FOR FIELD TESTING

Environmental assessment

For use on medium-impact projects

An environmental tool for agencies in developing countries

tearfund

Environmental assessment

For use on medium-impact projects

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If you have feedback on how you would like to see the medium-level environmental assessment improved, or if you are a Tearfund partner and would like help with carrying out an environmental assessment, please email Tearfund's Environmental Sustainability Advisor: mike.wiggins@tearfund.org.

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Tearfund is a Christian relief and development agency building a global network of local churches to help eradicate poverty.

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Background

Readers already experienced in environmental assessments may want to turn straight to the environmental assessment template on page 48.

All projects carried out by **all** development agencies can either harm or support the environment. This includes projects by all types of organisations, including large international NGOs to small community-based and faith-based organisations. It is crucial that all development projects are environmentally sustainable – neither harming the environment nor using up natural resources faster than they are replaced.

To be good stewards of God's creation we need to recognise that all types of projects impact the environment, whatever the development issue is that we are seeking to address. **An environmental assessment helps agencies to understand how a project may harm the environment.** This helps them plan to avoid or reduce these possible impacts so that the project can be environmentally sustainable. If we do not take time to understand and reduce the impacts of our projects, they may fail. Development that does not consider environmental impacts is harmful to communities and ultimately increases poverty and makes people more vulnerable to disasters.

Are you using the right tool? Please refer to the list of Tearfund tools and publications on page 9, to ensure you are using the one that most suits your needs.

Step 4 of this environmental assessment looks at the impacts of a project on the environment. Step 6 helps you decide how to reduce your impacts. **Steps 4 and 6 together are the most important parts of the environmental assessment.** They help you understand how the project may harm the environment, and work out how you can change the project design to help protect the environment. The Activity comparison table at the end of Step 6 (page 47),

Geoff Crawford / Tearfund

Deforestation can interrupt the water cycle, cause soil degradation and lead to loss of plants and animals.

helps you to work out which of the possible modifications is most beneficial to the environment, the project and the community.

An environmental assessment, in addition, helps project planners to take account of current and future environmental issues that may affect the project. It may be that the project design needs modification, or even that a project's location should change.

Readers who are already experienced in using environmental assessments may want to proceed directly to the Medium-level environmental assessment template on page 48.

Do I need to complete an environmental assessment for my project?

All projects impact the environment, either harming it or supporting it. For example, poorly designed latrines could pollute drinking water, whereas good design can reduce the spread of disease; land preparation for crops could cause soil erosion and water loss or improve the soil quality and water retention; construction projects can pollute soil and water or use locally sourced renewable materials. Ideally, every project should be evaluated through an environmental assessment. Certainly, the environmental impacts of every project should be considered during the project planning stage. The table below describes the types of environmental assessments that can be undertaken. Further guidance on which level of assessment you should use is given on page 54.

Tearfund's environmental assessments are provided at two levels

Tearfund's basic-level EA *ROOTS 13, Environmental sustainability* contains a basic EA. This is to support projects which have little obvious impact on or from the environment, such as projects that focus on education, advocacy, health, HIV and AIDS, gender and child development. It is for agencies which seek good environmental practice in their work.

Tearfund's medium-level EA is set out in this document. It is for use in projects which have a more obvious interaction with the environment, eg projects that focus on water and sanitation, agriculture, manufacturing projects that produce solid or liquid waste and those that involve construction of buildings, roads, dams and so on.

Other higher-level EAs – often called **Environmental Impact Assessments** (EIAs) – are also widely used by civil engineers and others engaged in major construction work such as large dams and power stations. Tearfund has not developed a tool at this level as they are beyond the scope of Tearfund's partners' usual work. Similarly, **Rapid Environmental Assessments** (REAs) and **Strategic Environmental Assessments** (SEAs) are beyond the scope of this document.

For further guidance on whether your project needs a basic-, medium- or higher-level environmental assessment, please see the flowchart on page 55.

This medium-level EA is designed for use on all medium-impact projects, in all sectors. However, some donors or regulatory bodies may have their own EAs – in which case it is important to use theirs.

If you are still unsure about which tool to use, please refer to the table on page 9.

For further background information about environmental sustainability, environmental degradation and climate change and about environmental assessments, please see *ROOTS 13, Environmental sustainability* on http://tilz.tearfund.org/Topics/Environmental+Sustainability.

Marcus Perkins / Tearfund

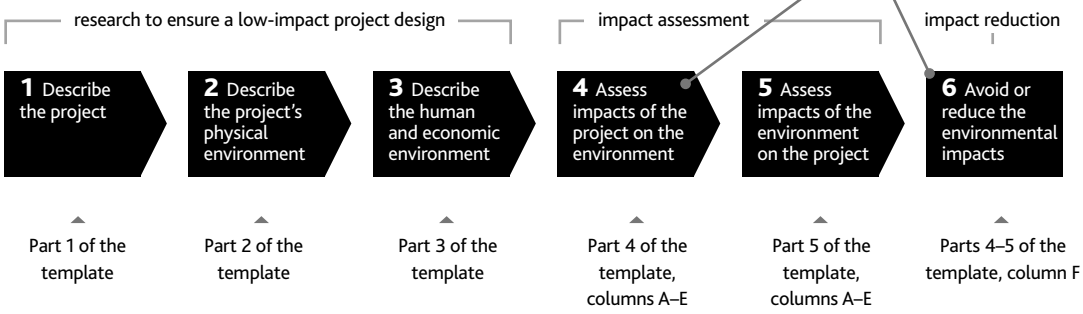
Slash and burn of forests in Brazil to make way for agricultural land damages the soil and plants and contributes to climate change.

How to use this tool

This document contains an environmental assessment template on page 48. The rest of this document describes the six steps involved in completing this assessment. The first five of these steps correspond to the five parts of the template. The sixth step is to complete the final column in Parts 4 and 5 of the template – as shown in the diagram below.

For each step there is an example of a completed assessment, using a project belonging to the imaginary organisation, Somuni Women's Rehabilitation Programme. Notes for how to complete the template accompany each example.

Steps 4 and 6 are the most important parts of the assessment. They help us see how the project may harm the environment, and prioritise issues to address.



The six steps to complete the assessment, and how they relate to the five parts of the template

Work on the Medium-level environmental assessment could be carried out by any development worker who is familiar with using other project planning tools. However, some of the information required is of a more technical nature, so it would also be helpful if you selected a member of staff with experience of working on environmental issues. Some projects may require the input of a qualified specialist, such as a civil engineer, hydrologist, agriculturalist or someone else who has experience of environmental assessments.

When to carry out an environmental assessment

Ideally an assessment would be carried out during the project planning stage of every project, so that the project could be designed from the start to take account of the environment.

If a project is already under way, and environmental factors were not fully considered in the initial planning, it is possible to carry out the assessment at any stage of the project's implementation phase. If you carry out an environmental assessment you must also be willing to make any necessary changes to your project in response to your findings: you may find that your project is harming the environment in some way, and action would therefore need to be taken in response. For example, dyes from a textile workshop could be contaminating a local water supply and therefore the way the project disposes of used dyes would need to be changed.

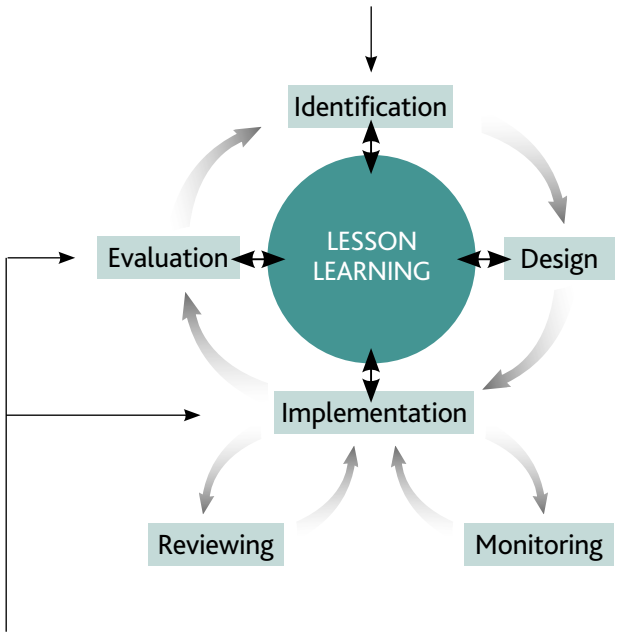
Environmental assessments integrate into the normal project cycle

This Medium-level environmental assessment is designed to be completed as part of the usual project cycle. For more details about the project cycle, see *ROOTS 5: Project cycle management* on http://tilz.tearfund.org/Publications/ROOTS/Project+cycle+management.htm. The diagram below shows the links between an environmental assessment and the project cycle.

How an environmental assessment fits within the project cycle

An environmental assessment carried out alongside a needs assessment will draw attention to particular environmental problems in the community that need to be considered. Parts 2 and 3 of the assessment outlined in this tool will help at this stage.

Environmental assessments may also be carried out in conjunction with other specialist assessments such as Water Safety Plans, and Sanitary Surveys.



An environmental assessment helps to identify issues that should be considered during project design. Parts 4 and 5 of the assessment outlined in this tool will help at this stage.

After completing an environmental assessment, the impact of project activities on the environment and the impact of the environment on the project are monitored and evaluated. See page 40.

Community consultation and participation

It is the responsibility of a development agency to consult communities about project design and reducing possible environmental impacts of projects.

You could undertake the EA during the community consultation stage of another assessment such as a Disaster Risk Assessment or Climate Change Risk Assessment – See Tearfund's PADR and CEDRA tools described on page 10.

There are many benefits from involving the local community in the assessment. Local people have knowledge about past changes in weather and the environment and will be affected by any changes the project makes to the environment. Ignoring some people's views, such as women, children or people living with HIV or AIDS, can lead to significant environmental hazards being overlooked. A representative cross-section of the community should participate in providing information for Steps 2 and 3 and also in the decision-making required to complete Steps 4, 5 and 6 of the assessment.

The purpose and desired outcome of the assessment should be explained to the community. It is important for development workers to respect the community's ownership of the knowledge that is shared in their contributions. Therefore, always leave the original copy of the assessment in the ownership of the local community, and take a copy, with their permission, for your development agency to use. It should be explained to the community how the assessment is likely to be useful for them to refer back to, when undertaking other projects.

Information about how the community has been consulted or involved in carrying out the assessment should be included in row 48 of the template (page 21).

The findings of an environmental assessment are intended primarily for use by a development agency and by the community itself. If the assessment is going to be useful, the people collecting the information need to ensure they collect accurate and open information. This will be to the benefit of both the agency and the community: otherwise the process would be worthless and misleading, with possibly harmful consequences. For example, it may normally be taboo for the community to discuss sanitation habits. If sanitary practices were not discussed, an otherwise well designed project could end up accidentally polluting drinking water.

Environmental assessments should contain accurate and open information.

CASE STUDY
Experiences of nomadic groups in West Africa

The importance of open community communication

One of Tearfund's partners works with people with nomadic lifestyles who have a lot of uses for plants, roots and fruit for medicine and food, and surviving famine. They are fiercely proud and at first thought that 'outsiders' may be suspicious of these uses. They felt ashamed that they have to eat the grain of thorny grass during severe famines. Tearfund's partner only learned about this after they'd given many months to building relationships and trust, putting people at their ease and explaining the benefits of providing more complete evidence. Learning about this and other 'survival foods' helped to design a much better project.

Mike Wiggins / Tearfund

Tuareg people discussing how they adapt to environmental change.

Environmental legal requirements

Agencies carrying out projects with significant environmental impacts are likely to be required to meet certain legal conditions. These vary between countries, but may include:

- water discharge consents or abstraction permits
- control of release of pollutants to the air, ground and water
- control of substances hazardous to health, eg asbestos, dyes, fuels, cleaning fluids, bleaching agents, and other toxins
- protection of woodlands, animal species, nature reserves, national parks, areas of outstanding natural beauty, sites of scientific interest
- protection of indigenous people's rights
- building or planning regulations
- land tenure or ownership permits.

Information about how you have met such requirements should be included in Part 3 of the template, in row 49 (page 21).

Tearfund resources to support environmental sustainability

Tearfund and its partners are responding to a changing environment and disasters that are caused by human activities and natural environmental phenomena. These include climate change, environmental degradation and geophysical disasters. The table below lists the various Tearfund tools and documents related to environmental sustainability and illustrates how and when they can be used.

- **The Tearfund tools** describe methods, activities and procedures which can be carried out.
- **The Tearfund publications** are sources of further supporting information and knowledge.

This table includes issues relating to disasters, climate change, and environmental degradation. It's important to take time to read this table to understand what tools are available and when they should be used, to ensure you are not using the wrong one.

TABLE 1
Tearfund tools and when to use them

Appropriate level for tool or publication	Tearfund tools	Tearfund publications
HIGH LEVEL **NATIONAL** **CONSORTIA** **CORPORATE** **(I)NGO** **CIVIL SOCIETY** **PROJECT** **COMMUNITY** **LOW LEVEL**	■ *Mainstreaming tool* (a tool to help measure how well DRR has been integrated into your organisation) ■ *CEDRA* Climate risk assessment tool ■ *Medium-level environmental assessment* (for higher-impact projects) ■ 'Basic' environmental assessment (for low-impact projects – in *ROOTS 13*) ■ PADR Assessment of disaster risk (Information can be shared between CEDRA and PADR)	■ Country Climate Profiles ■ *Linking CCA and DRR* ■ *Turning practice into policy* ■ *ROOTS 13: Environmental sustainability* (guide to environmental sustainability and climate change, including personal, project and organisational responses) ■ *Darfur: Relief in a vulnerable environment* ■ Proposed partner-level booklet on linkages between CCA and DRR ■ *Characteristics of a disaster-resilient community*

Read this table to ensure you're using the right tool for what you are trying to achieve on your project.

All of these publications can be found on Tearfund's International Learning Zone website (TILZ): http://tilz.tearfund.org/Topics/Environmental+Sustainability

The table on page 10 gives more detail on the above community-, project- and agency-level tools.

CCA Climate Change Adaptation
CEDRA Climate change and Environmental Degradation Risk and Adaptation assessment
DRR Disaster Risk Reduction
PADR Participatory Assessment of Disaster Risk

Tearfund environmental tools and resources

See http://tilz.tearfund.org/Topics/Environmental+Sustainability

- ***ROOTS 13: Environmental Sustainability*** considers how NGOs' projects, office activities and individuals' personal lifestyles affect, and are affected by, the environment and climate. It outlines various practical responses that you can make.
- ***CEDRA – Climate change and Environmental Degradation Risk and Adaptation assessment*** provides guidance on how to determine climate change and environmental degradation impacts in your country or district and how to adapt your projects in response to them.
- ***Darfur: Relief in a vulnerable environment*** makes practical recommendations for carrying out humanitarian relief work that takes account of the environmental context. It recommends using the: 2005, Benfield Hazard Research Centre and CARE International, *Guidelines for Rapid Environmental Impact Assessment in Disasters*: www.gdrc.org/uem/disasters/disenvi/kelly.doc
- ***PADR – Participatory Assessment of Disaster Risk*** is Tearfund's community-level tool for assessing the hazards, vulnerabilities and capacities (HVCs) of a community. It also helps prioritise risks and develop community methods for reducing them. PADR helps communities see cause-effect relationships and mobilise them around solutions – using their own capacities and additional resources or advocating for action from local government.
- **Tearfund Country Climate Profiles** review the projected impacts of climate change on countries Tearfund partners are working in. New ones are being added regularly.

The overlap between climate change adaptation, environmental degradation adaptation and disaster risk reduction

Appendix B explores the overlap between climate change adaptation, environmental degradation adaptation and disaster risk reduction. This appendix should assist readers in understanding the overlap and difference between causes, impacts and responses relating to climate change, environmental degradation and geophysical hazards, including illustrating where they can integrate established disaster risk reduction responses into their work.

Step 1 Describe the project

Part 1 of the template

Step 1 of the EA helps you reflect on the scope of the project, putting it in context before you describe the existing environment in Steps 2 and 3, and assess potential impacts on and from the environment in Steps 4 and 5.

All projects carried out by **all** development agencies can either harm or support the environment. It is crucial that all development projects are environmentally sustainable – not harming the environment, or using up natural resources faster than they are replaced.

This part of the Environmental assessment template, on page 48, provides contact details about the people involved in or affected by the project, as well as background information about the project. This section is important because it clarifies responsibilities and also sets the project in context before assessing the environment in Steps 2 and 3 and then evaluating potential project impacts on and from the environment in Steps 4 and 5.

The person carrying out the assessment, and any people later reading and using it, need an understanding of the type of project which is being implemented. The reader may also wish to contact project staff or other agencies listed in rows 3, 5, 10 or 11 of the assessment, to ask questions or to verify the information provided.

Complete Part 1 of the template

Consult other members of staff, other agencies, contractors, and any available maps, as required. The template for you to complete is on page 48. Notes on how to complete some of the rows in Part 1 follow the fictional example below.

Mike Wiggins / Tearfund

This community market garden in Burkina Faso has increased food security and provided a secure income.

Worked example – Step 1

All the examples shown have been completed using details from a project planned by the imaginary Somuni Women's Rehabilitation Programme.

Date	1 January 2010
Assessment project manager	Ms A Woman, Environmental Field Officer
EA Template completed by	Ms B Woman, Gardening Officer

Part 1: Description of the project

1	**(Lead) Organisation's name**	Somuni Women's Rehabilitation Programme
2	**(Proposed) Project name**	Proposed Year-round Vegetable Gardening project (YVG project)
3	**Name and contact details of lead assessment officer**	Contact: Ms A Woman, Environmental Field Officer; Address: 1 Field Street, Farming Town, Resilient Country; Telephone: ++ 123 456 7890; Mobile: ++7890 123456; Email: a.woman@somuni.org
4	**Project location(s)** *[see numbered notes below]*	Location: Proposed Brown Field, Country Road, on the north side of Arid Village, near Busy Town. Site map and photos attached ***[not with this imaginary example]***. Properties on this land are marked on the map.
5	**Registered landowner(s) and contact details (provide letter of consent if possible)**	Mrs Kind Landowner, Main House, Main Street, Busy Town; Tel: ++00 678 912 3456 Letter of consent unlikely to be granted. May become part of a separate advocacy project.
6	**Project goal and desired benefits:** **- project need/purpose** **- project beneficiaries** **- main project activities** Step 5 of this EA has shown that we need to explore alternative drought- and flood-resistant crops	The YVG project is to help women in Arid Village to achieve food security and financial independence. Crops of maize have failed in 3 of the last 5 years. The introduction of market gardening will mean the women can provide vegetables for their families, as well as earn an income from surplus vegetables sold at Busy Town weekly vegetable market. The project includes procuring tools, preparing land, purchasing seed, and training in sustainable organic agriculture. In time, women may earn enough to buy their own plot of land, for longer-term security. A follow-up advocacy project is likely around land tenure rights. The project is expected to directly help 30 women and their families and indirectly benefit the wider community of 240 people.
7	**Anticipated length of project including a description of set-up, implementation and closure phases (if relevant)**	**Phase** / **Expected start** / **Expected completion** Project set-up / June 2010 / September 2010 Implementation / October 2010 / December 2013 Closure / January 2014 / January 2014 Total project / 3 years to become self-sufficient. Land returned to Mrs Kind Landowner after 10 years.
8	**Minimum land area required for the project**	Area of land approximately 50m by 50m initially available for lease from the landowner.
9	**Available total land area within the identified location(s)**	Up to 2 hectares are available for lease if the project is successful.
10	**Responsible agricultural / water and sanitation officials and contact information**	Mr Agricultural Adviser, Agricultural Office, Busy Town, Tel: 0123 456

Handwritten comments were added later, during the final stages of the assessment.

Optional questions

Villagers are concerned that clearance may harm medicinal trees

11	**Name and contact details of any other agency involved in the project**	There are no other agencies directly involved in the implementation of this project.
12	**Records of similar work/projects attempted in the area and environmental outcome/impact**	Vegetable gardens have been grown by other organisations in neighbouring villages and we plan to receive training from one of these and from the local council's agricultural officer.
13	**Does the site(s)/project require any clearance? (provide extent of this)**	The land will need to be prepared, but not cleared of any structures. Existing trees, shrubs and natural features are all proposed to be retained to protect new market garden crops and retain existing soil quality.

How to complete some of the rows in Part 1

Most of the rows in **Part 1** should be straightforward to complete. They ask for details of people involved in the project, and a description of the site location and overview of the proposed project. Guidance on some specific questions is given below.

Row 1 Note the name of the organisation responsible for coordinating or facilitating this project. If more than one agency is involved in implementing this project, identify one as the 'lead' agency and note the other agencies in row 11.

Row 3 Provide a contact name for someone in your organisation who is responsible for managing the environmental assessment and will be able to answer questions about it.

Include the contact's job title, telephone numbers and email address if they have one.

Row 4 Provide a brief description of where the project is located.

Site map(s) should include project activity location(s), access points (eg roads and gates leading onto the site), names of any properties and property reference (eg title deed reference number or postcode) if possible.

Where possible, photos should include pictures of any buildings and any other notable natural or physical features – eg streams, slopes, wells, walls and extent of trees.

A more extensive description of the current and surrounding land use, existing infrastructure, and environmental features and attributes are included in **Parts 2 and 3** of the template.

Row 6 Describe why the proposed project is needed – summarise the problems and improvements a project may be able to make.

Row 7 Complete the table.

Row 10 Name any persons required to sign off any agricultural, water and sanitation, environmental, construction or land clearance approvals. This may be legally required.

Row 11 Other agencies may have learned lessons already through failure or success with similar projects. If this is the case, describe here how your project is building on previous successful experiences. (If it is not the case, write 'none applicable'.)

Row 13 Describe extent of any reclamation of land/wetlands, clearing of forests and felling of trees required before the project can start. Such clearance may have a significant impact on flora, fauna and water resources and requires careful planning and management.

Step 2 Describe the project's physical environment

Part 2 of the template

In this part of the template the project's natural and physical environment is assessed. This is important because:

- An assessment of the natural physical environment prior to starting the project will help ensure a sustainable project design – with benefits for nature and humans. For example, an observation in this part of the assessment that wild animals rely on certain vegetation for their habitats will affect decisions about whether to remove that vegetation in order to carry out a project. Or an observation that water supplying the local community runs through the project site will affect decisions about how to dispose of any solid or liquid waste produced by the project (protecting public health).
- The project may directly affect the physical environment. The information collected in Step 2 will therefore affect project design – eg the slope or soil types may limit project activities.
- Information collected in Step 2 will be useful to provide a baseline in later evaluations of the impacts of the project on the environment.

Step 2 of the EA assists you in making careful observation of the existing environment. This will help you identify ways in which it is vulnerable and needs protecting, and ways in which the project could harm or help sustain the environment and its natural resources.

Eleanor Bentall / Tearfund

Careful assessment of the physical environment can reveal potential environmental impacts such as the threat of landslips here in Borkeshe, Kindo Koysha district, Ethiopia.

Complete Part 2 of the template

Note the current condition (positive and negative) of each aspect listed. At this stage do not write about how the project may affect these physical environmental aspects, or be affected by them.

For natural resources (eg water, timber, flora, fauna, minerals), consider and write about:

- Is the resource being used in a non-renewable way or otherwise becoming more scarce?
- Is the resource affected by environmental degradation and changes in climate, and are the impacts likely to get worse?
- Is the community highly dependent on the resource? Why?
- Is the identified issue likely to last a long time?

Possible methods for collecting information

- **Observation** – eg a preliminary walk through the project site(s) and neighbouring land with community representatives, noting the positive and negative conditions of each type of resource.
- **Collecting community-based knowledge** involving several community members in participatory exercises. Try to include representatives from all sectors of the community (male, female, young, old, wealthy, poor, different ethnic groups or religions). The Tearfund *Facilitation Skills Workbook* provides detailed information on the use of participatory techniques (see http://tilz.tearfund.org/Publications/PILLARS/Facilitation+skills+workbook). Participatory tools which could be used include focus groups, community mapping, seasonal calendars, historical timelines, transect walks, use of ranking / matrices and storytelling / poetry and plays. Records should be disaggregated where possible to identify specific groups – such as women or the elderly.
- **Interviews or focus groups with other stakeholders** – ie people with technical or specialist knowledge of the natural and human and economic environment, eg community leaders, local government technical experts, other development agencies with knowledge of environmental issues and scientists with knowledge of local environmental conditions.
- Depending on the sector, **field surveys** may be necessary, such as to measure soil quality / water contamination levels.
- **Collecting data and scientific information** – eg looking at government records, or contacting local technical officers or scientists.

The Tearfund tool *CEDRA* provides more detail on carrying out these types of research (see http://tilz.tearfund.org/Topics/Environmental+Sustainability).

A description of how to complete some of the rows in Part 2 of the template follows the example environmental assessment on the next page.

Worked example – Step 2

Part 2: Description of the project's physical environment

14	**Topography and natural features in project site(s) (Is the area flat, sloping, hilly or very varied?)**	The land is mainly flat with a slope of around 10 degrees across the rear 20 metres. A site plan is attached showing slopes and elevations *[not with this example]*.
15	**Project position on site(s)**	At the bottom of the slope. Marked on the attached sketch *[not with this example]*.
16	**Local climate**	Seasons are not as they used to be. The rainy season is unpredictable, shorter – typically over two months instead of four; and rainfall is more intense when it comes, causing flooding and loss of soil. Step 5 identified that we need to divert floods
17	**Typical vegetation ground cover, eg scrubland, grassland, trees, woods, agricultural land, marsh, coastal scrub and mangroves**	

	Typical ground cover	% of each ground cover type
In project area	Scrubland	100%
On the margins of the project area	Scrubland	100%

18	**Flora and fauna (common plants, wild flowers, grasses, animals)**	We can list 8 different species of animals and 12 species of plants that have disappeared from this area over the last 10 years. Proposed crops are drought- and flood-resilient.
19	**Natural resources in the local area(s)**	Water resources are gradually declining. Deforestation has significantly reduced tree cover. Traditional maize crops are regularly failing. Train villagers to grow + cook root vegetables?
20	**Current local use of natural resource management methods**	Combined irrigation and drainage methods have been introduced at one local farm, which appear to be working. Scrubland clearance through cutting and burning is commonly practised, which is degrading the quality of the soil. Must make people aware of how this harms the soil
21	**Existing environmental conservation methods or structures (eg water or soil conservation structures and flood diversion channels)**	Flood diversion channels were constructed on another close site, but are now silted up because they weren't maintained.
22a	**Source of and distance to fresh surface water from project site(s)**	

Source	Distance
☐ Spring / canal	
☐ Tank / reservoir	
☐ Perennial stream	
☑ Seasonal stream / pond / lake	10m (for 3-5 months of the year)
☑ River	5km walk
☐ Lagoon	
☐ Sea / ocean	
☐ None	

22b	**Surface water use within project site(s) and downstream**	☑ Drinking / cooking ☑ Washing / bathing ☑ Irrigation ☑ Animal use
22c	**Surface water quality within the project site(s) (Note: all surface water should be treated prior to consumption)**	☐ Poor (polluted with external materials) ☑ Moderate (not using for domestic purposes) ☐ Good (using for domestic purposes)
22d	**Ground water availability within the project site(s)**	☐ Dug well ☑ Borehole ☐ Other (specify):
22e	**Ground water use within the project site(s) and downstream**	☑ Drinking / cooking ☐ Washing / bathing ☑ Irrigation ☐ Animal use

When you have completed the assessment, read through it and mark the most important issues you need to respond to that support or harm the project or environment.

22f	**Ground water quality within the project site(s)**	☐ Poor (polluted with external materials) ☐ Moderate (not using for domestic purposes) ☑ Good (using for domestic purposes)
22g	**Current local use of water conservation methods**	Surface water storage ponds have been constructed in a nearby village, initiated by the women. They are covered with plastic sheeting to reduce evaporation. We may be able to do the same at this site, and use the naturally occurring clay to line the pond.
23	**Vector-borne disease levels in local area(s) (diseases carried by an insect or other organism [the vector] eg malaria and dengue carried by mosquitoes)**	There has been an increase in malaria and dengue fever over the last five years, particularly in the rainy season. Check local hospitals are keeping records?
24	**Land or soil erosion on project site(s) or neighbouring land**	The increasingly frequent floods are washing away good quality top soil.
25	**Air quality in local area (pollution, dust, smoke, acidic rain, etc)**	Dust pollution reaches high levels during the last months of the dry season: from January to March.
26	**Incidence of climate-related hazards**	☑ Floods ☐ Prolonged droughts ☐ Cyclones (hurricanes, typhoons) / tidal waves ☐ Other (specify):
27	**Are there any environmentally sensitive areas in, or within 250 metres of, the project area(s)? Please list.**	None were identified during site visits and community discussions.

Optional questions

28	**Soils in the project site(s)** If this continues, project may fail. Advocacy project needed for reforestation?	Silty clay, with low organic content above shallow fissured sandstone. Surface soil was historically fertile and yielded good crops, but since a large area of trees was cut down 500m to the north of the site, some soil has been washed away by floods and the soil quality is getting worse.
29	**Crop pest levels in project site(s) and neighbouring area**	Waterlogging due to increased rainfall means stem borers are breeding faster, damaging crops and affecting local nutrition.
30	**Crop failures and any changes in crop varieties planted locally, eg high yield varieties**	Root vegetable crops that are resilient to waterlogging, drought and higher rainfall have been introduced in the local area during the last two years.
31	**Livestock health in local area(s)**	Not applicable to the project.
32	**Fish stocks quality and availability in local area(s)**	Not applicable to the project.
33	**Coastal erosion in project site(s) or neighbouring land**	Not applicable to this project.
34	**Geological hazards**	☑ Landslides ☐ Rock falls ☐ Subsidence ☐ Earthquakes ☐ Volcanoes ☐ Other (specify): The risk of landslides has increased during the rainy seasons (April to June and September to November). A landslide occurred 200m uphill from the project site last year that destroyed crops and 5 homes.

How to complete some of the rows in Part 2

Row 14	Provide a description of the project site(s) and/or attach an extract from relevant map(s) if possible.
Row 16	Describe average temperature, rainfall and weather patterns in each season; length of dry season and wet season; observed and predicted changes. You may need local government help in doing this.
Row 17	Complete the table and describe any variations in ground cover between seasons.
Row 18	Include any native plants or animals threatened – or of conservation importance – in, or within 250 metres of, the project area(s). Describe seasonal variations if relevant.
Row 19	List diminishing and scarce resources, eg wood/forests, minerals, stone and food sources. Describe any seasonal variations.
Row 20	Describe how the community attempts to manage natural resources and whether natural resources are being fully replenished.
Row 22c	Describe any seasonal variations. Include any known on-site or upstream causes of contamination.
Row 22d	Describe any known upstream causes of groundwater depletion.
Row 22f	Describe any seasonal variations. Include any known on-site or upstream causes of contamination.
Row 22g	Describe, eg rainwater harvesting; drip-feed irrigation; re-use of grey (ie used) water.
Row 23	Describe any seasonal variations.
Row 25	Describe air quality levels, eg as poor, moderate or good, giving consideration to different seasons. Pollution may be from factories, tanneries, mining activities, intensive farming methods (chemical fertilisers and pesticides) on adjacent land or 'upstream'.
Row 26	'Others' may include wildfires and increased disease spread. Describe any observed seasonal variations in hazards noted.
Row 27	List, eg protected areas, migratory pathways of animals, wetlands, mangroves, flood areas, waterways. You may need to visit local or national government offices to determine this, or consult local agricultural or environmental government technical officers.
Row 28	Comment on type of soil – clay, loam etc. Also note soil quality and any erosion or landslides. You may need a technically qualified person to help you with this, eg local council agricultural officer, civil engineer or geologist. Mention fertility and, if relevant, describe whether crop yields are increasing or deteriorating. State any local practices to improve soil fertility, eg digging in compost or manure, rotating crops, alley cropping or stopping slash and burn practices.
Row 29	Describe how you record or measure crop pest levels, and describe any variations that occur according to the season.
Row 30	State here whether common seed varieties are being replaced with other seeds, eg traditional or newly cross-bred resilient varieties.
Row 31	Include notes of any observed seasonal variations.
Row 32	Include notes of any observed seasonal variations.
Row 34	If volcanoes and earthquakes are known to occur in the area then their frequency, severity and any predictions of when future ones are 'due' should be researched and noted and considered in the project design (or site selection if there is a choice).

Step 3 Describe the human and economic environment

Part 3 of the template

Step 3 of the EA helps you in making careful observation of the community(ies), culture(s), customs, livelihoods, health and poverty issues. This will help you identify ways in which they are vulnerable and need increased resilience, and ways in which the project could inadvertently harm or proactively help sustain them.

The project's human and economic environment is important to consider because:

- An understanding of human and economic conditions before the project starts will enable project design which is sustainable. For example, water vendors selling water at high prices, forcing many households to use more polluted sources.
- The project may be affected by human and economic aspects, and the information collected in Step 3 will therefore affect project design, eg high level of brick-making, causing over-use of a good quality water source.
- Information collected in some of the rows (eg row 43, 44, 50, 53) will provide a useful baseline for later evaluations of the impact of the project on the environment.

Complete Part 3 of the template

Describe each aspect listed. At this stage do not write about how the project may affect these human and economic aspects, or be affected by them – this is considered in Steps 4 and 5.

Possible methods for collecting the information (see further description on page 15) include observation and collecting community-based knowledge and local government records, eg of population figures, ethnic composition and health.

A description of how to complete some of the numbered rows in Part 3 of the template follows this part of the example environmental assessment on page 22.

Richard Hanson / Tearfund

An understanding of human and economic conditions before the project starts will enable project design which is sustainable.

Worked example – Step 3

Part 3: Description of the project's human and economic environment

35	**Population in area(s) (male / female, adult / children)**	240 inhabitants of Arid Village. 140 are female. 165 are under 16 years old.
36	**Social structure in local population(s)**	Extended families live together in Arid Village. There are no migrants into the village, although a lot of young men leave in their 20s to seek work in Busy Town. Literacy levels vary between sexes, with older women and Muslim women in the sub-group who deal with the solid waste having the lowest literacy levels.
37	**Health and education levels of local population(s)**	Life expectancy is typically 45 for men and 43 for women. Infant mortality rate is typically 303 per 1,000 births. 33% of men and 17% of women complete a primary school education. There is currently no access to secondary school education within easy reach of the villagers.
38	**Proportion of people (male / female) living with HIV and AIDS in local population(s)**	HIV and AIDS are not discussed within the community. Government estimates are of a prevalence of 7%. However, UNICEF estimates that the national prevalence is closer to 13% (ie 11% of men and 16% of women). Promote good tree management?
39	**Relevant cultural values, customs and ways of life which are central to the community(ies) in the local area(s)**	The community depends on local plants for herbal remedies for many sicknesses. Most of the community depend on local trees as a source of firewood for cooking. ...or ask Seva Somuni local NGO to expand their efficient woodburning stoves to this area?
40	**Ethnic/religious composition of people in local area(s)**	75% of the population are Muslims, 20% orthodox Christians and 5% Pentecostal Christians. A sub-group making up 10% of the Muslim population do not typically gain access to education as they are expected to deal with the solid waste produced by the rest of the community.
41	**Land ownership (male / female)**	All of the land in the village is owned by men. Women have very few rights to own land.
42	**Settlements** Do we need separate women's and men's vegetable gardens?	Villagers typically live in three distinct areas, around their ethnicity/religion.
43	**Main livelihoods**	Local inhabitants earn their income mainly as agricultural labourers, nomadic pastoralists and small traders. Women make up 70% of the agricultural labourers and 10% of the traders. Women typically receive around one third to half of the salary that men receive.
44	**Is there a resource base to support livelihoods in the local area(s)? If so, what?**	Yes. Nearby tea plantation employs 150 people. Local government offices, village school and the small hospital in Busy Town are the next biggest employers.
45	**Sanitary conditions in local area**	A sanitary survey has previously been completed in the village by another agency. Most defecation is in the open after dark, which leads to security issues for women and children. Approximately 20 families use pit latrines. A local NGO tried to implement eco-san toilets in the area, but they were thought to be spiritually and physically unclean and so the community did not accept the toilets.
46	**Level of community hygiene awareness**	Two hygiene awareness courses have been run in the community within the last 5 years around hand washing, food preparation and avoiding contaminating stored water – one among the women, and the other among primary school children. The incidence of diarrhoea has decreased by 40% in the community since this training.
47	**Peace (lack of conflict) in local community(ies)**	There is a lack of awareness of each other's religions and customs in the community. There are untrue rumours that Christians make animal sacrifices, which causes some suspicion between the communities. It is suspected that these rumours stem from Muslims observing Christians eating non-halal meat. There is an underlying issue of equitable access to good local grazing land, which may be linked to these tensions. There have been some stories about attacks on local NGO workers by bandits from surrounding villages. These have not been verified. However, in the market there is a peace committee in which Christian and Muslim traders seek to resolve their differences.

48	**Community consultation and participation** This is key to project success!	Participatory approaches have not been used in Arid Village on previous projects. Villagers have complained that other NGOs have started agricultural projects that have either failed or not been completed. They are therefore wary about our proposed market gardening project. A fully consultative approach is therefore planned, to facilitate villagers in determining the most appropriate solutions to their identified food insecurity challenges.
49	**Local legal requirements or constraints – eg permits to abstract water or dispose of waste, or restrictions on land ownership (tenure)**	Permits are required from the Ministry of the Environment to dig wells or boreholes. Solid waste legislation prohibits burial of waste within 30m of any well or water abstraction point. However, this is not adhered to due to lack of awareness.
50	**Note vulnerable groups/members of the community(ies)** Include 'disaggregated' data throughout this section, ie answer questions in terms of men/women, young/old, healthy/infirm, different religions etc.	Women: Women are travelling increasing distances to collect firewood and herbs and also water in the dry season, putting them at risk of dehydration, violence and rape. Children: Increasing numbers of school-aged girls are not completing their education as they help with family chores and look after younger siblings. Boys are required to work to supplement the family income. Older people: Food shortages are affecting the nutrition of older people. Sick/disabled: People with HIV or AIDS are discriminated against and therefore hide their condition and have very little access to medical help. Children with physical and mental disabilities are locked away indoors, and therefore have the least access to food and healthcare.

We need to ensure ALL these groups are included in the project

Optional questions

51	**Quality of buildings**	There are no existing buildings on the project site. Local construction methods include timber, straw and corrugated iron structures for around one third of the population. The remainder of the population live in brick/concrete dwellings.
52	**Institutions and location / distance from project site(s)** Handwritten comments were added later, during the final stages of the assessment.	**Institution** / **Location / distance** Primary school: 500 metres Hospital / medical centre: 8km (in Busy Town) Pharmacy: 8km (in Busy Town) Post office: 8km (in Busy Town) Sites of worship: 2 churches within 500 metres, mosque in Busy Town (8km) etc:
53	**Agricultural systems used locally**	Slash and burn practices together with annual cultivation, heavy reliance on chemical pesticides and fertilisers and inefficient irrigation in the local area are combining to degrade soil quality, leading to crop yields reducing year on year. More sustainable agricultural methods are needed. Promote organic pesticides and fertilisers in this project?
54	**Industry and other land use in local area(s)**	The nearest industry is open-cast coal mining 20km to the south east. Eight community members work there.
55	**Transport infrastructure and their usual usage in local area(s) (occasional/heavy)**	**Transport** / **Usual usage** Roads: Road to Busy Town: tarmac for 1.5km, remaining 6.5km unpaved Railways: Not applicable Rivers: Not applicable etc:
56	**Quality and availability of electricity supplies within the local vicinity**	5 diesel generators are in use in Arid Village by the primary school, village hospital, a restaurant and 2 shops. There are no local power stations or 'grid' supply. Villagers typically rely on wood for fuel, although use of gas stoves is increasing.
57	**Number of people displaced from homes in local population(s)**	None Put village committee in touch with 'Ignite' local renewable energy NGO

How to complete some of the rows in Part 3

Row 36 Describe, for example, community structures in the project area(s), number of migrants, extended families, nomadic population and levels of gender inequality.

Row 37 Describe the levels of health and education in the area, eg mortality rates and education levels. Describe any seasonal variations. These should be considered later in the project design as the project may be able to alleviate some of these issues, or be designed to be accessible to people with specific health or educational needs.

Row 39 Provide information relevant to the project. This may include the roles of women, village council and religious leaders, cultural celebrations and events. These may affect whether the project will be accepted in the community.

Row 40 List different ethnic groups and numbers or percentage of population in the area(s). This may raise equality issues about how best to serve project beneficiaries, or address conflict issues, eg different ethnic groups may have unequal access to natural resources.

Row 42 Villages, towns, population density, urban areas, rural areas etc.

Row 43 Describe the local community's livelihoods profile. Livelihoods may include, for example: farmers cultivating their own land; sharecropping on land of others; agricultural labourers; small traders; fishermen and women; pastoralists and agropastoralists; tourism workers; forestry workers; skilled labourers (eg builders, electricians, tailors, seamstresses and manufacturing labourers). Describe any seasonal variations in local livelihoods.

Row 44 State Yes/No and provide a description.

Row 45 Is there easy access to good quality water for washing and effective latrines? What are the solid and liquid waste disposal practices? Is the area badly littered? Is open defecation practised? How widely? Describe any seasonal variations.

Row 48 Explain how the community has been, or will be, consulted – see pages 7 and 15 for a description of why this is important, and how to carry this out. The person conducting the assessment must consult the community: both because a development agency has a responsibility to keep people who may be affected by the project informed of progress and to give them a responsibility to contribute their opinions and needs, and because the environmental assessment will benefit from local knowledge.

Row 49 Explain how you have met any relevant local or national legal requirements – see page 8 for a description of what these may be.

Row 50 For example, the burden of coping with lack of water, firewood, or other natural resources usually falls to women and children to meet. This can affect their health, security, women's ability to earn or care for sick or young family members, or prevent children from developing appropriately through play and attending school.

Row 52 This section may identify needs that can be addressed through the project, or skills based in the community that can resource the project.

Row 53 Describe typical farming methods and practices. Eg smallholder subsistence farming, use of fertilisers and pesticides, irrigation, damage to soils, flora and fauna.

Row 54 Describe the nature of each industry and its environmental impacts, including mining, quarries, tanneries, factories etc.

Row 55 Local transport infrastructure may affect the function of the project or the delivery of materials for the project implementation (or construction) stage.

Row 56 Generators, fossil fuel power stations, or renewable energy supplies? Dependence on wood resources. Describe any seasonal variations. Describe any opportunities to reduce energy consumption and increase renewable energy supply through this project.

Row 57 Note any known underlying causes of displacement/vulnerabilities.

When you have completed Steps 2 and 3, go back over Parts 1, 2 and 3 of the template and underline any ways that the project could harm or be harmed by the environment. This will help you complete Steps 4–6.

Step 4 Assess the impacts of the project on the environment

Columns A–E of Part 4 of the template

Step 4 of the EA helps you identify ways in which your project design could harm the environment. This will help you identify which project activities you want to modify to reduce or avoid the most significant impacts.

All projects impact the environment, whether they are implemented by international NGOs, governments or local communities. It is vital that you assess how your projects may impact the environment. Failure to do so could damage the environment. A few examples include pollution of drinking water; unsustainable use of wood leading to deforestation, desertification and loss of water resources; destruction of plant/animal habitats.

This is a very important part of the environmental assessment. The impacts of the project on the physical and also the human and economic environment should be considered because lack of consideration of these issues could lead to the project increasing vulnerabilities in the environment or causing unintended problems for the community. Impacts can be:

- short-term (temporary, recoverable impacts caused during project implementation/construction)
- long-term (permanent impacts)
- cumulative (level of impact increases with time).

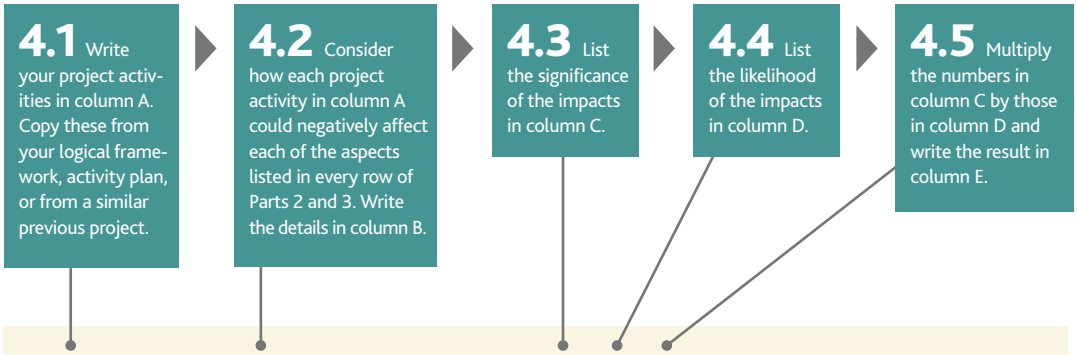
Development agencies have a responsibility to protect natural resources and not to harm the environment. They need to consider how best to work towards helping those people who are most vulnerable. People living in poverty tend to be the most dependent on the environment, and their livelihoods, health and food security are therefore the most likely to be affected when the environment is degraded or their access to natural resources is diminished.

Mike Wiggins / Tearfund

All projects harm or support the environment. Inappropriate disposal of solid waste from this market is creating a health hazard.

Complete Part 4, columns A to E of the template

The diagram below summarises the steps involved. A fuller description follows, with a worked example on pages 26–27.



A Project activity	B Impact of activity on environment	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Transporting crops for household consumption	Crop transport vehicle emissions.	2	2	4	
Transporting crops to market	Crop transport vehicle emissions.	2	2	4	
Disposing of waste	Inappropriate waste disposal including burning and burial.	2	3	6	
Preparing land for future years	Inappropriate agricultural techniques.	3	3	9	
Seed storage	Seed transport vehicle emissions.	2	2	4	
Land purchase	Soil degradation if unable to purchase sufficient land.	3	3	9	
Closure phase					
Handover of the project to the beneficiaries	Harmful agricultural techniques reintroduced by individuals.	3	2	6	
Land tenure	Insufficient land for nutritional requirements leading to poor agricultural practices and soil degradation.	3	4	12	

At this stage do not complete column F. This is completed in Step 6, and helps you to record how you will avoid or reduce the environmental impacts of your project.

Step 4.1

How to complete Part 4, columns A to E

There are five steps below. Follow each of these steps for each phase that your project will go through – ie set-up, implementation and closure phases.

It is likely that most activities will have some impact on the environment. Write them all down. They will be prioritised and reduced later.

Project activities – column A

Refer to the project's logical framework and/or activity plan, or to a similar previous project and transfer all the activities into **column A** of **Part 4** of the template.

Step 4.2

Possible impacts – column B

Consider how each of the project activities (**column A**) could negatively affect each of the aspects listed in **every** row of **Parts 2 and 3**. Provide the details in **column B**.

Step 4.3

Significance of the impacts – column C

List in **column C** the significance of the impacts, considering factors such as:

- value of the environmental aspect affected
- magnitude of the impact on the environmental aspect
- duration the activity will impact on the environment (0–5 years, 6–10 years, 10+ years, permanent)
- reversibility of the effect; time taken to restore the effect
- geographical area covered by the impact
- number of people (men/women, adults/children etc) affected by the impact.

Give the impacts numerical values as follows:

4 = Highly significant impact
The project will cause severe to permanent damage to an environmental aspect or natural resource, ie having a definite and extreme affect on health, water sources, livelihoods, ecosystems, animal habitats, ethnic conflict, or prevent sustainable management of natural resources etc.

3 = Moderately significant impact
The project threatens to cause a loss to health, water sources, livelihoods, ecosystems etc.

2 = Some significance
The project causes inconvenience or may cause some minor loss to health, water sources, livelihoods, ecosystems etc.

1 = Little or no significance
The project causes negligible inconvenience or loss.

Step 4.4

Likelihood of the impacts – column D

List in **column D** the likelihood of the impacts occurring. Give them numerical values as follows:

4 = Highly likely impact will occur
75–100% likelihood of impact occurring within 5 years.

3 = Moderately likely impact will occur
50–75% likelihood of impact occurring within 5 years.

2 = Some likelihood impact will occur
25–50% likelihood of impact occurring within 5 years.

1 = Little or no likelihood impact will occur
0–25% likelihood of impact occurring within 5 years.

Step 4.5

Risk of the impacts – column E

Multiply the numbers in **column C** by the numbers in **column D** and write the result in **column E**.

Significance X Likelihood = Risk

Priority projects

Project activities that have impacts with risk scores of between 6 and 16 are priority activities that are likely to need to be either adapted or else stopped and replaced (see page 33 for how to respond to the impacts). At your discretion, you may decide to adapt some of those with a score below 6 as well.

Worked example – Step 4

Part 4: Assessment of the impacts of the project on the environment

Sig = Significance of impact: (4= high; 1= low) **Lik**= Likelihood of impact: (4= high; 1= low) **Rsk**= Risk = Significance X Likelihood (Multiply figures C and D)

A Project activity	B Impact of activity on environment	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Set-up phase					
Prepare project records	Use of paper, electricity and transport.	1	1	1	
Community consultation	Consulting the community requires transport, food, water and electricity.	1	4	4	
Gaining project permits and landowner agreements	Minimal impact - transport, paper etc.	1	1	1	
Project officer training	Training has low impact. However, take account of: • carbon emissions from transport • paper usage • transport costs for trainers: fuel consumption • electricity, gas and water usage.	2	3	6	
Crop selection	New crops may not meet community nutritional needs or may be rejected by the community.	2	3	6	
Beneficiary identification	Identification has minimal impacts. However, it may be perceived to be biased, leading to community tensions.	2	2	4	
Beneficiary training	Training impacts are fuel, electricity, water, food.	1	1	1	
Signing contracts with beneficiaries	Minimal impacts.	1	1	1	
Implementation phase					
Buying seeds	Seed transport vehicle emissions.	2	2	4	
Buying tools	Tool transport vehicle emissions.	2	2	4	
Preparing land and sowing crops	Removal of scrub vegetation may affect wildlife habitats.	4	3	12	
This is very important to address through this project	Poor agricultural techniques – slash and burn and dependence on chemical fertilisers and pesticides – degrading soil and water quality.	3	4	12	
Water resources	Over-abstraction of water, impacting on others' livelihoods.	3	2	6	
Harvesting crops	Poor agricultural techniques exposing soil to degradation.	3	3	9	Also important to address this!
Storing crops	Crop transport vehicle emissions.	2	2	4	

At this stage do not complete column F. This is completed in Step 6, and helps you to record how you will avoid or reduce the environmental impacts of your project.

Impacts due to the project set-up phase are usually less significant and less obvious than those from the implementation phase.

A Project activity	B Impact of activity on environment	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Transporting crops for household consumption	Crop transport vehicle emissions.	2	2	4	
Transporting crops to market	Crop transport vehicle emissions.	2	2	4	
Disposing of waste	Inappropriate waste disposal including burning and burial.	2	3	6	
Preparing land for future years	Inappropriate agricultural techniques.	3	3	9	
Seed storage	Seed transport vehicle emissions.	2	2	4	
Land purchase	Soil degradation if unable to purchase sufficient land.	3	3	9	

Closure phase

Handover of the project to the beneficiaries	Harmful agricultural techniques reintroduced by individuals.	3	2	6	
Land tenure	Insufficient land for nutritional requirements leading to poor agricultural practices and soil degradation.	3	4	12	

It is important that your 'risk scores' are varied (not all very high or very low), so you can clearly identify the most important issues to address. It is unlikely that you will be able to avoid every single environmental impact. Circle the key issues that you agree the project design must resolve. If lots of scores are very high, you should consider a different project that meets the same objectives.

Step 5 Assess the impacts of the environment on the project

Columns A–E of Part 5 of the template

Step 5 of the EA helps you identify ways in which your project could be impacted by the environment. This will help you identify which project activities you want to modify to reduce or avoid the most significant impacts.

The physical environment around us is constantly changing. It is changed by personal, local, national and international actions. These include how we dispose of waste or use natural resources such as water, wood, plants and animals. The local environment is also affected by industry and government, eg through logging, water abstraction, disposal of waste, deforestation, intensive farming and heavy industry. In addition to this, global climate change is affecting temperatures, storm events, rainfall, floods, plants and animals and food security, around the world at a rapidly increasing pace. It is vital that we assess the local environment before designing our projects, otherwise they are at significant risk of failing due to unforeseen impacts from changes in the local environment.

The impacts of the physical, human and economic environment on the project should be considered because they may affect the success or long-term sustainability of the project. This part of the assessment helps an agency to measure the level of risk to a project from environmental fragilities in and around the project location(s) and helps to identify which project activities should be modified to reduce or avoid the most significant impacts.

Complete Part 5, columns A to E of the template

The diagram below summarises the steps involved. A fuller description follows on the next page, with a worked example on pages 30–31.

5.1 Copy your project activities across from Part 4 into Part 5 column A.

5.2 For each activity in column A, consider the aspects listed in every row of Parts 2 and 3 that could negatively affect the activity. These impacts could be current or predicted in the future. Provide the details in column B.

5.3 List the significance of the impacts in column C.

5.4 List the likelihood of the impacts in column D.

5.5 Multiply the numbers in column C by the numbers in column D and write the result in column E.

A Project activity	B Impact of environment on activity	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Buying tools	Beneficiaries have insufficient funds to purchase required tools. Crop failures could force community to spend savings on subsistence food.	4	2	8	
Preparing land and sowing crops	Increased work due to less fertile soil.	3	3	9	
	Increased work		3	9	

At this stage do not complete column F. This is completed in Step 6.

How to complete Part 5, columns A to E

There are five steps below. Follow each of these steps for each phase that your project will go through – ie set up, implementation and closure phases.

Step 5.1

Project activities – column A

Refer to the project's logical framework and activity plan and transfer all the activities into **column A** of **Part 5** of the template.

It is possible that some activities will not experience any environmental impacts.

Step 5.2

Possible impacts – column B

For each activity in **column A**, consider the aspects listed in every row of **Parts 2 and 3** that could negatively affect the activity. These impacts could be current or predicted in the future. Provide the details in **column B**.

Step 5.3

Significance of the impacts – column C

List in **column C** the significance of the impacts, considering factors such as value of the project activity, magnitude (extent) of the impact, duration and reversibility of the effect. Give the impacts numerical values as follows:

4 = Highly significant impact
This impact means the project can no longer proceed.

3 = Moderately significant impact
This impact will considerably affect the successful achievement of the project.

2 = Some significance
This impact will have some influence on the successful achievement of the project.

1 = Little or no significance
This impact is negligible to the successful achievement of the project.

Step 5.4

Likelihood of the impacts – column D

List in **column D** the likelihood of the impacts occurring. Give them numerical values as follows:

4 = Highly likely impact will occur
75–100% likelihood of impact occurring within 5 years.

3 = Moderately likely impact will occur
50–75% likelihood of impact occurring within 5 years.

2 = Some likelihood impact will occur
25–50% likelihood of impact occurring within 5 years.

1 = Little or no likelihood impact will occur
0–25% likelihood of impact occurring within 5 years.

Step 5.5

Risk of the impacts – column E

Multiply the numbers in **column C** by the numbers in **column D** and write the result in **column E**.

Significance X Likelihood = Risk

Priority projects

Project activities with risk scores of between 6 and 16 are priority activities that need to be either adapted or else stopped completely and replaced: see **Step 6**. At your discretion, you may decide to adapt some of those with a score below 6 as well.

Worked example – Step 5

Part 5: Assessment of the impacts of the environment on the project

Sig = Significance of impact: (4= high; 1= low) **Lik**= Likelihood of impact: (4= high; 1= low) **Rsk**= Risk = Significance X Likelihood (Multiply figures C and D)

Set-up phase

A Project activity	B Impact of environment on activity	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Prepare project records	None	0	0	0	
Community consultation	Community activities may reduce natural resources and affect the sustainability of the project.	3	3	9	
Gaining project permits and landowner agreements	Need to ensure project design doesn't break any existing agreements.	2	2	4	
Project officer training	Take account of failing crops in the area / land fertility.	3	4	12	
	Take account of literacy levels of beneficiaries.	1	4	4	
	Take account of dryness and dust in January to March.	2	3	6	
Crop selection	Take account of waterlogging.	3	3	9	
	Take account of crop pests increasing.	3	3	9	
	Take account of unpredictable rains.	3	4	12	
	Take account of seasonal price variations.	3	4	12	
Beneficiary identification	Take account of sub-group minority in Muslim community who are discriminated against.	3	3	9	
	Take account of households without young men.	2	4	8	
	Take account of vulnerability of older women and women who have lower literacy levels.	2	4	8	
Beneficiary training	Take account of lower literacy levels.	2	4	8	
Signing contracts with beneficiaries	Take account of potential conflict between different groups.	3	2	6	

Implementation phase

Buying seeds	Beneficiaries have insufficient funds to purchase seeds. Crop failures could force community to spend savings on subsistence food.	4	2	8	

In this assessment, people are considered as part of the environment that may affect the project.

The local physical environment is very unlikely to affect your community consultation. However, the community discussion revealed unsustainable cultural practices (ie the human and economic environment) that may ultimately impact on the project, so they are noted here.

Impacts on the project set-up phase are usually less significant and less obvious than those on the implementation phase.

At this stage do not complete column F. This is completed in Step 6, and helps you to record how to avoid or reduce the impacts of the environment on your project.

A Project activity	B Impact of environment on activity	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Buying tools	Beneficiaries have insufficient funds to purchase required tools. Crop failures could force community to spend savings on subsistence food.	4	2	8	
Preparing land and sowing crops	Increased work due to less fertile soil.	3	3	9	
	Increased work: hotter, drier, dusty season is more intense.	3	3	9	
	Increased work due to waterlogging.	3	4	12	
	Increased work due to crop pests increasing.	3	3	9	
	Increased work due to unpredictable rains and seasonal water shortages.	3	4	12	
	Floods and landslides could damage site.	3	2	6	
Water resources	Stream dries up seasonally.	3	4	12	
Harvesting crops	Floods may damage crops.	3	4	12	
Storing crops	Damage by rain or pests.	4	2	8	
Transporting crops for household consumption	Elderly and infirm unable to transport food.	4	3	12	
Transporting crops to market	Elderly and infirm unable to transport food.	3	3	9	
Disposing of waste	Waste burning contributes to soil degradation.	3	4	12	This affects success of project. Priority issue.
Preparing land for future years	Insufficient land or poor agricultural practices prevent crop rotation, leading to soil degradation.	3	4	12	
Seed storage	Stored seeds may be damaged by pests or water ingress.	4	2	8	
Land purchase	Crop failures could force community to spend savings on subsistence food.	4	2	8	

It is important that your 'risk scores' are varied (not all very high or very low), so you can clearly identify the most important issues to address. It is unlikely that you will be able to avoid every single environmental impact. Highlight the key issues that you agree the project design must resolve. If lots of scores are very high, you should consider a different project that meets the same objectives.

Closure phase

Handover of the project to the beneficiaries	Environmental impacts may prevent successful harvests, requiring ongoing project support.	3	3	9	
	Local community may not be happy to accept the new crop varieties.	3	2	6	
Land tenure	Environmental impacts may reduce income generation for land purchase .	3	4	12	

Step 6 Avoid or reduce the environmental impacts

Column F of Parts 4 and 5 of the template

Step 6 of the EA helps you to modify or find alternative project activities to reduce or remove negative impacts on or from the environment.

This is the most important stage of the environmental assessment. How you complete this section will determine whether or not your project protects or harms the environment.

In Parts 4 and 5, column E the risks of the project impacts on the environment and the risks of environmental impacts on the project have been assessed. This final step of the assessment explains which potential environmental impacts to prioritise and how to avoid or reduce them. This is recorded in column F of Parts 4 and 5 of the environmental assessment template.

Complete column F of Parts 4 and 5 of the template

The step-by-step instructions on page 35 are followed on pages 36–39 by a fictional example of the completed environmental assessment, Parts 4 and 5. During this step, you will need to refer to the Impact avoidance and reduction options on page 41 and, in consultation with the community or colleagues, make use of the Activity comparison table on page 47.

6.1 Mark each impact in Parts 4 and 5, column B, which has been assigned a risk score of 6 or more in column E.

6.2 Using the Impact avoidance and reduction options on page 41, identify actions you could take to respond to the impacts you marked in Part 4.
Select the best responses using the Activity comparison table on page 47 and write them in column F of Part 4.

6.3 Decide whether to adapt project activity or choose an alternative activity.

6.4 Repeat Steps 6.2 and 6.3, but this time for Part 5 of the EA.

6.5 Circle the project activities that you are proposing to amend or avoid.

A Project activity	B Impact of activity on environment	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Implementation phase					Include in M+E
Buying seeds	Seed transport vehicle emissions.	2	2	4	Transport seeds from market to site in one trip.
Buying tools	Tool transport vehicle emissions.	2	2	4	Transport tools from market to site in one trip.
Preparing land and sowing crops	Removal of scrub vegetation may affect wildlife habitats.	4	3	12 ✱	Survey the site to map species and identify those to protect.
	Poor agricultural techniques – slash and burn and dependence on chemical fertilisers and pesticides – degrading soil and water quality. Changing land clearance methods is key to project success!	3	4	12 ✱ Key activities	Training in organic fertilisers and natural pest control. Training in crop rotation. Training in land preparation – not removing all existing vegetation, intercropping, coppicing to protect crops.
Water resources	Over-abstraction of water, impacting on others' livelihoods	3	2	6 ✱	Plan water needs in advance. Introduce efficient water management techniques (eg

Impact avoidance and reduction options

This part of the EA helps you to identify potential environmental impact avoidance and reduction options. It is not prescriptive. You are likely to want to modify the options or use your own.

This table – part of which is shown below – is used in Step 6.2 to help you identify possible environmental impact avoidance and reduction options for project activities. Look at the headings on the left to find your 'sector' or project type. Then locate a category of response that fits your activities. Read the list of options to find possible modifications to your project(s). This is not an exhaustive or a prescriptive list. You are likely to want to modify the options or add your own.

If you identify multiple options, you can use the Activity comparison table (page 34) to evaluate which option is the most beneficial.

A full copy of the Impact avoidance and reduction options is provided on page 41.

Example

Impact avoidance and reduction options

A full copy of the Impact avoidance and reduction options is provided on page 41.

Environmental impact avoidance and reduction options

Food security

Seeds, tools and fertilisers

- ☐ Use local seeds where possible, procured and distributed through existing channels
- ☐ Limit introduction of non-local seeds to varieties tested locally and known to local users
- ☐ Avoid introduction of genetically modified seed varieties not already in use in the country
- ☐ Provide environmental education on use of tools and develop resource extraction plan which avoids negative environmental impacts where appropriate
- ☐ Education and extension advice on fertiliser use. Limit use to very specific agricultural needs

Harvesting wild plants/fruits

- ☐ Establish harvest system based on a balance between rates of extraction and regeneration

Expansion of area or type of cultivation

- ☐ Implement land-use plans, taking into account habitat diversity and sustainability of land-use systems
- ☐ Reforestation and afforestation programmes
- ☐ Soil conservation activities

Expansion of livestock use

- ☐ Implement land-use plan, taking into account habitat diversity and sustainability of land-use systems
- ☐ Establish/expand animal disease monitoring and control system

New farming or livestock raising activities

- ☐ Implement land-use plans, taking into account habitat diversity and sustainability of land-use systems
- ☐ Establish/expand animal disease monitoring and control system
- ☐ Institute land conservation activities

Fishing

- ☐ Sustainable fishing methods, eg lines, large-hole nets. Avoid dragnets/trawlers, clear cutting, poisons and explosives
- ☐ Resource harvesting plan which assures adequate supplies for current and future needs
- ☐ Monitor aquatic resource use and undertake education programme for resource users
- ☐ Limit or avoid intro[illegible] and fish produ[illegible]

Activity comparison table

for environmental impact avoidance and reduction

This table assists you in comparing a number of environmental impact avoidance or reduction options and evaluating which is the most beneficial.

Using a table like the one below, focus group members can evaluate the top five or six issues identified and agree on how effective different options are for reducing their impact. The group should develop its own criteria based on participatory discussions. The criteria in this table are scored with 1, 2 or 3 ticks with ✓ being least and ✓✓✓ being most effective in meeting the criteria (lines, number values or stones in squares marked on the ground could also be used).

Total the ticks for each option, and enter the results in the final column. Discuss and select the most appropriate option.

A template for the Activity comparison table is provided on page 47.

Example

Activity comparison table

Comparing options for the Somuni Women's Year-round Vegetable Gardening project. It responds to the high risk that harvesting crops will involve poor agricultural techniques that expose soil to degradation.

		Criteria								
		Helps the most vulnerable	Brings greatest resilience	Fast to do	Environmentally sustainable	Low cost	Culturally appropriate	Helps more people	Risks can be appropriately allocated and managed	TOTAL
Adaptation options	Drip-feed irrigation	✓✓	✓	✓✓	✓	✓✓✓	✓✓	✓	✓	13
	Rainwater harvesting	✓✓	✓✓	✓	✓✓✓	✓✓	✓✓	✓✓	✓✓	16
	Rainwater retention bunds	✓✓	✓✓✓	✓✓	✓✓	✓	✓	✓✓✓	✓✓✓	17

How to complete column F in Parts 4 and 5

The five steps below explain how to identify ways to avoid or reduce environmental impacts on or from your project.

Step 6.1

Identify priority risks

In **Parts 4 and 5**, mark with an asterisk (*) each impact which has been assigned a risk score of 6 or above in **column E**. At your discretion, also highlight those impacts assigned a lower risk score, but which you also wish to address. In doing this, ensure you keep to a realistic number of the highest priority issues to respond to.

If you are working on a computer copy of the assessment and an impact has been assigned a risk score of less than 6 and you don't wish to address it, you may choose to remove the line from the assessment, or save a new version of the assessment with these lines deleted. Otherwise the assessment may become very long and unmanageable.

Step 6.2

Identify possible responses to reduce impact on environment

Consider what actions you could take to respond to the most significant impact(s) of project activities on the environment. Write your proposed response to reduce or eliminate this impact in **column F** of **Part 4** of the assessment.

In completing this step:

- Read through the **Impact avoidance and reduction options** on page 41.
- Use the **Activity comparison table** on page 47 to choose the most beneficial response where you have identified several.
- Research and discuss options for responding to the impacts by asking community members and, if possible, professional advisers such as government technical officers or other development workers.
- Participatory tools including focus groups could be used to help discuss and select appropriate activities for managing the risk.

If too many project activities need changing in response to the impacts identified and you lack the money or resources to make these changes, you may wish to stop the project (and if possible choose a different one which meets the same needs).

Step 6.3

Decide whether to adapt the project activity or choose an alternative

Decide whether to:

- adapt the project activity to reduce or avoid the risk of it having a negative affect on the environment (**Part 4**)
- choose an alternative project activity to avoid the risk while still achieving similar project objectives.

Step 6.4

Decide how to reduce impact of environment on project activity

Repeat **Steps 6.2 and 6.3**, but this time for **Part 5** – responding to the impacts of the environment on the project.

Step 6.5

Summarise the project activities to modify or avoid

You have now completed the environmental assessment. You should now write a list of the project activities that you are proposing to amend or avoid. Alternatively, you may want to circle and number them on this assessment.

It is very important that you clearly identify project activities to be amended, and clearly record the reasons for making these changes within the assessment record. This will assist in the project monitoring and evaluation, where these decisions can be reviewed as the project progresses.

Worked example – Step 6

Part 4: Assessment of the impacts of the project on the environment

Sig = Significance of impact: (4= high; 1= low) **Lik**= Likelihood of impact: (4= high; 1= low) **Rsk**= Risk = Significance X Likelihood (Multiply figures C and D)

Set-up phase

A Project activity	B Impact of activity on environment	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Prepare project records	Use of paper, electricity and transport	1	1	1	Not applicable
Community consultation	Consulting the community requires transport, food, water and electricity.	1	4	4	Facilitator should ensure communities are aware of, and discuss, potential impacts on the environment.
Gaining project permits and landowner agreements	Minimal impact - transport, paper etc.	1	1	1	Consider natural resource replenishment in project design.
Project officer training	Training has low impact. However, take account of: • carbon emissions from transport • paper usage • transport costs for trainers: fuel consumption • electricity, gas and water usage.	2	3	6*	Train project officer in environmental sustainability and reduction of personal, organisational and project environmental impacts.
Crop selection	New crops may not meet community nutritional needs or may be rejected by the community.	2	3	6*	Commence with pilot programme and arrange exchange visit.
Beneficiary identification	Identification has minimal impacts. However, it may be perceived to be biased, leading to community tensions.	2	2	4	Facilitate community-led beneficiary selection. Ensure this assists most vulnerable groups, eg women or people living with HIV or AIDS.
Beneficiary training	Training impacts are fuel, electricity, water, food.	1	1	1	Plan to minimise impacts.
Signing contracts with beneficiaries	Minimal impacts.	1	1	1	Not applicable

Low cost and easily implemented

Project will fail if we get this wrong

Involve agricultural technical officer

When completing column F you should consider every possible way that you could avoid or reduce impacts on or from the environment. Through participatory discussion, using the comparison table at the end of this section, you can then agree which actions to write in this table. It is probable that not all of these can be implemented cost-effectively. Circle the key 5 to 10 activities that must be implemented for the project to be considered sustainable.

Implementation phase

A Project activity	B Impact of activity on environment	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Buying seeds	Seed transport vehicle emissions.	2	2	4	Transport seeds from market to site in one trip.
Buying tools	Tool transport vehicle emissions.	2	2	4	Transport tools from market to site in one trip.
Preparing land and sowing crops	Removal of scrub vegetation may affect wildlife habitats.	4	3	12*	Survey the site to map species and identify those to protect.
	Poor agricultural techniques – slash and burn and dependence on chemical fertilisers and pesticides – degrading soil and water quality.	3	4	12*	Training in organic fertilisers and natural pest control. Training in crop rotation. Training in land preparation – not removing all existing vegetation, intercropping, coppicing to protect crops.
Water resources	Over-abstraction of water, impacting on others' livelihoods.	3	2	6*	Plan water needs in advance. Introduce efficient water management techniques (eg drip-feed irrigation, rainwater harvesting and rainwater bunds).
Harvesting crops	Poor agricultural techniques exposing soil to degradation.	3	3	9*	Training in less invasive harvesting techniques.
Storing crops	Crop transport vehicle emissions.	2	2	4	Visit storage facility taking the fewest journeys possible. Or relocate storage next to vegetable gardens.
Transporting crops for household consumption	Crop transport vehicle emissions.	2	2	4	Transport vegetables to several homes in one trip.
Transporting crops to market	Crop transport vehicle emissions.	2	2	4	Make sure vehicle is used efficiently: full with produce and people. Minimise journeys.
Disposing of waste	Inappropriate waste disposal including burning and burial.	2	3	6*	Set up community composting and use to fertilise soil.
Preparing land for future years	Inappropriate agricultural techniques.	3	3	9*	Training in good practice: crop rotation, organic fertilisers, composting, natural pest control.
Seed storage	Seed transport vehicle emissions.	2	2	4	Visit storage facility taking the fewest journeys possible.
Land purchase	Soil degradation if unable to purchase sufficient land.	3	3	9*	Advocacy on land purchase.

Closure phase

Handover of the project to the beneficiaries	Harmful agricultural techniques reintroduced by individuals.	3	2	6*	Establish a Farmers Cooperative Management Committee who rule on farming methods.
Land tenure	Insufficient land for nutritional requirements leading to poor agricultural practices and soil degradation.	3	4	12*	Advocacy on land rights.

Part 5: Assessment of the impacts of the environment on the project

Sig = Significance of impact: (4= high; 1= low) **Lik**= Likelihood of impact: (4= high; 1= low) **Rsk**= Risk = Significance X Likelihood (Multiply figures C and D)

A Project activity	B Impact of environment on activity	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Set-up phase					
Prepare project records	None	0	0	0	Not applicable
Community consultation	Community activities may reduce natural resources and affect the sustainability of the project.	3	3	9*	Facilitator should ensure communities are aware of, and discuss, environmental fragilities and potential impacts on the project. Include in M+E
Gaining project permits and landowner agreements	Need to ensure project design doesn't break any existing agreements.	2	2	4	Consider implications of environmental changes on the project sustainability.
Project officer training	Take account of failing crops in the area / land fertility.	3	4	12*	Introduce resilient seeds.
	Take account of literacy levels of beneficiaries.	1	4	4	Introduce training from local organisation who successfully implemented a gardening project.
	Take account of dryness and dust in January to March.	2	3	6*	Plant trees to reduce dust. Community provide labour?
Crop selection	Take account of waterlogging.	3	3	9*	Introduce drainage / flood diversion channels.
	Take account of crop pests increasing.	3	3	9*	Plant natural pest repellents. Arrange exchange visits?
	Take account of unpredictable rains.	3	4	12*	Introduce rainwater harvesting and drip-feed irrigation.
	Take account of seasonal price variations.	3	4	12*	Introduce seed banks.
Beneficiary identification	Take account of sub-group minority in Muslim community who are discriminated against.	3	3	9*	Aim to ultimately include all willing households in community market gardening. Commence with those who are most enthusiastic. Include more vulnerable people in second phase. Separate men's and women's gardens.
	Take account of households without young men.	2	4	8*	
	Take account of vulnerability of older women and women who have lower literacy levels.	2	4	8*	Ask children from community to help design
Beneficiary training	Take account of lower literacy levels.	2	4	8*	Develop non-written training materials – storytelling, street drama, songs, pictorial instruction leaflets.
Signing contracts with beneficiaries	Take account of potential conflict between different groups.	3	2	6*	Include representatives from all parts of the communities in the project design. Ensure the facilitator helps the community to explore whether some people in the village have greater vulnerabilities than others.
Implementation phase					
Buying seeds	Beneficiaries have insufficient funds to purchase seeds. Crop failures could force community to spend savings on subsistence food.	4	2	8*	Establish community bank and savings scheme.

A Project activity	B Impact of environment on activity	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Buying tools	Beneficiaries have insufficient funds to purchase required tools. Crop failures could force community to spend savings on subsistence food.	4	2	8	Establish community bank and savings scheme and equipment loan scheme or low interest purchasing schemes. Ask Seva Somuni local NGO if they can do this
Preparing land and sowing crops	Increased work due to less fertile soil.	3	3	9	Purchase drought- / flood- / pest-resilient seeds. Plant trees to shade/ protect the site. Introduce flood diversion channels. Introduce water retaining ponds. Introduce demi-lune planting method. Introduce water bunds. Involve local council agricultural officer
	Increased work: hotter, drier, dusty season is more intense.	3	3	9	
	Increased work due to waterlogging.	3	4	12	
	Increased work due to crop pests increasing.	3	3	9	
	Increased work due to unpredictable rains and seasonal water shortages.	3	4	12	
	Floods and landslides could damage site.	3	2	6	
Water resources	Stream dries up seasonally.	3	4	12	Rainwater harvesting or drip-feed irrigation.
Harvesting crops	Floods may damage crops.	3	4	12	Flood diversion channels. Training in care of new crop types.
Storing crops	Damage by rain or pests.	4	2	8	Construct new weather-tight and pest-resistant crop stores. Establish regular inspection regime. M+E
Transporting crops for household consumption	Elderly and infirm unable to transport food.	4	3	12	Establish skills exchange trading system, eg food transport by others in exchange for childcare, cooking, sewing etc.
Transporting crops to	erly and infirm unable to transport food.	3	3	9	Skills exchange trading.
	te burning contributes to soil adation.	3	4	12	Critical to success. Awareness campaign about harm from slash and burn practices. Establish composting scheme to recycle agricultural and household waste to increase soil fertility.
	cient land or poor agricultural es prevent crop rotation, leading to radation.	3	4	12	Advocacy project to access sufficient land. Awareness programme to improve agricultural practices.
	tored seeds may be damaged by pests or water ingress.	4	2	8	Construct elevated seed stores and store grain on raised pallets. Regular inspection for pests.
Land purchase	Crop failures could force community to spend savings on subsistence food.	4	2	8	Develop community bank and savings scheme. Community based organisation trained in land purchasing procedures. Explore rental of land from adjacent landowners. Advocacy work on women's rights to own land?

When you have completed the whole assessment, read back over all sections and circle the most important issues that may harm the environment. Addressing these will improve your project design.

Closure phase

Handover of the project to the beneficiaries	Environmental impacts may prevent successful harvests, requiring ongoing project support.	3	3	9	Regular monitoring and community meetings, to address problems as they occur.
	Local community may not be happy to accept the new crop varieties.	3	2	6	
Land tenure	Environmental impacts may reduce income generation for land purchase .	3	4	12	Develop land rental contingency plans.

Monitoring and evaluation

Information gathered throughout the environmental assessment should be used as a baseline against which you can monitor and evaluate the success of the project activities.

It is important that an environmental assessment is not carried out once, and then forgotten about. Impacts of the project on the environment and the environment on the project should be reviewed at regular intervals throughout the project life. This should be true for all the projects carried out by a development agency.

Usual monitoring and evaluation

In column F, Parts 4 and 5 of the environmental assessment, you should have listed some changes to project activities and some new project activities. These changes and new activities should be integrated into the usual project action plan and project cycle. In this way the activities will go through the usual monitoring and evaluation processes, to check the effectiveness of the project.

The information collected in Steps 2, 3, 4 and 5 of the environmental assessment can be used as baseline information. This means that progress can be measured against what the situation was at the beginning of the project.

Environment-focused monitoring and evaluation

A development agency should make sure it integrates the following into its usual monitoring and evaluation processes:

- monitoring the actual impacts of the project on the environment. This may mean that more measures need to take place mid-way through a project to lessen the impacts on the environment
- keeping track of any changes in the physical, human and economic environment which may negatively affect the project. This may mean that project activities need to be adapted further mid-way through a project.

Good practice: peer audit

It is important that we regularly check that our approach to environmental assessments across our projects is consistent, high quality, and that the findings are implemented appropriately. This also helps us to be accountable to our communities and donors. One method of ensuring this is to make an agreement with another agency to peer review an agreed quantity of randomly selected assessments. We should encourage the other agency to give us feedback that will challenge each of us to improve. Useful feedback could include developing good environmental sustainability practice in projects.

Field tools for environmental assessment

Impact avoidance and reduction options template

Download this document from:
http://tilz.tearfund.org/Topics/Environmental+Sustainability

Tick and modify options that help improve your project – or add your own improvements.

This table helps you identify possible environmental impact avoidance and reduction options for project activities. Look through the section headings on the left to find an activity related to your project. Then locate a category of response that fits your activities. Read the list of options to find suitable modifications to your projects. This is not an exhaustive or a prescriptive list. You are likely to want to modify the options or add your own.

Environmental impact avoidance and reduction options

Capacity building, advocacy and networking

Building capacity of vulnerable groups

A wide range of capacity-building work to develop sustainable project and cultural activities – for example:

- ☐ Training in sustainable agricultural practices
- ☐ Solid waste management
- ☐ Liquid waste (sewage) treatment
- ☐ Use of renewable locally produced building materials
- ☐ Encouraging sustainable income diversity
- ☐ Developing home gardens and local markets
- ☐ Hygiene awareness

Advocacy and networking

A wide range of advocacy work with vulnerable people – for example:

- ☐ Securing land tenure rights and access to renewable resources
- ☐ Securing rights of access to water supplies for small-scale farmers
- ☐ Protection of wildlife and flora
- ☐ Forming coalitions and networks to support and help resource initiatives (best practices, exchanges, gathering and sharing resources)
- ☐ Setting up a project advisory committee consisting of stakeholders from various civil society organisations, academic institutions, government departments
- ☐ Teaching adult learners and children about the causes and implications of environmental degradation and the things that each individual, family and community can do to avoid or reduce its impact (eg conserve water, practice sustainable integrated agriculture/agroforestry, waste management, etc)

Environmental impact avoidance and reduction options

Food security

Capacity building

- ☐ Land tenure rights advocacy
- ☐ Demonstrate year-round homestead vegetable gardening
- ☐ Involve children and young people in community discussions related to impact avoidance or reduction activities such as planting trees and introducing new agroforestry techniques
- ☐ Support the diversification of income-generating measures
- ☐ Sustainable natural resource management
- ☐ Encourage the use of sustainable agriculture techniques to improve food security during dry periods
- ☐ Build strength of local organisations to reverse environmental degradation: building capacity within community to manage activities and finance

Maximise biodiversity, soil fertility and appropriate land use

- ☐ Crop rotation to maintain soil quality, minimise erosion (reducing the risk of desertification) and plant less water-dependent crops in drier years (rotate legumes and other crops)
- ☐ Training in soil care: protection of natural features, watercourses, trees; avoiding 'slash and burn' practices
- ☐ Community forest management and reforestation
- ☐ Crop diversification and crop mixing; mix of crops and trees in agroforestry systems to spread risk and increase biodiversity; animals can also be integrated into these systems, allowing effective recycling of manure and providing a valuable source of protein
- ☐ Use 'closed loop' agricultural technique, to maximise crop use and soil quality at all stages

Protecting and improving fish stock

- ☐ Encourage communities to conserve coastal mangroves and other vegetation to reduce rate of erosion and protect fish breeding grounds
- ☐ Look at options for sustainable aquaculture such as fish farming in ponds using crop by-products for feed and integrated livestock-fish farming to improve the supply of protein-rich food in the area
- ☐ Advocacy to reduce or relocate coastal dredging, eg for sand or gravel for construction

Agrochemicals

- ☐ Avoid or minimise, or use products with low toxicity
- ☐ Training and education programmes on agrochemical safety
- ☐ Establish system for safer handling, cleaning and disposal of containers and equipment
- ☐ Provide education and extension advice on use of agrochemicals
- ☐ Limit use to very specific agricultural needs
- ☐ Use Integrated Pest Management approaches
- ☐ Provide education and advice on natural organic pest control

Environmental impact avoidance and reduction options

Food security

Seeds, tools and fertilisers

- ☐ Use local seeds where possible, procured and distributed through existing channels
- ☐ Limit introduction of non-local seeds to varieties tested locally and known to local users
- ☐ Avoid introduction of genetically modified seed varieties not already in use in the country
- ☐ Provide environmental education on use of tools and develop resource extraction plan which avoids negative environmental impacts where appropriate
- ☐ Education and extension advice on fertiliser use. Limit use to very specific agricultural needs

Harvesting wild plants/fruits

- ☐ Establish harvest system based on a balance between rates of extraction and regeneration

Expansion of area or type of cultivation

- ☐ Implement land-use plans, taking into account habitat diversity and sustainability of land-use systems
- ☐ Reforestation and afforestation programmes
- ☐ Soil conservation activities

Expansion of livestock use

- ☐ Implement land-use plan, taking into account habitat diversity and sustainability of land-use systems
- ☐ Establish/expand animal disease monitoring and control system

New farming or livestock raising activities

- ☐ Implement land-use plans, taking into account habitat diversity and sustainability of land-use systems
- ☐ Establish/expand animal disease monitoring and control system
- ☐ Institute land conservation activities

Fishing

- ☐ Sustainable fishing methods, eg lines, large-hole nets. Avoid dragnets/trawlers, clear cutting, poisons and explosives
- ☐ Resource harvesting plan which assures adequate supplies for current and future needs
- ☐ Monitor aquatic resource use and undertake education programme for resource users
- ☐ Limit or avoid introduction of new fish varieties and fish production methods

Cooking

- ☐ Use fuel-efficient stoves and cooking methods
- ☐ Resource management plan for resources needed to cook or support costs of food preparation
- ☐ Consider organising cooking process to reduce air pollution and fuel demand (eg communal kitchens, dining halls)

Environmental impact avoidance and reduction options

Irrigation (expanded)

Efficient irrigation

- ☐ Work with communities to develop strategies for water harvesting
- ☐ Minimise water wastage through more efficient techniques (eg drip-feed rather than flood)
- ☐ Maintain grass waterways – to conserve run-off or drain floods
- ☐ Use techniques such as contour-bunding and check-dams to delay water flow and improve infiltration
- ☐ Treat wastewater for re-use in agriculture
- ☐ Protect and reforest water catchment areas to improve groundwater resources
- ☐ Establish management plan for water use which assures adequate water for current and future needs
- ☐ Change types of crops / cropping systems and water use
- ☐ Establish filtering system

Construction

NB: 'Construction' includes shelter, public buildings, roads and infrastructure

Land conservation and protection

- ☐ Develop and follow resource management and land-use management plans
- ☐ Assess vulnerabilities in construction area and change siting or construction methods accordingly
- ☐ Site buildings above flood levels and away from steep slopes that might destabilise during heavy rains
- ☐ Avoid building on or near slopes at risk of mudslides or landslides
- ☐ Change architecture of buildings, eg passive lighting, heating and cooling
- ☐ Establish new building codes
- ☐ Demarcate certain zones as off-limits

Roads, paved or other, new and existing

- ☐ Develop and follow land-use plans
- ☐ Limit access to roads
- ☐ Verify road design against flooding/drainage risk assessment
- ☐ Incorporate erosion mitigation measures in road construction activities

Environmental impact avoidance and reduction options

Water supply

Fresh water conservation options – general

- ☐ Street drama about community water resource management
- ☐ Government water transfer programmes
- ☐ Advocacy: securing rights of access to water supplies for small-scale farmers
- ☐ Public health / hygiene campaigns on water collection, conservation and non-contamination
- ☐ Integrated Water Resource Management and Water Basin Management
- ☐ Conserve and reduce run-off, eg dykes, re-use grey water
- ☐ Maximise water capture and storage, including rainwater harvesting, eg using rooftops and tanks
- ☐ Fixation points with well point monitoring
- ☐ Train health workers and others to respond appropriately to crises such as drought
- ☐ Establish and maintain water treatment system
- ☐ Design and maintain water supply structure to minimise standing water and vector breeding sites
- ☐ Plan water provision based on anticipated need and use plan for delivery area which allows current and future needs to be met
- ☐ Consider economic incentives to conserve water
- ☐ Use hazardous chemicals as recommended and limit inappropriate use through education

Conserving fresh water quality

- ☐ Protect water sources and communal water points from pollution: Water Safety Plans
- ☐ Desalination systems
- ☐ Monitor groundwater salinity and abstraction. Over-abstraction can cause salinisation

Sanitation

Liquid and solid waste

- ☐ Land tenure rights advocacy
- ☐ Establish and maintain sites for sanitary and safe waste disposal operating at international standards
- ☐ Limit waste movement through appropriate collection systems meeting accepted best practices
- ☐ Minimise opportunities for disease transmission and vectors
- ☐ Establish and maintain environmental monitoring program covering air, land and water pollution

Healthcare and nutrition

Protecting and improving health, nutrition and well-being – general

- ☐ Increase preventative and curative healthcare
- ☐ Increase disease surveillance
- ☐ Establish system for safe disposal of all wastes (solid and liquid)
- ☐ Develop a resource management plan for harvesting of local medicinal herbs and plants
- ☐ Awareness-raising among health professionals about the impacts of pollution and other changes in the environment on increased spread of disease
- ☐ Support participatory preventative measures, eg washing hands, reducing open water containers that breed mosquitoes

Environmental impact avoidance and reduction options

Industry

- ☐ Develop pollution mitigation and abatement plans, incorporating financial incentives where appropriate
- ☐ Develop site-use plans incorporating transport and population support needs based on level of industrial operation
- ☐ Develop plans for supply of services (eg water, education) for expected population in industrial area
- ☐ Develop and implement a sustainable resource-use plan for target industry

SMEs

- ☐ Environmental impact review performed for each enterprise supported. A simple checklist may be sufficient if a number of similar types of Small- and Medium-sized Enterprises (SME) are to be supported
- ☐ Waste disposal plans incorporated into enterprise business plan and monitored
- ☐ Hazards and risks of enterprises assessed and mitigation measures identified before support provided

Relief supplies

- ☐ Use minimal packaging – biodegradable, multi-use or recyclable where possible
- ☐ Collect packaging as part of distribution programme. Re-use packaging
- ☐ Develop programme of education and facilities for safe disposal of personal hygiene materials
- ☐ Base assistance on needs assessment, including survivor input
- ☐ Avoid inappropriate materials
- ☐ Select assistance based on local social and economic conditions

Rubble removal

- ☐ Develop and follow plans to recycle rubble and dispose of unusable materials in ways which minimise negative environmental impact
- ☐ Some rubble, such as asbestos sheets, is hazardous to humans and the environment and will require special handling and disposal methods
- ☐ Look for opportunities to benefit communities – eg involving community in sorting rubble and selling into local construction sector

(Re) settlement

- ☐ Land tenure rights advocacy
- ☐ Develop and follow land-use plan in reconstruction and siting of settlements
- ☐ Conduct hazard and risk assessment of existing and new settlement sites and incorporate results into site selection, planning and construction methods
- ☐ Involve community in settlement design to ensure inclusion of all necessary amenities, allow for local customs (eg cooking methods or funeral practices), ensure peace-building between communities etc

Other

General options

- ☐ Include the poorest, most vulnerable people in planning and in education programmes
- ☐ Conflict sensitivity and/or peace-building work to ensure sustainable resource management
- ☐ Building good governance to ensure environmental protection

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Field tools

Activity comparison table template

Use this table to compare benefits/ strengths of different options.

Download this document from:
http://tilz.tearfund.org/Topics/Environmental+Sustainability

Compare alternative proposed adaptation options using this table, to determine which is the most robust/sustainable.

The group should develop its own criteria based on participatory discussions. The criteria in this table are scored with 1, 2 or 3 ticks, with ✓ being least and ✓✓✓ being most effective in meeting the criteria (lines or number values could also be used).

Total the ticks for each option, and enter the results in the final column. Discuss and select the most appropriate option.

		Criteria								
		Helps the most vulnerable	Brings greatest resilience	Fast to do	Environmentally sustainable	Low cost	Culturally appropriate	Helps more people	Risks can be appropriately allocated and managed	TOTAL
Adaptation options										

Field tools

Medium-level environmental assessment template

Download this document from: http://tilz.tearfund.org/Topics/Environmental+Sustainability

It would be easiest to complete Steps 4–6 on a computer using the Word document from the download. Alternatively, expand the boxes before you print or continue your notes on clearly labelled paper. You may also wish to delete rows that are not relevant to your project and add in other rows for additional relevant questions.

Date	
Assessment project manager	
EA Form completed by	

Part 1: Description of the project

1	(Lead) Organisation's name			
2	(Proposed) Project name			
3	Name and contact details of lead assessment officer			
4	Project location(s)			
5	Registered landowner(s) and contact details (a letter of consent should be provided where possible)			
6	Project goal and desired benefits: - project need/purpose - project beneficiaries - main project activities			
7	Anticipated length of project including a description of set-up, implementation and closure phases (if relevant)	**Phase**	**Expected start**	**Expected completion**
		Project set-up		
		Implementation		
		Closure		
		Total		
8	Minimum land area required for the project			
9	Available total land area within the identified location(s)			
10	Responsible agricultural / water and sanitation officials and contact information			

Optional questions

11	Name and contact details of any other agency involved in the project	
12	Records of similar work/projects attempted in the area and environmental outcome/impact	
13	Does the site(s)/project require any clearance? (provide extent of this)	

Part 2: Description of the project's physical environment

14	**Topography and natural features in project site(s) (Is the area flat, sloping, hilly or very varied?)**			
15	**Project position on site(s)**			
16	**Local climate**			
17	**Typical vegetation ground cover, eg scrubland, grassland, trees, woods, agricultural land, marsh, coastal scrub and mangroves**		**Typical ground cover**	**% of each ground cover type**
		In project area		
		On the margins of the project area		
18	**Flora and fauna (common plants, wild flowers, grasses, animals)**			
19	**Natural resources in the local area(s)**			
20	**Current local use of natural resource management methods**			
21	**Existing environmental conservation methods or structures (eg water or soil conservation structures and flood diversion channels)**			
22a	**Source of and distance to fresh surface water from project site(s)**	**Source** ☐ Spring / canal ☐ Tank / reservoir ☐ Perennial stream ☐ Seasonal stream / pond / lake ☐ River ☐ Lagoon ☐ Sea / ocean ☐ None	**Distance**	
22b	**Surface water use within project site(s) and downstream**	☐ Drinking / cooking ☐ Washing / bathing ☐ Irrigation ☐ Animal use		
22c	**Surface water quality within the project site(s) (Note: <u>all</u> surface water should be treated prior to consumption)**	☐ Poor (polluted with external materials) ☐ Moderate (not using for domestic purposes) ☐ Good (using for domestic purposes)		
22d	**Ground water availability within the project site(s)**	☐ Dug well ☐ Borehole ☐ Other (specify)		
22e	**Ground water use within the project site(s) and downstream**	☐ Drinking / cooking ☐ Washing / bathing ☐ Irrigation ☐ Animal use		
22f	**Ground water quality within the project site(s)**	☐ Poor (polluted with external materials) ☐ Moderate (not using for domestic purposes) ☐ Good (using for domestic purposes)		
22g	**Current local use of water conservation methods**			

23	**Vector-borne disease levels in local area(s) (diseases carried by an insect or other organism [the vector] eg malaria and dengue carried by mosquitoes)**	
24	**Land or soil erosion on project site(s) or neighbouring land**	
25	**Air quality in local area (pollution, dust, smoke, acidic rain, etc)**	
26	**Incidence of climate-related hazards**	☐ Floods ☐ Prolonged droughts ☐ Cyclones (hurricanes, typhoons) / tidal waves ☐ Other
27	**Are there any environmentally sensitive areas in, or within 250 metres of, the project area(s)? Please list.**	

Optional questions

28	**Soils in the project site(s)**	
29	**Crop pest levels in project site(s) and neighbouring area**	
30	**Crop failures and any changes in crop varieties planted locally, eg high yield varieties**	
31	**Livestock health in local area(s)**	
32	**Fish stocks quality and availability in local area(s)**	
33	**Coastal erosion in project site(s) or neighbouring land**	
34	**Geological hazards**	☐ Landslides ☐ Rock falls ☐ Subsidence ☐ Earthquakes ☐ Volcanoes ☐ Other

Part 3: Description of the project's human and economic environment

35	**Population in area(s) (male / female, adult / children)**	
36	**Social structure in local population(s)**	
37	**Health and education levels of local population(s)**	
38	**Proportion of people (male / female) living with HIV and AIDS in local population(s)**	
39	**Relevant cultural values, customs and ways of life which are central to the community(ies) in the local area(s)**	
40	**Ethnic/religious composition of people in local area(s)**	

41	**Land ownership (male / female)**	
42	**Settlements**	
43	**Main livelihoods**	
44	**Is there a resource base to support livelihoods in the local area(s)? If so, what?**	
45	**Sanitary conditions in local area**	
46	**Level of community hygiene awareness**	
47	**Peace (lack of conflict) in local community(ies)**	
48	**Community consultation and participation**	
49	**Local legal requirements or constraints – eg permits to abstract water or dispose of waste, or restrictions on land ownership (tenure)**	
50	**Note vulnerable groups/members of the community(ies)**	

Optional questions

51	**Quality of buildings**		
52	**Institutions and location / distance from project site(s)**	**Institution**	**Location / distance**
53	**Agricultural systems used locally**		
54	**Industry and other land use in local area(s)**		
55	**Transport infrastructure and their usual usage in local area(s) (occasional/heavy)**	**Transport**	**Usual usage**
		Roads	
		Railways	
		Rivers	
		etc	
56	**Quality and availability of electricity supplies within the local vicinity**		
57	**Number of people displaced from homes in local population(s)**		

Part 4: Assessment of the impacts of the project on the environment

Sig = Significance of impact: (4= high; 1= low) **Lik**= Likelihood of impact: (4= high; 1= low) **Rsk**= Risk = Significance X Likelihood (Multiply figures C and D)

A Project activity	B Impact of activity on environment	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Set-up phase					
Implementation phase					
Closure phase					

Part 5: Assessment of the impacts of the environment on the project

Sig = Significance of impact: (4= high; 1= low) **Lik**= Likelihood of impact: (4= high; 1= low) **Rsk**= Risk = Significance X Likelihood (Multiply figures C and D)

A Project activity	B Impact of environment on activity	C Sig	D Lik	E Rsk	F Avoid or reduce impacts
Set-up phase					
Implementation phase					
Closure phase					

When you have completed the whole assessment, read back over all sections and highlight the most important issues that affect whether or not the project will harm or support the environment. You can also make any important additions or corrections at this stage.

Appendix A Does your project need a basic-level, medium-level or higher-level environmental assessment?

High-impact projects such as major dams, power stations, highways, very large farms, high-output water treatment plants or factories need qualified professional specialists to undertake detailed high-impact environmental assessments of them.

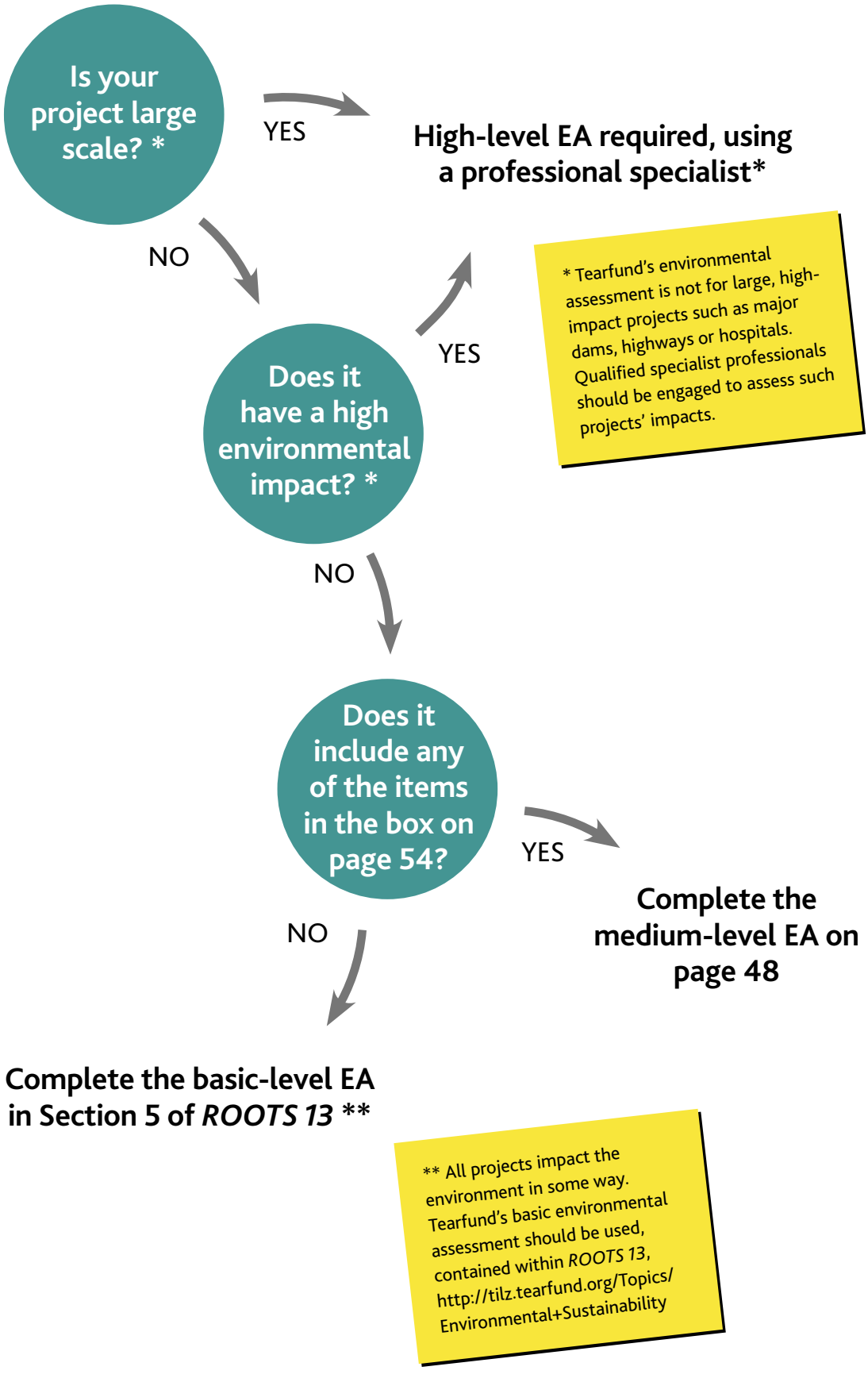
If your project will not have a high impact on the environment, but you answer 'Yes' to any of the questions in the box below, then your project is medium-impact. Otherwise, your project is low-impact, and you can instead use the basic-level environmental assessment tool described in Section 5 of *ROOTS 13, Environmental sustainability*, which can be downloaded from http://tilz.tearfund.org/Topics/Environmental+Sustainability.

The flowchart on page 55 illustrates this.

Indicators of medium-impact projects

- Does the project involve agriculture?
- Are you carrying out physical construction work? Eg building/renovating any of the following:
  - clinic or small hospital
  - small school
  - sanitary system including a latrine
  - irrigation system
  - micro-enterprise workshop or factory
  - well
  - other buildings
  - HIV and AIDS support centre
  - local road
  - small dam or sand dam
  - house(s)
  - fish pond
  - retaining water dyke for agriculture
- Is it a water or sanitation project?
- Are you creating a micro-credit fund which will provide some loans towards physical works?
- Does your project provide training, capacity building or technical assistance related directly to physical construction or operations work (eg training provided to people responsible for constructing or operating a dam or irrigation system)?
- Does your project involve use of chemical fertilisers or pesticides?
- Is it a manufacturing project with waste that could affect soil or air quality, or water bodies?
- Does your project include the development of a solid waste disposal site?
- Does it have a significant impact on the physical or human and economic environment?

Determining the impact level of your project



Appendix B Linkages between climate change adaptation, environmental degradation adaptation and disaster risk reduction

Projects do not interact with the environment in isolation. Projects and the local environment are impacted by the actions of people and natural hazards at local, national and global levels.

This appendix explores some of these linkages through assessing the overlap between climate change adaptation (CCA), environmental degradation adaptation (EDA)[1] and disaster risk reduction (DRR). This is explained in the text below, and through the diagrams on the following pages.

Projects and the environment are impacted by **climate change**. Scientists agree that climate change is resulting in an increase in the frequency and severity of floods, droughts and storms, together with an increase in events associated with rising temperatures and sea-levels. Better understanding of global climate change has led to international and national efforts to produce information on the risks of exposure to such events. However, it is too easy for such information to lead to calls for local communities to develop plans to adapt to these changes (part of CCA), without adequately considering what is already being done and how this can be modified appropriately.

The United Nations advise that nine out of every ten **disasters** are climate-related and communities need assistance in preparing for and responding to disasters. DRR is a preventative approach to disaster management and includes technical, economic or social actions or measures to lower the likelihood of communities being adversely affected by disasters. DRR includes both disaster 'mitigation' and 'preparedness' and is a process concerned with reducing the level of vulnerability and minimising the disruptive effects of any hazards by building more resilient communities.

Disasters and the impacts of climate change can be further exacerbated by local human impacts on the environment. For example, deforestation can cause communities to be more vulnerable to landslides and flooding when a hurricane hits. Our projects, activities, lifestyles and the practices of factories, companies and governments can all contribute to **environmental degradation** including depletion of natural resources such as water, timber, plants, animals and minerals (in particular coal, oil, gas), and damage to biodiversity. EDA may involve measures to replenish, protect or manage these resources – sustainable resource

1 Environmental degradation is defined as the reduction of the capacity of the natural environment to meet social and ecological requirements and needs. This includes both the depletion of local natural resources (eg timber, fish, minerals, water, plants and animals) and also includes pollution of soil, water and air, harmful methods of land clearance and adverse impacts on plants and animals that support a balanced ecosystem. ED also encompasses negative socio-economic impacts, for example a newly constructed major highway preventing access through the centre of a village to employment and local services.

management (SRM) – or to protect or restore other aspects of the local environment (ecosystems) in a sustainable way.

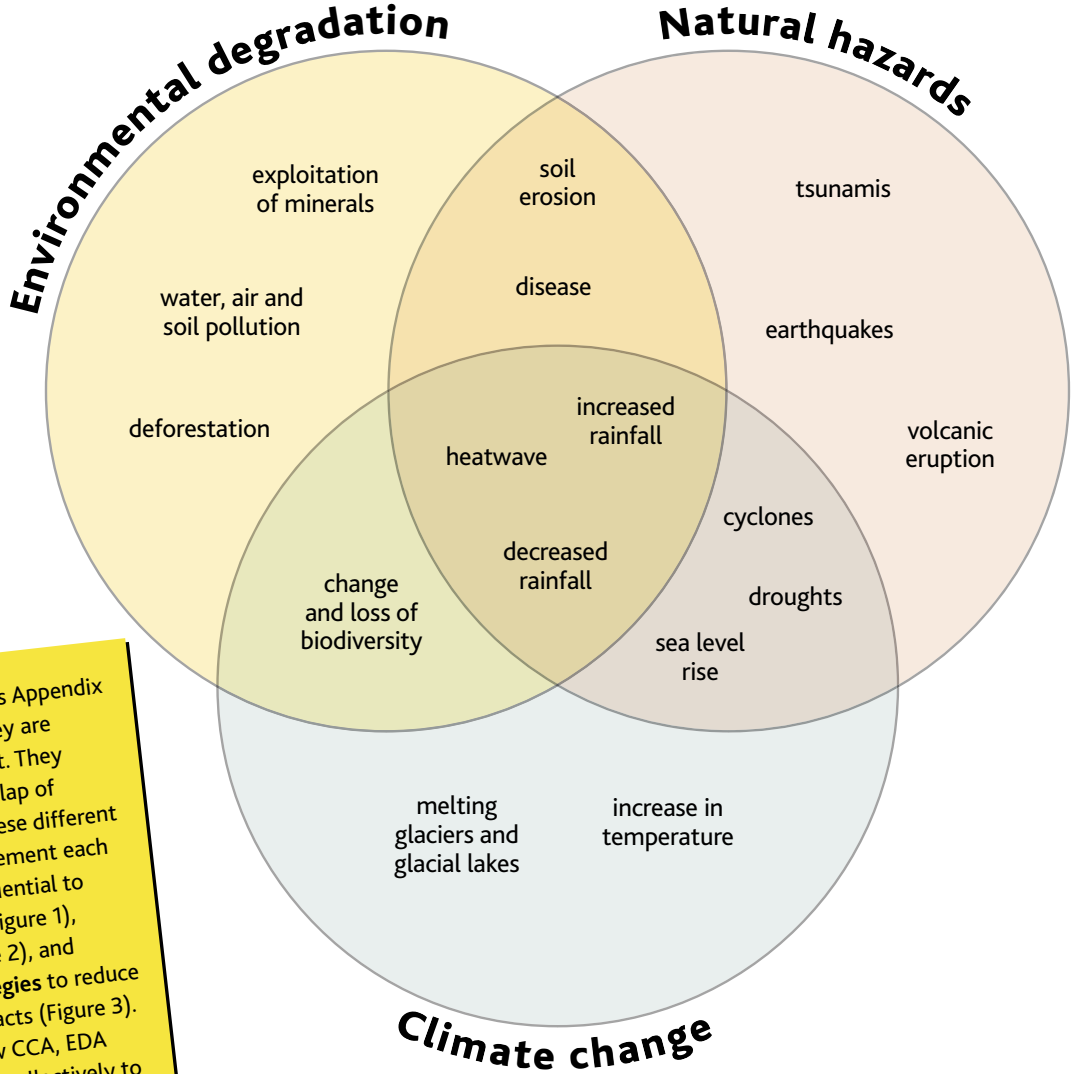
There are both similarities and differences between climate change adaptation (CCA), environmental degradation adaptation (EDA) and disaster risk reduction (DRR).

In terms of similarities:

- all focus on risk and seek to reduce vulnerability to hazards
- all seek to build community resilience to risk in the context of sustainable development thinking
- all agree that such efforts need to recognise the underlying forces placing people at risk, which often relate to poverty and powerlessness.

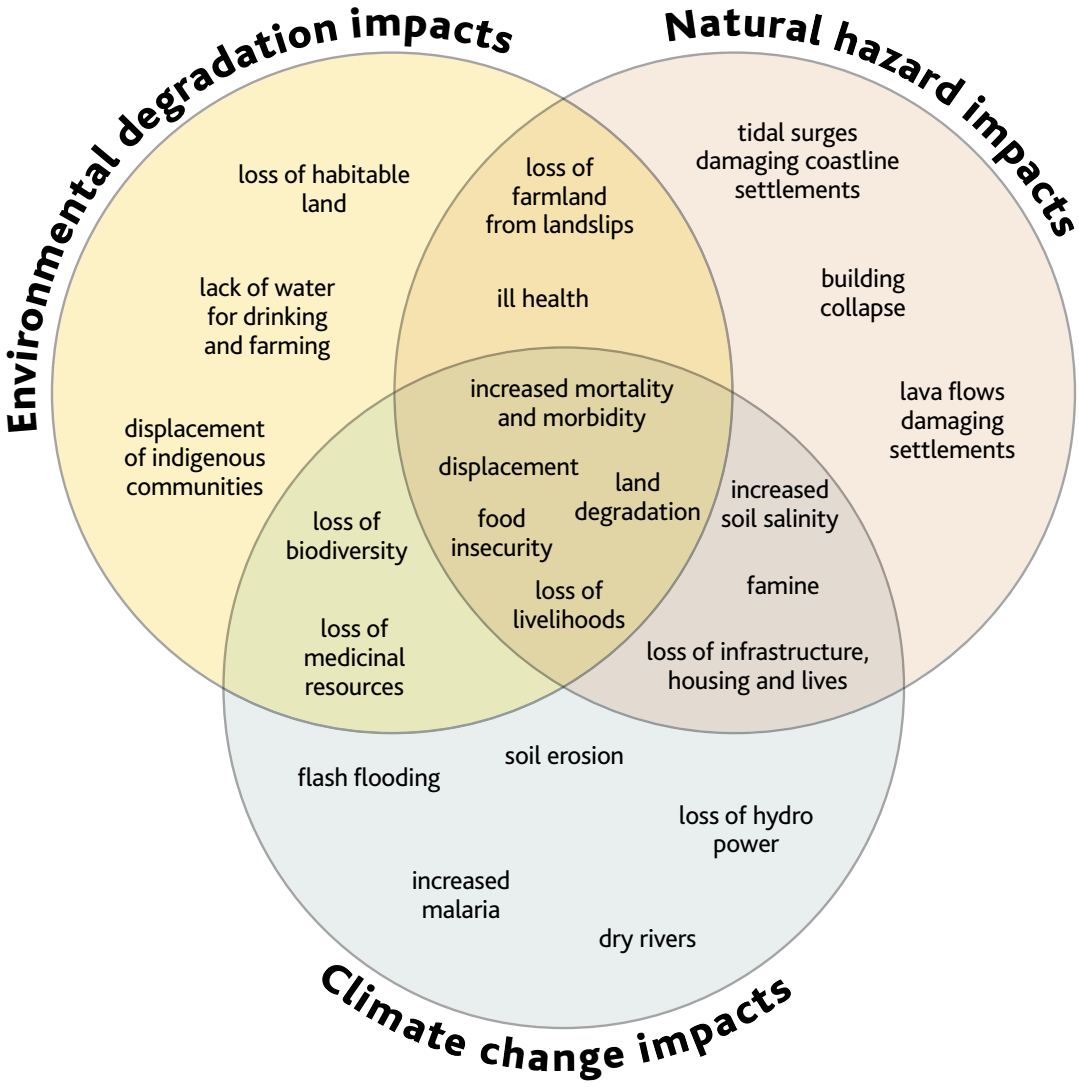
FIGURE 1
Hazards

Some examples of environmental and geophysical hazards



The three figures in this Appendix are for illustration. They are not a rigorous concept. They demonstrate the overlap of practices and how these different fields of work complement each other. They are sequential to illustrate **hazards** (Figure 1), their **impact** (Figure 2), and **intervention strategies** to reduce risks and their impacts (Figure 3). They illustrate how CCA, EDA and DRR can work collectively to achieve positive change.

FIGURE 2
Impacts
Some examples of hazard impacts



There are, however, some differences between CCA, EDA and DRR.

- CCA and EDA consider the consequences of permanent change in climate or the local environment and its longer-term consequences. DRR focuses on providing a set of practices to help the community cope with an extreme event which is considered to be outside of the current norm.
- Nearly all hazards related to CCA and EDA are triggered by human interaction with the environment, whereas hazards covered by DRR are triggered by both natural and human interactions.
- CCA relates to climate-related hazards, whereas DRR responds to most climate-related hazards and also other types of hazards.
- There are areas of DRR that are not linked to climate or environmental change (eg addressing the risks associated with geophysical hazards such as earthquakes and volcanoes, as well as biological and technical hazards).
- EDA responds to environmental hazards. Only some of these are linked to climate change and disasters, and most are caused by human activities.

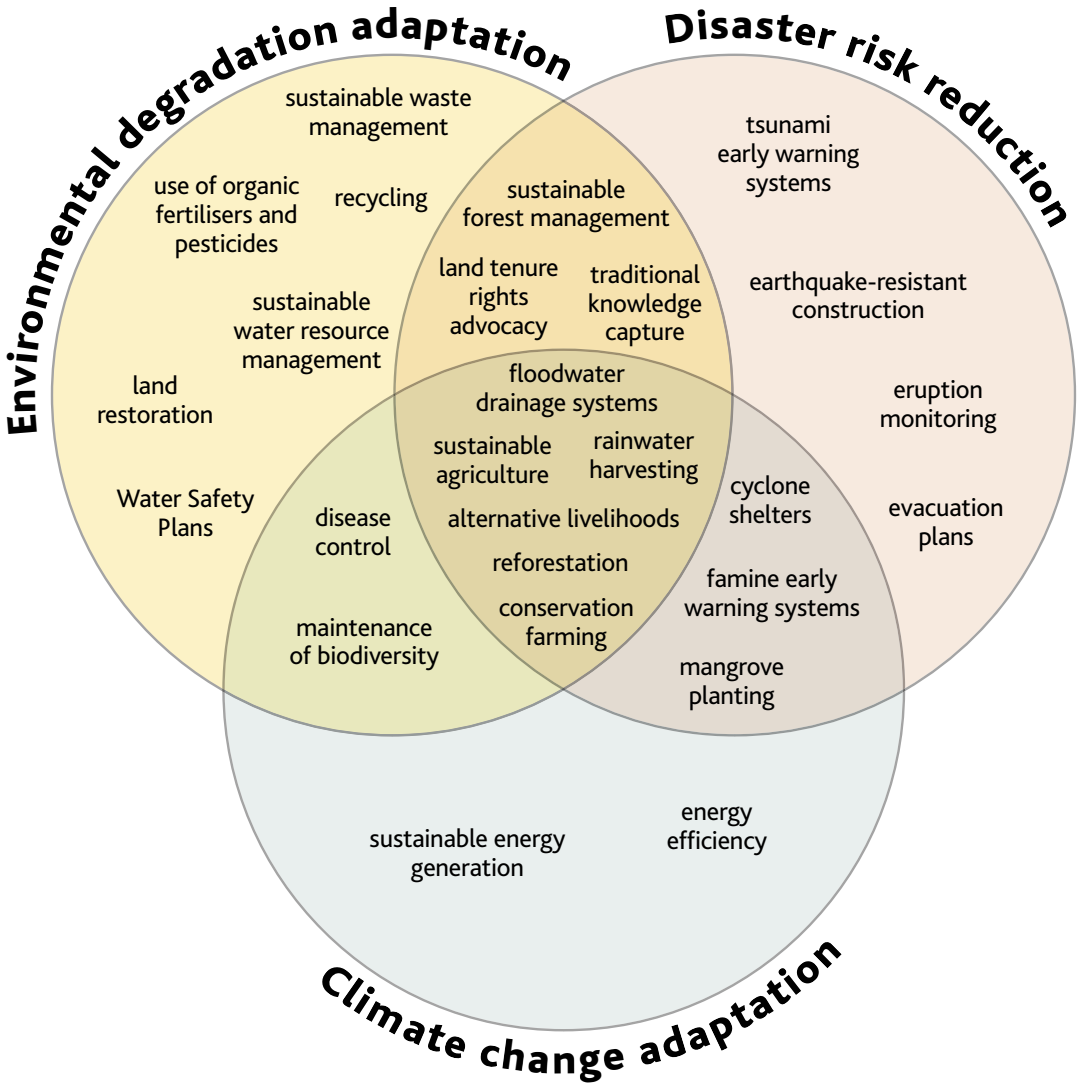
- Practices which are aimed at reducing the negative consequences of climate change and environmental degradation include DRR. But not all EDA and CCA are related to disasters.

At the local-level CCA and EDA are different from DRR in the following ways, among others:

- They identify information on long-term and irreversible climate and environmental changes and the local communities' need to recognise new opportunities and threats, some of which cannot be addressed through traditional coping mechanisms.
- They provide tools to help address and identify other environmental risks that face them in the medium and long term (eg providing access to the best quality information about anticipated climate and environmental changes at the local level over the next ten to thirty years).
- They have a role in designing and encouraging new approaches to energy usage and efficiencies, both for household and agricultural usage.
- DRR has a strong focus on building local human capacities to respond to extreme and changing events. Often CCA and EDA focus on broader systems and structures, as well as human processes.

FIGURE 3
Intervention

Some examples of intervention strategies



Appendix c Glossary

Adaptation	Taking action to adjust to climate change and environmental degradation
Arid	When an area has a severe lack of water, causing the land to be unproductive
Awareness raising	Raising knowledge in the general population about risks and how people can act to reduce their vulnerability to risks
Biodiversity	The variety of plant and animal life in an area
Capacity	A combination of strengths, attributes and resources available to anticipate, resist or recover from hazards
CEDRA	Climate change and Environmental Degradation Risk and Adaptation assessment – a climate risk assessment tool produced by Tearfund
Climate	The average weather in an area, including temperature, air pressure, humidity, precipitation, sunshine, cloudiness and winds
Climate change (CC)	Any long-term significant change in the climate over time, caused by nature or human activities
Climate change adaptation (CCA)	Taking action to adjust to climate change
Coastal erosion	Waves, tides and currents reducing the shoreline
Cyclone	A violent rotating storm with heavy wind and rain. Also called a hurricane or typhoon
Deforestation	The conversion of forest land to non-forest land by humans or natural processes, eg human causes could include logging to sell wood and land clearance including through burning forest and shrubs
Desertification	The persistent degradation of land in dry areas resulting from climatic and human activities. Possible human causes are overgrazing, over-intensive farming and extensive logging
Disaster	When a hazard impacts a vulnerable community, causing widespread damage to life, property and livelihoods which the community cannot cope with using its own resources
Disaster risk reduction (DRR)	Measures taken to curb losses from a disaster, ie reducing exposure to hazards, reducing vulnerability of the community and increasing their capacity
Drought	An extended period of time when a region does not have enough water
Environment	Physical and natural surroundings, also meaning human or social environment
Environmental degradation (ED)	The reduction of the capacity of the natural environment to meet social and ecological requirements and needs
Environmental degradation adaptation (EDA)	Taking action to adapt to the impacts of environmental degradation
Evaluation	An assessment carried out at, or after, the end of a project or programme to show its impact
Fauna	Animal life

Flooding	An expanse of water overflows and submerges land
Flora	Plant life
Governance	The process of governing a country, local area, organisation, system or process
Groundwater	Water located or sourced from beneath the ground
Hazard	A natural or man-made event which could lead to danger, loss or injury
Hurricane	see Cyclone
Landslide	The sliding of a mass of land down a slope
PADR	Participatory Assessment of Disaster Risk – Tearfund's community-level tool for assessing the hazards, vulnerabilities and capacities of a community
Participation	The involvement of people in the decisions and processes that affect them
Participatory tools	Activities which enable people to express and analyse the realities of their daily lives
Pollution	Making dirty, or contaminating, an environment or natural resource, eg from industry, sewage, solid waste, farming or chemicals
Project cycle management	The process of planning and managing projects, programmes and organisations. This process can be drawn as a cycle, and each phase of the project (identification, design, implementation and evaluation) leads to the next
Resilience	Capacity to face hazards and continue to function
Risk	The chance of something bad happening Risk = Hazard x Vulnerability ÷ Capacity
Run-off	See Surface run-off
Scientific	Information collected by expert scientists following rules laid down in exact science
Semi-arid	(also called Steppe) When a region experiences low annual rainfall resulting in reduction in natural vegetation (ie it could get water reserves from snowmelt or aquifers and therefore not be arid)
Soil degradation	Human actions causing soil to become less productive
Soil erosion	Displacement of soil, usually through the movement of water
SRM	Sustainable resource management
Stakeholder	A person or group with an interest in, or concern for, a project or activity that an organisation carries out
Subsidence	The downwards settlement of an area of land, or of a natural or man-made structure on the land
Surface run-off	The flow of water over the surface of the land from rain, snowmelt or other sources
Sustainability	When the benefits of a project continue without external intervention
Typhoon	See Cyclone
Vector-borne disease	A disease transmitted by an insect or other organism (the vector), eg malaria and dengue carried by mosquitoes
Vulnerability	The ability to be harmed
Water table	The level of the surface of the groundwater relative to ground level

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