

Deliverable Number 10:

Development of Traditional Environmental SD Impact

Project Funding



RTD Partners



University of Brighton



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Development of Traditional Environmental SD Impact

This document briefly outlines traditional environmental sustainable development indicators and management tools relevant to ground projects studied by the ESDinds project in the first phase of field testing. This work was done as a complementary activity while field testing values-based indicators, to assist socially focussed projects involved in ESDinds to improve their environmental impact as well as facilitate a tentative understanding of the link between values-based and environmental indicators.

Each of the five projects involved in field testing the values-based indicators as well as their parent CSOs, have been provided with the present report, including a list of suggested resources for measuring and managing their environmental impact (see Appendix 1). These suggested resources were drawn from tools developed or used by ESDinds CSO partners, and through research carried out by the University of Brighton. The field projects - in partnership with the researchers - were asked to describe the ways in which they already manage their environmental impact, and to look at possible ways to improve the environmental sustainability of their everyday activities. Over the remainder of the ESDinds project the Consortium will consider how these project level environmental indicators may integrate with the values-based indicators being developed. The suggested resources (Appendix 1) will also be provided to projects in the second phase of field testing (to be completed between June and October 2010), and to any additional organisations who join later phases of the project, so that they may use them alongside the values-based indicators developed as the core work of the ESDinds project.

This report outlines a discussion between research institutions and CSO partners on the integration of environmental and ecological themes within the values indicators developed as the main strand of the ESDinds projects. This is followed by a description of the ways in which field projects visited currently manage their environmental impacts, suggested approaches that they may use in the future and how they might integrate traditional environmental impact indicators with values-based ones.

Integrating environmental and values indicators

Discussion with researchers and partner CSOs

During the ESDinds project second general meeting, Consortium members reflected on the fact that most of the indicators developed for Set 1 focussed exclusively on human relations and interpersonal interactions, excluding how individuals or groups might relate to other forms of life. This led to a detailed discussion on the relationship between traditional environmental indicators and the values indicators being developed.

Research partners and the project's independent consultant outlined the part that traditional environmental indicators could play with regards to the impact on 'the community of life' and, together with the CSO partners, agreed that the tools already available can provide detailed information on quantitative environmental impacts and help organisations and projects make improvements. However, Consortium members thought that it is essential understand and evaluate the relationship between humans and other forms of life as well as the values that drive such actions. Thus, a common decision was taken to include environmental dimensions in the development of values indicators, and that this would not replicated what is available in terms of traditional environmental impact evaluation but complement and enrich it.

CSO partners also felt that integrating environmental dimensions into values indicators would provide tools to acknowledge the cultural, social and faith contexts in which pro-environmental actions take place and understand how these might differ accordingly. Finally, the CSO partners agreed that the link would best be made with the human values of respect, care and integrity.

Environmental indicators at the project level: first field visits

1. People's Theater Youth Year of Service- Germany

Description of the organisation and its work:

People's Theater is a non-profit organisation, which uses drama workshops to help school children explore social responsibility. Field work with People's Theatre (PT) will focus on the 'Youth Year of Service'. This is an important part of the PT's approach, where 10-15 youth aged 18 to 25 who wish to do voluntarily service for one year come together, work fulltime for PT, and live together in several flats. These youth carry out and develop between 500 and 800 theatre based performances in schools in and around Offenbach. The Performances aim at helping pupils become aware of actions and their consequences and aim to prevent violence and assist in the development of moral and ethical values. The performing youth themselves undergo a big change in their attitude in the course of their year and develop into strong resources for promoting positive change within themselves and the society around them.

Description of the environmental impacts that the organisation already measures and/or manages, and the tools they use:

Peoples's Theater does not focus its activities around pro-environmental behaviour; however, all aspects of life at PT include environmental awareness. The youth are informed and educated on the potential environmental impacts of different aspects of their life (food, transport, use of resources etc.) to both increase ecological awareness and economic responsibility.

The organisation has several basic management tools for monitoring and mitigating their environmental impact although no specific system to carry out a detailed analysis. PT monitors waste and recycling, energy, transport and water usage but not purchasing or catering.

Category	Monitoring or management tools
Waste and Recycling	Waste volume monitored by counting the number of waste bins used. Sorting paper, glass aluminium and plastic for separate disposal – separate disposal is carried out by PT as building management does not support it. Old electronic equipment from offices and homes are disposed of at local household waste recycling sites
Energy	Detailed meter readings are taken for PT youth housing Heating is highly controlled by temperature regulation, fast ventilation. Light intensity is controlled
Transport	Fuel consumption and mileage are recorded for the organisation's car. The organisation tries to use all vehicles at their full capacity
Water	Water meters enable monitoring of water use for the youth houses. All rooms are equipped with shower facilities (not baths) for efficiency.

New tools that the organisation may utilise to measure environmental impacts, and how these environmental indicators may connect with values-based indicators trialled in the field:

PT did not identify specific environmental impact measurement tools during the first field phase but is taking suggestions offered by the researchers on board and hopes to think more in detail about these during the next research phase. Discussion between PT staff and researchers also led to the desire to include environmental dimensions to values indicators in future field visits as well as trial the indicators for 'respect and care for the community of life'.

PT staff and researchers then collectively reflected on the link between environmental indicators and values-based ones tested during the field visit. A great number of the value-based indicators used for the fieldwork were process-oriented, e.g. decision making or goal achievement, and the group thought these processes are likely to be connected to as well as facilitate certain pro-environmental activities and behaviours within the organisation (such as low energy and water consumption, waste sorting or effective heating).

In the future, some aspects of environmental awareness among the youth could be captured quite effectively with the structured non participative observation and self assessment techniques used in the field visits. In this case, the observation or self assessment, connected to defined values indicators in the field visit, would focus specifically on environmental aspects of the organisation. For example, if the youths' goal is defined as 'finding the most effective way to manage water in the organisation', the item "he/she helps, in cooperation with others, to achieve the set goal" in the self assessment sheet would provide valuable information both about water saving behaviours as well as the value – here unity in diversity – that will help achieve the related goal.

2. Echeri Consultores, Michoacan, ECI Initiative – Mexico

Description of the organisation and its work:

Echeri Consultores is a small community development organization based in Lake Patzcuaro's water basin, in Michoacan, Mexico, with a primary focus on environmental education based on the Earth Charter. Echeri supports a range of activities and the field visits encompassed two main strands of their work: engaging 15 local schools in the Purepecha indigenous communities and the Juatarhu group. Using the arts as a primary medium, the two projects empower indigenous Purepecha youth from Michoacan, Mexico, to connect with and preserve their environment, and connect others to that mission, through direct exposure to the land, getting to know the forest ecosystem, reforestation brigades, murals, concerts, graphic novels, interviews, researching local legends, festivals and more. The organisation collaborates closely with other NGOs, social enterprises as well as local and national government.

Description of the environmental impacts that the organisation already measures and/or manages, and the tools they use:

Echeri is deeply committed to environmentally sustainable action and responsible consumer behaviour and as a result uses strategic environmental management systems at the organisational level and systematically implements locally designed and tailored management systems within their various projects.

Internally, Echeri regularly uses ecological footprint calculators, carbon emission calculators, waste management planning - from consumption to final use - and the ICA water quality indicator (measuring phosphates, nitrogen and non-solid waste levels in water).

Expenditure is also systematically used as simple but useful indicator of consumption and impact across all areas. Echeri generates yearly comparisons of monthly expenditure on water, energy, transport, consumables, etc., and aims to maintain or diminish expenditure in all areas every year. If expenditure rises beyond inflation, it is understood that consumption has increased, as well as negative environmental impact, and vice versa. This measure works both as an analytical tool and a planning and budgeting tool. For instance, the yearly budget for purchasing paper must last at least the year; if expenditure lasts beyond a year this indicates a reduction in consumption and thus in the related environmental impact.

The overall environmental impact of the organization is also numerically measured in terms of the environmental awareness generated by Echeri; this is measured by the number of children who have received environmental education through the arts categorised by school, age, and by geographical area, and the number of children and youth who have participated in reforestation campaigns, etc.

In addition to the general environmental management practices described above, Echeri also uses specific environmental management and evaluation tools that the organisation itself has developed. Echeri designed the official Plan for Solid Waste Management for three municipalities in rural Mexico, and published a *Rural Handbook of Good Practice in the Use and Management of Environmental Resources at Home and in the Community*, integrating values (in the Earth Charter framework) with five areas of environmental action:

- Solid waste
- Domestic orchards
- Medicinal herbs garden
- Wood-saving stove
- Use and management of water and electricity

Echeri also published, in collaboration with the Mexican Water Technology Institute the *Handbook for the Transference of Appropriate Water Technologies in Rural and Socially Excluded Zones*, considered a good practice example at Latin American level, used in the 1000 most highly marginalised communities in Mexico.

A final aspect of Echeri’s environmental management system is a careful adaptation of tools and responsible management practices to local contexts. Examples of responsible practice within different projects and locations include: the re-use of paper and using waste paper for art projects such as making papier-mâché lamps; using buckets instead of showers or baths, 15-20 litres per person; unplugging all electrical appliances at night; never driving faster than 56mph; trying to use vehicles to their full capacity; having a household tree-nursery; never purchasing anything which comes in three separate packages; giving almost exclusive preference to recycled and recyclable materials; caring and cleaning the local water spring or carrying out biodiversity protection campaigns at different scales.

Category	Monitoring or management tools
General	Environmental management system (see examples of responsible behaviour above)
Waste and Recycling	Waste management planning - from consumption to final use
Energy	Carbon emission calculators
Biodiversity	<p>Systematic yearly counting of total trees planted and hectares reforested. Survival rates of the seeds and planted trees are recorded.</p> <p>The data is then mapped with Geographical Information Systems (GIS), using a technique the organisation calls “water basin vision”. Echeri compares the incidence of fires, the levels of soil humidity and soil erosion and the extraction rates of flora and fauna in targeted areas, before and after reforestation campaigns.</p>
Water	<p>Use of Handbook for the Transference of Appropriate Water Technologies in Rural and Socially Excluded Zones.</p> <p>ICA water quality indicator (measuring phosphates, nitrogen and non-solid waste levels in water).</p>

New tools that the organisation may utilise to measure environmental impacts, and how these environmental indicators may connect with values-based indicators trialled in the field:

Following the semi-structured interview to establish the existing environmental indicators used by Echeri at the project level, the organisation’s coordinator, Cardielia Amezcua Luna, requested and was provided with further information on suitable tools to measure Echeri’s environmental impact in the areas of waste, energy, transport, biodiversity, water, and purchasing and catering.

Echeri was particularly interested in gaining further information on the IEF guide for monitoring forests and coral reefs, the IEF Rural Environmental Management Manual and the ISO 14000/14001 global standard for environmental management. In addition and as a complement to these comments, environmental and energy experts based in the Waste and Energy Research Group at the University of Brighton exchanged relevant information and expertise with the project coordinator.

As seen above, Echeri already has extensive environmental management systems, applied within the organisation and the projects it coordinates. Values are consciously at the heart of Echeri's activities; the organisation's value framework, inspired and guided by the Earth Charter, is systemically embedded into its environmental initiatives – from the environmental education programme to biodiversity initiatives.

Work done through the ESDinds project field visit enriched Echeri's existing environmental tools and impact indicators as it enabled the organisation to measure not only the quantitative but also the qualitative aspects of its educational impacts in relation to the retention of the technical, environmental, and value education provided to its core youth group (Juatarhu). The values of Unity in Diversity and Respect/Care (with emphasis on the community of life) gave important insight to understand the link between technical and pedagogical considerations used at the project level as well as the emotional impacts of reforestation on young people.

During the field visit, several value indicators related to traditional environmental impact were successfully evaluated. Indicators for which Echeri received positive to excellent results are outlined below.

Indicator identifier	Description
3039	Long term commitments to protect the environment are created and adhered to. (SBH6d)
3048	Education is undertaken to raise awareness and capabilities for the organisation to act according to principles of environmental sustainability (SBH6m)
3053	Entity feels compelled to protect environment and do not wait for governments or other to take action prior to acting themselves. (SBH6r)
3056	Quality of process and results of activities or projects aiming to achieve or promote environmental sustainability (H7)
3058	Activities initiated and completed in the conscious aim of contributing to a greater respect for nature (SBH7b)
3059	Activities initiated and completed in the conscious aim of contributing to a greater understanding and respect of how nature is organized (systems and cycles) (SBH7c)
3060	Activities initiated and completed in the conscious aim of contributing to a greater valuing of the natural world as a source of personal fulfilment (SBH7d)
3063	Activities initiated and completed that share with others how to protect and restore the Earth's health (SBH7g)
3072	The project's activities / events have an emotional effect on participants (Applies to both H7 and H8)

3. University of Guanajuato ECI initiative – Mexico

Description of the organisation and its work:

The Environmental Institutional Programme of Guanajuato University (PIMAUG) is a cross-faculty initiative structured around 6 strategic areas: (a) assisting students to develop a holistic vision of the environment; (b) promoting sustainable resource use and waste management; (c) diffusion of a culture of environmental awareness, through a variety of media; (d) interdisciplinary research; (e) training in environmental issues through diplomas and Masters programmes; and (f) social participation and inter-institutional partnership. The work of PIMAUG is heavily informed by the Earth Charter Initiative, who recommended this project for a field visit. In particular, PIMAUG has a peer education programme in which Guanajuato University students train to deliver workshops inspired by the Earth Charter.

Description of the environmental impacts that the organisation already measures and/or manages, and the tools they use:

The University of Guanajuato, through PIMAUG, has a general environmental management system, structured around nine sub-programmes:

1. Awareness Raising and Promotion
2. Efficient Energy Use
3. Responsible use of paper
4. Integral Waste Management
5. Promotion of Green Purchasing
6. Effective Utilization of Water
7. Responsible consumption of raw materials
8. Effective Management of Green Spaces
9. Effective Management of University Transport

The system is managed within each academic and administrative unit by a designated Environmental Management System Coordinator, supported by a wide ranging and substantial student volunteering programme, which plans, implements, measures, evaluates and follows-up on the strategies and actions of each of these sub-programmes. The work done by the Coordinators and volunteers is supported by expert advice from the PIMAUG team as a whole, with one full time member of staff dedicated to the purpose. This includes technical advice, workshops and training, promotional materials, training and evaluation.

The University counted 79 Coordinators in 2005, a number which has grown in recent years. These individuals are provided with a diagnostic assessment tool, developed by the University itself, to assess the environmental impact of their academic or administrative units within each of the sub-programmes.

Volunteering is included as a core part of the University's academic programme and a prerequisite for obtaining an undergraduate qualification. The University thus boasts an active student volunteer body which generates a wide range of activities on recycling, tree planting, and responsible catering.

In previous years, 79% of all units in the University were involved in an environmental diagnostic process, with growing participation. A further diagnostic process generated a parallel strategy for the management of toxic waste generated in University laboratories.

The University Environmental Programme also produces a range of educational materials and resources that span from general values focused documents such as the Earth Charter itself, to more

specific ones such as guides for the management of batteries and toners, or responsible consumption for youth, etc.

The PIMAUG feels that the technical part is largely under control, and the key work remains that of awareness raising and promotion to generate deeper authentic commitments and political will.

Category	Monitoring or management tools
General	Environmental management system with nine sub categories (see examples of responsible practice above) Environmental impact assessments carried out on new buildings
Waste and Recycling	Integral waste management system and strategy for managing toxic waste from University laboratories
Energy	Efficient energy use strategy
Biodiversity	Effective management of green spaces
Water	Effective Utilisation of water
Transport	Effective management of University transport
Catering/Purchasing	Promotion of green purchasing

New tools that the organisation may utilise to measure environmental impacts, and how these environmental indicators may connect with values-based indicators trialled in the field:

PIMAUG requested further information of the different tools cited in Appendix 1, to see whether they might help further refine their environmental management process.

Members of the University’s Environmental Programme are also conscious that their environmental management system is inextricably linked to values, and in particular, with the ability to engender concerted participation and a sense of responsibility across the university. During the field work they expressed great interest in the values-based indicators relating to *Care and Respect for the Community of Life*.

The PIMAUG coordinator, Shafia Sucar, feels that the pace of change in the university was not rapid, but believes and hopes that the changes that are taking place are deeply rooted and will be sustained, precisely because they involve not only technical but also values considerations. Values are thus an intrinsic part of the programme’s environmental management system for the University and strengthen its outcomes. This vision is evident in the introduction to the PIMAUG environmental management system, which states that:

“Only by driving forward the construction of frameworks in the University of Guanajuato where people can grasp and live the values, attitudes and skills involved in environmental ‘knowing’ and ‘being’, can we aspire to have a solid and integrated culture which permeates other sectors of society. Hence, the implementation of this system in all the academic and administrative units of the University represents an appropriate management of resources such as water, energy and paper, among others, as well as integrated waste management and a space to promote environmental education.” (emphasis added)

PIMAUG was very interested in exploring the linkages of the values indicators and their environmental management system in a future field visit, as they felt the time spent upon them demonstrated their relevance, but did not enable their full application.

Appendix – Information from field handbook on environmental resources for projects

Environmental Indicators & Impact

Find out and measure what the organisation/project is already doing to monitor and manage its environmental impact.

Capture notes on the following information about each category of environmental impact (this information will be used to write the report for Deliverable 10, see Appendix A for more details on each).

Questions:	General	Waste / Recycling	Energy	Transport	Biodiversity	Water	Purchasing /Catering
Does the organisation/project already measure its environmental impact in this category? If so, what tools does it used to measure its impact?							
Did the organisation request more information about tools it could use to measure and manage its environmental impact in this category?							
Was information provided to the project? If so, what?							

Additionally, we must consult with the projects about any other environmental issues they feel are important beyond these categories. The list of tools provided in Appendix 1 is not comprehensive. It is not possible to include every specific environmental issue for every project (e.g. a project may have specific air or water pollutant issues related to a product the organisation is developing or using). If a specific issue is mentioned, take notes on it, and we will all try to find further information for them (UoB is happy to consult widely within its environment school to find answers).

Environmental Indicators useful at a project level

The following information provides a useful starting point for measuring and reducing the environmental impacts of projects or organisations. This is not a comprehensive list, and further site or project specific issues must be taken into consideration.

The information has been grouped into the following categories:

- Environmental management planning
Describes generic tools for measuring or managing environmental performance
- Waste and recycling
Describes tools to measure and manage waste created by a project or organisation. This category will be heavily affected by local waste management options available to each project.
- Energy consumption (including transport)
Describes tools used to measure direct energy consumption of project or organisation. Does not include tools to measure broader energy consumption impacts related to purchasing of products etc.)
- Biodiversity
Describes tools to measure local biodiversity impacts (note: this is only for projects which have bio-diverse sites, or are working on biodiversity projects. Does not include tools to measure broader impacts of purchasing etc. on biodiversity worldwide)
- Water
Describes tools used to measure or manage water consumption (no information on water pollution – if there are issues relating to water pollution, take notes and we will get specific information).
- Purchasing and catering
Describes tools and approaches to understanding environmental impact of purchasing and catering decisions of an organisation.

Environmental Management & Planning

Prior to looking at specific environmental issues, such as energy consumption or water use, an organisation or community may wish to first establish an environmental plan. This plan should look at *how* the organisation will manage and monitor its environmental impacts.

Questions that you might want to ask include:

Who will be responsible for overseeing environmental management?

In what areas can the organisation make the most meaningful change?

What targets is the organisation hoping to achieve in reducing its impact? Who is responsible for making sure these targets are met?

How will efforts be funded? How will cost savings, through actions such as reductions in energy consumption, be invested?

How will staff/community members be consulted in developing a plan, reviewing this plan, and encouraged to take action?

Guides such as the Environmental Management Standard (ISO 14001) and others listed below can be a useful starting point.

USEFUL WEBSITES AND TOOLS:

Measurement/management tool	Description	Where to find it	Additional information
Guide to writing an environmental policy or plan	Description & Case studies for businesses who want to write an environmental policy or plan for their organisation	http://www.british-accreditation.co.uk/articles/writing-an-environmental-policy.htm	UK based.
Environmental Management Systems & ISO 14 000 series – Environmental Management Standard	The ISO 14000/14001 is a global standard for environmental management systems that is applicable to any business, regardless of size, location or income. The aim of the standard is to reduce the environmental footprint of a business and to decrease the pollution and waste a business produces.	The ISO 14001 and a toolkit for implementing the standard is available at: http://www.iso14000-iso14001-environmental-management.com/ (Cost - standard: £96/US\$184; toolkit: £400/US\$759)	Freely available information about Environmental Management Systems (EMS) and components of ISO standard 14001 are available at: http://ec.europa.eu/environment/emas/toolkit/further/resources_2.htm The Green Dragon Environmental Management Standard is a five level EMS designed for smaller

			organisations for whom ISO 14001 may be too onerous and for larger organisations who wish to implement ISO 14001 in a more manageable step-by-step approach
Ecological footprint	A tool for individuals to calculate their environmental impact.	http://www.footprintnet.org/en/index.php/GFN/	While this is for individuals, it may stimulate ideas for reducing organisational or community impacts.
Greenhouse Gas emissions	Guidance on how to measure and report greenhouse gas emissions for small businesses developed in 2009 by the UK Department of Environment Food and Rural Affairs (Defra) and Department for Energy and Climate Change (DECC). The document provides information on how to evaluate GHG produced and set up actions to reduce it.	The Guidance document is available on the Defra website: http://www.defra.gov.uk/environment/business/reporting/pdf/ghg-small-business-user-guide.pdf	The guidance document should be used with the greenhouse gas conversion factors which help small organisations measure CO ₂ equivalents for existing data. Database and guidelines can be found at: http://www.defra.gov.uk/environment/business/reporting/conversion-factors.htm
Rural Environmental Management Manual	A set of materials on rural environmental management which can assist people who live in rural areas to manage their own environment and to plan their own sustainable development. It is designed to be either a self-teaching course or to be used in local training programmes.	http://www.bcca.org/ief/rem/rem.htm	
ARC Guide to Creating Seven Year Plans for Generational Change	A guide for faith communities who want to make long term commitments to protect the environment. Helps to translate commitments into practical actions.	http://www.arcworld.org/downloads/UNARC%20-%20guide%20to%20creating%20your%20seven%20year%20plan.pdf	While designed for faith communities, may also be useful for other community organisations.
Listening to the Earth: An environmental audit for Benedictine Communities	An accessible, simple-to-use environmental handbook for low-income rural and urban Benedictine communities in Latin America.	http://www.arcworld.org/projects.asp?projectID=347	Relevant to other faiths and secular communities. Available in English, Portuguese and Spanish.

Waste and Recycling

To understand how an organisation or community can reduce its waste impact, it is helpful to first understand what waste is being produced. A simple way to do this is to conduct a 'waste audit'. This involves looking at what waste the community/organisation currently produces. Look in your bins, and consider:

How much of this waste can be recycled? (Consult with local authorities or environmental groups to find out what can be recycled in the area)

How much of this is unnecessary and can be avoided? (e.g. plastic bags, cups or bottles, which could be replaced with reusable options)

How much of this waste can be re-used or composted?

This can form the basis for a waste action plan – steps that the community or organisation may like to take to reduce the amount of waste that they produce.

If the waste audit is conducted in a rigorous way (e.g. weighing each type of waste to find out how much is produced, using the same method each time) it can be used as a tool to monitor progress in reaching waste reduction goals.

USEFUL WEBSITES AND TOOLS:

Measurement/ management tool	Description	Where to find it	Additional information
Guide to conducting a waste review	The first step before creating a waste management action plan for your organisation. This will point to the areas that need work.	http://www.businesslink.gov.uk/bdotg/action/detail?type=RESOURCES&itemId=1079427728	The whole process of effective waste management is outlined on the Business link website: http://www.businesslink.gov.uk/bdotg/action/layer?topicId=1079427402
Waste management guide for small and medium enterprises	Operational guide to waste management	Part 3 (p.201) operational guide available from the Canadian Environmental website: http://www.qc.ec.gc.ca/dpe//Publication/Mat_Res_eng_v5_secur.pdf	For a well-resourced organisation.
BPIR – Business Performance Improvement Resource	Product Waste Minimisation and environmental release levels as a element of measure and Evaluate Sustainable Development in your organisation	http://www.bpir.com/sustainable-development-bpir.com/menu-id-1/measure-and-evaluate.html	

Energy consumption (including transport)

The best way to begin an energy consumption reduction campaign is to measure your current consumption. Record your energy, gas, and fuel bills on a regular basis. That way, when you implement changes (whether these are behavioural changes, or technical fixes) you will be able to see whether they are making an impact on your overall consumption patterns. Don't forget to consider seasonal differences in your calculations! Once you know how much you consume, you will be able to set targets for reducing energy impacts.

USEFUL WEBSITES AND TOOLS:

Measurement/management tool	Description	Where to find it	Additional information
ARC Climate Change Partnership Handbook	Describes how to establish an energy saving program	http://www.arcworld.org/downloads/ClimateChange.pdf	Written for faith communities, but equally relevant for secular organisations.
Carbon Trust carbon footprint indicator/calculator	A calculator to work out a carbon footprint.	Guide: http://www.carbontrust.com/publications/CTV033.pdf Calculator: http://www.carbontrust.co.uk/solutions/CarbonFootprinting/FootprintCalculators.htm	UK based.
National Energy Foundation Organisation Carbon Calculator	Another calculator to work out a carbon footprint.	http://www.nef.org.uk/greencompany/co2calculator.htm	UK based, does have selection options for some other EU countries, USA, Australia & China
CO ₂ emissions calculator	Very rough and simple calculator of carbon emissions for car, train, plane and bus based on mileage	http://businesslink.transportdirect.info/Web2/JourneyPlanning/JourneyEmissionsCompare.asp	This would not take into account different engine types etc. but could be useful for having a rough idea and comparison
Guidelines to reduce environmental impact of transport	Guidelines for businesses / small businesses. Could be applied to other organisations as well.	http://www.businesslink.gov.uk/bdotg/action/layer?topicId=1080531485	Notes on compliance with legislation only applies to the UK

Biodiversity

To protect biodiversity, it is important to understand local conditions, flora and fauna. Local environmentalists, marine biologists, zoologists, botanists, conservation groups and government authorities often have a wealth of information about the naturally occurring species in an area. They will be able to provide information about which species should be planted or nurtured, and which species are endangered and need protection. There is no 'one-size-fits-all' answer to biodiversity protection. While planting trees might be quite appropriate in a forest, they won't necessarily help a grassland flourish. The best way to help protect biodiversity is to arm yourself with information about your local area, and make locally appropriate choices about actions to be taken.

USEFUL WEBSITES AND TOOLS:

Measurement/management tool	Description	Where to find it	Additional information
EU Natura2000 biodiversity index	EU Biodiversity information – including country surveys and information	http://ec.europa.eu/environment/nature/natura2000/index_en.htm	
European Environment Agency Biodiversity Site	Information about biodiversity categorised by EU countries	http://www.eea.europa.eu/themes/biodiversity	
Tearfund International: Improving biodiversity at a local level	Case study for improving farm biodiversity with useful information from Niger	http://tilz.tearfund.org/Publications/Footsteps+41-50/Footsteps+47/Improving+bio+diversity+at+local+level.htm	
Business and biodiversity guides	Information for businesses about how they can improve biodiversity and/or engage with the community about biodiversity.	http://derbyshirebiodiversity.org.uk/getinvolved/Business_Biodiversity_factsheet_2.pdf http://www.businessandbiodiversity.org/publications.html	
IEF guide to monitoring forests and coral reefs	Describes research and sampling approaches that can be used by an organisation or community to monitor biodiversity.	http://www.bcca.org/ief/rem/remh2.htm	

Water

Monitoring water consumption can be a relatively simple process – just monitor your water bills or count how much water you are using (using a standard measure, like a bucket). Improving water consumption habits can be a little more difficult. A wide range of technological solutions exist to assist in reducing water consumption (see guides below), but these must be coupled with behavioural changes – shorter showers, less garden watering, planting drought tolerant species, not leaving taps running etc.

USEFUL WEBSITES AND TOOLS:

Measurement/management tool	Description	Where to find it	Additional information
Water Footprint Calculators	Calculators to work out amount of water used	Waterscan Water Footprint calculator: http://www.waterscan.com/water-footprint-calculator.asp Water footprint network: http://www.waterfootprint.org/?page=files/WaterFootprintLogo	Some commercial sites included
Water Saving Guides	WaterUseItWisely.com resource list with links to information from around the world about different water consumption issues – landscaping, irrigation, reuse etc.	http://www.wateruseitwisely.com/links-and-resources/index.php Australian save water website http://www.savewater.com.au/how-to-save-water	
Smart Water Solutions & Smart Harvesting Water Solutions	Examples of innovative low cost technologies for wells, pumps storage, irrigation, water treatment, and harvesting	http://www.arcworld.org/downloads/smart%20water%20solutions.pdf http://www.arcworld.org/downloads/smart%20water%20harvesting.pdf	
Smart Sanitation Solutions 1 & 2	Examples of innovative low cost technologies for toilets, collection, transport, treatment, and utilisation of sanitation products.	http://www.arcworld.org/downloads/smart%20sanitation%20solutions%201.pdf http://www.arcworld.org/downloads/smart%20water%20solutions.pdf	

Purchasing and catering

Everything we buy has an environmental impact. By making environmentally friendly choices, a community or organisation can make a huge reduction in their environmental impact. To help make informed choices, many governments and consumer groups have produced ethical and sustainable purchasing guides. If in doubt about a product – ask! The simple act of asking about the provenance of an item may stimulate the producer into thinking about their environmental footprint.

USEFUL WEBSITES AND TOOLS:

Measurement/ management tool	Description	Where to find it	Additional information
Guide to sustainable financing	Guide developed by Every Action Counts Consortium for assessing and promoting sustainable financing within community groups and organisations.	Every Action Counts website – Guides: http://www.everyactioncounts.org.uk/guides/OurFinances.pdf	
Sustainable Catering Guides from MIT (US) & Monash University (Australia)	Useful information about factors that should be considered when catering & purchasing food.	http://fsd.monash.edu.au/files/MU%20Sustainable%20Catering%20Guide%20On%20Screen_1.pdf http://web.mit.edu/wor kinggreen/docs/sustainable_catering_guide.pdf	Both guides have a lot of information that is only relevant for local situations (seasonal guides etc)
Bracknell Forest Borough Council Sustainable Purchasing Guide	Guide to purchasing sustainable products. Covers a wide range of products including batteries, computer supplies, cleaning products, food, timber, paint, vehicles & fuels.	http://www.bracknell-forest.gov.uk/sustainable-purchasing-guide.pdf	UK based. Some of the generic information is useful in many different contexts.