attitudes, ideas, expectations, and so forth. Also impacting on a learning experience will be the quality of the garden educators, their support team and the resources available (both financial and physical) as well as external factors such as national curricula and government policy, for example.

The learning goals below are divided into knowledge, skills and ethics and values. Gardens should discuss what knowledge, skills and ethics they want to engender in the groups they work with. The following list, not in order of priority, is intended to help gardens with this discussion.

Knowledge

It is important for individuals to understand the fundamental issues which inform the sustainability debate, namely that:

- The Earth has finite resources.
- The role of the Earth's elements in supporting ecosystems and organisms.
- The nature of ecosystems and biomes.
- When a certain species becomes extinct, a part of the ecosystem also vanishes.
- The importance of plants for sustaining all life on Earth.
- The dependence of humans on plants and the environment.
- The impact of humans on plants and the environment and the consequences of the choices we make, for example with production, consumption, transportation, heating and cooling.
- There is no objective way to achieve sustainability
- The role of science and technology in the development of societies.
- The process of urbanisation and de-ruralisation.
- Whether and how politics, economics, the environment and social issues interconnect.
- The process of resource distribution and use in determining the nature of societies.
- The role of botanic gardens in implementing national strategies and international conventions for biodiversity conservation.
- Processes of planning, policy-making and action for sustainability by governments, businesses, non-governmental organisations and the general public.

Skills

Based on an understanding of the fundamental questions of sustainability, it is important for individuals to develop appropriate skills to:

- Work with different tools (e.g. gardening equipment, magnifying glasses, microscopes).
- Work with plants (e.g. planting, tending, propagating, harvesting).
- Seek out information from a variety of sources.



Children mounting herbarium specimens as part of the Encounters with Naturalists project. This project enabled students in Australia and France to re-enact the scientific collecting work of the first French and English expeditions to South Australia. Students followed in the footsteps of the first European naturalists through plant hunting, seed collection,

botanical illustration and mounting herbarium specimens. By having a 'real' context for their work and working alongside contemporary botanists and artists students were able to more meaningfully explore their local plant biodiversity and its conservation. The joint project was between the Botanic Gardens of Adelaide, Australia and the Botanique de la Villa Thuret Botanic Gardens, France. Photo: Botanic Gardens of Adelaide, Australia

- Frame appropriate questions to guide relevant study and research.
- Define fundamental concepts e.g. environment.
- Assess the nature of bias and evaluate different points of view.
- Develop hypotheses based on balanced information, critical analysis and careful synthesis and test them against new information and personal experience and beliefs.
- Communicate information and view points effectively.
- Work towards negotiated consensus and co-operative resolution of conflict.
- Envision sustainable futures and develop strategies for implementing them.

Ethics and Values

An ethical perspective creates a context in which knowledge and skill acquisition may be located to gain:

- An appreciation of the resilience, fragility and beauty of plants and the interdependence of all life forms.

- An awareness of the dependence of human life on plants and other finite resources.
- An appreciation of the role of human ingenuity and individual creativity in ensuring survival and the search for appropriate and sustainable progress.
- An appreciation of the power of human beings to modify the environment.
- A sense of self-worth and belonging in one's own culture and community.
- A respect for those elements of other cultures that contribute to sustainability and a recognition of the interdependence of the human community.
- A concern for inequalities and injustices, a commitment to human rights and social justice and to the peaceful resolution of conflict.
- A personal acceptance of a sustainable lifestyle and a commitment to participation in change.
- A sense of hope and a positive personal and social perspective on the future.

Adapted from Fien et al, 1996

The above list is not rigid. Knowledge, skills and ethics continuously change and staff in botanic gardens need to constantly reassess what it is that they want their visitors and students to learn, taking into account new factors, events and issues affecting the sustainable development debate.

Educational approaches

There is no single way to teach ESD. Taking into account the foundations of ESD and the learning goals, a number of different educational approaches can be used. Specifically they would include:

Experiential and cooperative learning

Many botanic gardens already use this approach in their education programmes. Activities are designed for learners to engage actively in sensory, cooperative and empathetic learning about the environment. The aim of this approach is to instil a sense of wonder and appreciation for the natural world. In particular this approach:

- Helps learners re-connect with the environment.
- Increases learner motivation. Learners are encouraged to set their own hypotheses and find answers for themselves.
- Encourages learners to make connections between and within disciplines through constructing their own reality (an important component of ESD).
- Develops communication skills – learners work in small groups discussing, negotiating, listening and formulating arguments.

'The School in the Forest' programme at the Gurukula Botanical Sanctuary, India, works with schools, individuals and non-governmental organisations at local, regional, national and international levels. The programme aims to bring about a shift in attitude and alliance within human society with respect to the natural world. Children are exposed to nature and natural history through forest exploration, enquiry, community life, solitude and reflection. Encouraging participants in the programme to use their bodies and senses to experience their visit is a central tenet of the programme. Photo: Suprabha Seshan, GBS, India





Youngsters (aged 8-11) are constructing bird boxes during one of the Green Workshops held at the Conservatory and Botanic Garden of the City of Geneva, Switzerland. The workshops are intended to encourage young people to discover the world of biodiversity. They cover a wide range of topics, including: how to make a herbarium, how to prepare a shelter for insects, cooking with plants that smell good and growing endangered plants. The workshops are delivered by garden professionals and members of the University for the Third Age (UNI3) who like to share their knowledge and joy of living with young people. Photo: Conservatory and Botanic Garden of the City of Geneva, Switzerland.

Examples of activities include, sensory trails, bark rubbing, pond dipping, discovery carts, etc. Earth Education is also an approach that involves experiential learning. The Institute for Earth Education designs and develops educational programmes that focus primarily on understanding basic ecological systems. Programmes look at what these systems mean for people in their own lives and what people must do to begin living more lightly on the Earth (van Matre, 1990).

Role play

Role play involves inviting learners to act out a scenario containing two or more different viewpoints. Role play is a powerful educational tool and can be used to develop skills, enrich emotional awareness (attitudes) and improve understanding of particular situations (knowledge). Learners hold on to beliefs until they are challenged, either by others, by the situations they confront or their own critical attitude. When learners are encouraged to take the position of someone else who is critical of their beliefs they are able to examine them. Once challenged learners either, discard these beliefs and take on new ones, alter

them and combine them with new elements or keep them because they withstand the challenge. With the support of a moderator and peers, role play provides a relatively safe space for learners to rehearse their negotiation and decision making skills.

Pointers for successful role play:

- Be clear about what you want learners to get out of the role playing experience.
- Role playing briefs should contain enough information for both parties to engage in a believable and relevant scenario. Give as much detail as is necessary - too little and there won't be enough to sustain a conversation, too much and learners will be swamped with information.
- Make sure there is adequate preparation time. Learners can be encouraged to share what they are trying to achieve with observers, so it becomes a shared, facilitative exercise rather than a 'performance' - this will also defuse fear and tension.
- Offer learners the option to pause when they feel they are getting into difficulty.
- Allow other learners to observe the role play and give their comments afterwards. Observers can be very beneficial to learning.

- For the observers, explain clearly what you want them to look out for. Role play feedback should not contain subjective judgements or comments based on personal knowledge or assumptions. Feedback should be meaningful and specific - something that the learner can act on.

Gardens could develop role play scenarios to examine a range of sustainable issues, such as food sustainability, habitat loss and plant trade. For example a scene could be set up to examine the unsustainable collection of medicinal plants, with background information provided on the potentially conflicting roles of plant collectors, market sellers, business people and a pharmaceutical company.

Participatory action research

This approach aims to improve social situations through a spiral of planning, researching, action and reflection (Ellion, 1991). Any theories or hypotheses developed are validated through practice, rather than being validated independently and then applied to practice. This approach encourages:

- Motivation - participants are keen to find solutions to particular issues.
- Critical thinking - participants are encouraged to discover and critically evaluate a broad range of information.



Kirstenbosch National Botanical Garden, South Africa inspires and enables people from all walks of life to take responsibility for their environment. The garden has received funding from the government's Department of Environmental Affairs and Tourism as part of the Greening of the Nation project to 'green' schools and communities on the Cape Flats. The project includes horticultural training and the development of skills such as critical thinking, problem solving and interpersonal skills. Photos: Donovan Fullard, SANBI, South Africa

Chicago Botanic Garden, USA, has a long tradition of supporting community and school gardens. The Green Youth Farm programme serves African American and Latino communities that have low income rates and significant high school drop out rates. By providing hands on experiences in urban horticulture, the programme has created a new awareness among students about the use of physical space and activity within their community as well as the possibilities for personal achievement. In turn the Green Youth Farm students have energized and inspired adults and institutions and captivated the imagination of media, politicians and philanthropists. Photo: Chicago Botanic Garden, USA



- Collaboration - participants should work together to resolve a situation.
- Communication skills -- listening, discussing and negotiating.
- Effective decision making - reviewing the consequences of their actions enables participants to make better decisions about a particular course of action.
- Resourcefulness – participants need to think laterally to search out information.

The basic cycle of activities in participatory action research involves:

- *identifying a general idea* – that is, identifying a situation to be resolved or improved.
- *reconnaissance* – describing the facts of the situation, explaining the reasons for them, critically analysing them and generating a hypothesis.
- *general planning* – a statement of the situation; a list of factors one hopes to change or modify to improve the situation; a statement of negotiations to be conducted before undertaking the proposed course of action; a list of resources needed; a description of an ethical framework which has been discussed and agreed with the relevant persons.
- *developing the first action step* – a decision should be taken on how the process of implementation and its effects are going to be monitored.

- *implementing the first action step.*
- *monitoring and evaluating the action step* – there are many techniques and methods that can be used to monitor action research, e.g. diaries, document analysis, photographs, tape and video recordings, using an outside observer to work-shadow and carry out interviews, questionnaires, etc.
- *revising the general idea.*

From this basic cycle participants in the action research then spiral into developing the second action step, implementation, evaluation, revising the general idea, developing the third action step, implementation, evaluation and so on. Action research is an ideal approach for those gardens working with local communities to resolve real-life situations such as the over-harvesting of wild plants or the lack of fuel wood for cooking.

Values clarification

This approach encourages learners to clarify their views on particular issues. Firstly by expressing them, secondly by discussing them with people who hold different views and thirdly by re-evaluating them. This approach encourages:

- Critical thinking – weighing up different information
- Motivation – learners are keen to learn about the different views that are held

- Communication – learners articulate their view points and are called on to clarify points

Incorporating values clarification into an activity

The following format can be used to encourage visitors to clarify their values on a particular issue.

- Positioning two sheets of paper at opposite ends of the workshop space. Each sheet could have marked on it a statement that illustrates an opposing view of an environmental or development issue, e.g. Selected harvesting of wild plants versus absolute conservation.
- Participants are then asked to position themselves along a continuum between the two sheets of paper according to their view on the issue.
- Participants discuss the reasons why they have positioned themselves in such a way.
- Participants at opposite ends of the continuum are asked to justify their choices.
- Participants are given an opportunity to reposition themselves based on the discussion.

Gardens could use this approach with visiting school groups and adapt it for the visiting public. An interpretative sign for example could include questions in the text that ask visitors to position themselves according to their views about a particular subject. Information could then be provided, either on the sign or in the form of leaflets, offering differing views. Gardens could also hold seminars where they invite people to speak on differing sides of an issue.

Self-directed learning.

In this approach the educator is seen as a resource person, rather than a font of knowledge. The educator works collaboratively with the learners, encouraging them to make connections between and within disciplines and enabling them to develop meaningful projects. This type of approach is particularly effective when the garden has an on-going relationship with the learners; for example school children carrying out projects. In particular it encourages:

- Independence – participants are responsible for their own learning.
- Research skills – participants are encouraged to find out and evaluate information from a wide number of sources.
- Critical thinking - participants need to weigh up information and make decisions.
- Holistic thinking - participants make their own connections between and within disciplines.

Futures education

This approach involves working with learners to envisage a sustainable future by exploring their expectations and aspirations. While all education is for the future, very little time is spent studying it. Looking at, for example: Where are we going? Where do we want to go? What are our hopes and dreams for the future? What can we do now to help create a more sustainable future? Futures education is a powerful tool for:

- increasing learner motivation - images of desirable goals can affect behaviour in the present.
- encouraging critical thinking - weighing up information and identifying trends.
- clarifying values - identifying values to make informed choices.
- effective decision making - looking at the consequences of one's action on others leads to more thoughtful decision making.
- encouraging creative imagination – through designing alternative futures.

Exploring alternative futures

A useful initial framework for exploring alternative futures is the distinction between probable and preferable futures. An activity focused on plants might take on the following format:

- Learners work in pairs to draw two timelines – one probable and one preferable. They mark on the probable timelines what they *expect* to happen with for example, food crops within the next hundred years and mark on their preferable timeline the events and trends they *would like* to see happen with food crops within the next hundred years.



Green Fingers and Healing Hands is a promenade performance held at the University of Oxford Botanic Garden, UK. Aimed at primary schools and family groups, the performance explores the need to conserve plants and use them sustainably. Actors take on the role of the garden's first curator, Jacob Bobart (1642), and a 21st century scientist. During the performance the characters meet and exchange notes on how plants are used in our lives. Photo: Louise Allen, University of Oxford Botanic Garden, UK

Gardens could use this approach to run 'future' sessions with the visiting public and then as a follow up produce an exhibition on preferable futures. A future's trail could also be developed which would engage visitors in finding out about the potential future use of crop plants.

Using themes to communicate messages

Gardens can also raise awareness about sustainability through interpretation using a range of media including signs, displays, talks, drama, brochures and electronic media. Working within a theme

is a useful way to ensure that visitors are provided with a meaningful context and specific information. A theme can help provide focus and purpose, making it easier for people to understand what a garden is trying to communicate.

Writing a theme

1 Select your general topic (e.g. botany, ethnobotany, biodiversity, fair trade, medicinal plants). Complete the following sentence: 'Generally my education programme is about'

ETHNOBOTANY

2 State your learning goal. Complete the following sentence 'Specifically I want my audience to'

GAIN AN APPRECIATION OF THE DEPENDENCE OF HUMAN LIFE ON PLANTS AND RESOURCES OF A FINITE PLANET

3 Express your theme. Complete the following sentence 'At the end of my education programme I want my audience to understand that':

RAINFOREST PLANTS HAVE THE POTENTIAL TO CURE MODERN ILLNESSES

(Adapted from Ham, 1992)

- Completed timelines can be displayed and the whole group given an opportunity to study them, learners could also report back on their probable and preferable futures.
- A whole group discussion could then focus on questions such as:
 - What are the main similarities/differences on probable and preferable futures?
 - What are the differences between the two?
 - What action is needed to bring about their preferable futures?
 - What organisations are already working towards such futures?

(adapted from Hicks, 1994)

Preferable future

Probable future



Interesting, concise text, relevant images help create clear messages on interpretation panels. Panels are a useful way of communicating the need for sustainability to garden visitors. This example, from the Royal Botanic Gardens, Kew, uses several layers of information to reach different audiences. Photo: Sarah Kneebone, BGCI

Plants touch almost all areas of our lives and so the number of themes a garden could choose from is infinite. The following themes are offered as ideas for gardens developing ESD programmes:

- **Topic: Water,**

Learning goal: Understand the role of water in supporting ecosystems and organisms,

Theme: Home gardens can be carefully planted so as not to rely on water.

- **Topic: Ethnobotany.**

Learning goal: Realise the importance of plants in creating sustainable lifestyles and the need to participate in change.
Theme: Daily choices involving plants can contribute towards sustainable living.

- **Topic: Biodiversity.**

Learning goal: Appreciate the nature of ecosystems and biomes.

Theme: Biodiversity encompasses all species of plants, animals and micro organisms and the ecosystems and ecological processes of which they are part.

- **Topic: Fair trade.**

Learning goal: Appreciate the dependence of human life on plants and resources of a finite planet and develop a concern for inequalities and injustices between humans. *Theme:* The choices we make while shopping have far reaching consequences.

- **Topic: Tourism.**

Learning goal: Gain an appreciation of the power of human beings to modify the environment.

Theme: Carrying seeds and other plant material from one country to another may put the environment at risk.

- **Topic: Habitats.**

Learning goal: Understand the nature of ecosystems and biomes.

Theme: Native animals rely on our backyards as habitats.

- **Topic: Edible plants.**

Learning goal: Appreciate the power of human beings to modify the environment.

Theme: Tins of tomatoes don't grow on trees!

Educational resources

Many gardens produce educational resources to complement their education programmes. These include teaching packs, information sheets, videos, computer games, web sites etc. When developing resources for ESD programmes though, gardens need to ensure that from content through to production, they reflect the principles of sustainability. If not, the garden's message is in danger of being contradictory and lacking in coherence.

The following ten principles provide a framework for gardens developing resources for ESD programmes. Not all principles however will be applicable to all resources, and gardens should be flexible in their approach. The intention of the principles is to focus gardens on matters relevant to sustainability in terms of both the production process and content.

Ten Principles of Good Practice

Content

Principle 1: Principles of sustainable development

- Resources should foster understanding of the principles of sustainable development and the aims and significance of Agenda 21

Principle 2: Integrity

- Information and data provided should be accurate, current and verifiable

Principle 3: Balance

- Resources should accurately reflect the broad range of informed opinion on the subject.

Principle 4: Values and attitudes

- Resources should help people to explore values and develop responsible attitudes in relation to their fellow citizens and the environment, from local to global level.

Principle 5: Knowledge and skills

- In addressing environmental and development issues, resources should help develop the knowledge, skills and competencies to enable people to participate effectively in their resolution

Principle 6: User-centred approach

- Resources should be easy to use and appropriate for the intended audience

Process

Principle 7: Need

- Producers should be able to demonstrate an identified need for the proposed resource

Principle 8: Development

- Producers should ensure that the development of the resource is inclusive, participative and has drawn on appropriate educational expertise

Principle 9: Production

- Producers should demonstrate that the production process has followed best sustainable practice wherever possible

Principle 10: Promotion and distribution

- Producers should consider the implications of promotion and distribution from the outset and ensure that they are effective, appropriate and accessible.

Council for Environmental Education, 1999.

Gardens also buy or borrow resources as well as producing them. These principles can be used to help ensure that the resources selected have been developed and produced in ways that follow sustainable principles.

Evaluation

By employing a range of evaluation techniques, educators may reflect on and develop a greater understanding of their current practices. Evaluation is either summative or formative. Summative evaluation is designed to report on – or sum up – the achievements at the end of a process or programme whereas formative evaluation is used to judge and comment on a process or programme while it is in progress, helping to form its future shape. To ensure that evaluation is relevant and effective gardens need to determine its purpose and implementation. What is the aim of evaluation? What should be evaluated? Who should be doing the evaluation and for whom? Will participants of programmes, for example, be involved in deciding on evaluation criteria?

There are a number of evaluation techniques and methods a botanic garden could use. These include:

- **Questionnaires** – using open and closed questions.
- **Diaries** – containing observations, interpretations, reflections, hypotheses, explanations, anecdotes, conversations, etc. as well as facts.
- **Interviews** – structured (pre-set questions), semi-structured (pre-set questions but allowing interviewee to digress and raise their own topics) or unstructured (initiative for raising the relevant topics and issues is left to the interviewee). Interviews may be conducted by educators, but, to ensure impartiality, it is better to use someone outside the garden.
- **Outside observer** – this person needs to be well briefed in order to collect and document the relevant sort of information.
- **Photographs** – these can capture the visual aspects of a programme, for example, how learners are involved in a programme, the layout of the workshop, the pattern of social organisation (eg. whether students are working in groups or individually). Photographs are best taken by an outside person.
- **Tape/video recordings** – these forms of evaluation can be distracting, although tapes less so. However if used regularly students become accustomed to them and cease to take any notice. Transcribing of tapes is very useful, albeit immensely time consuming.

“ We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect. ”

(Fritjof Capra, 1996)

Belo Horizonte Zoo and Botanic Foundation, Brazil, considers its role in education as extremely important in forming individuals who recognize themselves as an important piece of the global ecological jigsaw. The Foundation interacts with its visitors in different ways, for example signage, educational activities, plays, talks and exhibitions. Here, young children are expressing themselves through art, visually representing what they have learnt during their visit. Photo: Belo Horizonte Zoo and Botanic Garden Foundation, Brazil



- **Artwork** – children and adults can be asked to illustrate their thoughts and feelings about the education programme or a particular subject through drawings, paintings and sculptures.
- **Quizzes** – evaluation can be made into a game with children participating in quizzes.

Evaluation is an integral part of any education programme and critical to the success of ESD. The task of evaluation must be included in the job description of all educators and a budget set aside to enable them to gather information and process it. By doing so, educators will markedly improve the quality of their current practices.