

NR Group/PAN UK Guidance Note:

How to run an ecosystem services walk

This Guidance Note has been developed by The NR Group & PAN UK as one of the outputs for the Darwin Initiative project *Pesticide Impacts on Biodiversity in Ethiopia & Agroecological Solutions* (DI 1952). It aims to:

- Outline the ‘Why, What, Who, How, Where and So what?’ of our experience with Ecosystem Service Walks as a practical exercise adapted and tested as part of PAN UK’s project & to share it as a ‘good practice tool’ for participant engagement with others in the Darwin ‘community of practice’
- Provide guidance for use by staff in partner organisations PAN Ethiopia and Institute for Sustainable Development (ISD) to further develop and expand use of this activity, in particular with secondary students in ISD’s School Environment Clubs (see Darwin Output Note: Experiences with ecosystem services walks)
- Inform and inspire a wider audience to undertake similar awareness-raising activities in their work relating to biodiversity enhancement and sustainable management of natural resources



Background

The basis for Darwin project DI1952 is the Ecosystem Approach; the context is Pesticide Ecotoxicology. Training was delivered on the theory behind 'Taking the Ecosystem Approach' for the project's core team (CDT) of Ethiopian partners and collaborators during their initial capacity building visit to the UK in month 4 of the project. This covered aspects of and resources from the UN's Millennium Ecosystem Assessment, The Economics of Ecosystems & Biodiversity (TEEB), the UK National Ecosystem Assessment, the Ecosystem Knowledge Network and to make these concepts more tangible, participants were led outside for an 'ecosystem services walk' exercise in the Kent countryside surrounding the UK training venue (www.commonwork.org).

Ecosystem Service walks are one of the tools developed by Dr. Colin Tingle and colleagues and trialled during the DEFRA-funded *Chalking up the Benefits* project of the South Downs National Park Nature Improvement Area Partnership in the area around Lewes, Sussex (<http://neat.ecosystemsknowledge.net/downs.html>). Colin has worked intensively on awareness raising and community-based recognition of the value of ecosystem services in the UK context. In bringing the ecosystem service walks to a tropical audience and to the context of pesticide ecotoxicology, PAN UK was able to make use of the wealth of expertise and field-based experience from our long-standing ecotoxicology consultants, Colin and Prof. Ian Grant.

Introduction

Diversity and abundance of Ethiopia's Rift Valley migratory birds are declining, particularly wetland species. National experts have suspected excessive pesticide use in nearby flower, cotton and vegetable farming, aerial spraying of granivorous pest *Quelea* birds and effluent from caustic soda and pesticide formulation factories along lake shores as an important factor affecting wetland ecosystems and the birds that live in them or pass through them. However, data on pesticide volumes entering these ecosystems was scarce as was national capacity lacking to conduct the robust ecotoxicological monitoring required to establish any links between pesticide use and impacts on biodiversity.



The PAN UK Darwin project Pesticide Impacts on Biodiversity in Ethiopia & Agroecological Solutions addressed this problem by building capacity for ecotoxicology monitoring, along with broader training and awareness-raising on taking an Ecosystem Approach. National food and farming policies have increased reliance on agrochemicals, but without adequate measures to monitor potential side-effects. This 'gap' is likely to impede action to avoid any negative impacts on human and environmental health. Farmers and policymakers are unaware of the economic costs from pesticide harm (e.g. disruption to pollinators and biological pest control) and few Ethiopian stakeholders understand how agro-ecological farming methods which conserve biodiversity can reduce poverty by improving farm income and supporting ecosystem services. Under matched funding from TRAID for improving cotton production and smallholder livelihoods, PAN Ethiopia conducted Farmer Field School training for Integrated Pest Management with almost 2,000 smallholders. This has provided an opportunity to integrate such training and awareness raising to a wide, grassroots audience.

The project has included Ecosystem Service walks as part of the training/awareness raising, to give a practical, tangible introduction to the Ecosystem Approach and its focus on natural capital and ecosystem services.



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What can Ecosystem Service walks do

- **Aim** – to provide an introduction to the benefits that people get from the environment and make visible the value of the natural environment to their health, wellbeing and livelihoods + link this to biodiversity, land use and management
- **Objectives** –
 - To walk a route through a particular area/site to show as many of the different habitat types that it contains as possible
 - To prompt people to come up with their own ideas of the benefits that they receive from the place they're in, to share that with others and learn from what they see, hear, feel, smell and touch whilst on the walk, and what they hear from both other walk participants and the walk guide (expert)
 - To record all the benefits and discuss which ones fit into each of the 4 categories: Provisioning services, Cultural services, Regulating services and Supporting services
- **Who can lead an ecosystem service walk?**

Anyone with a biological and/or sociological background/training can lead an ecosystem service walk, provided they are familiar with the conceptual framework of the Millennium Ecosystem Assessment and active in putting the framework into practice. However, walk participants will learn most from one led by someone with extensive experience + understanding of, interest in and enthusiasm to communicate the value of our natural capital and the ecosystem services that flow from it.
- **Materials needed (or that assist)**
 - o Map of route
 - o Briefing sheet on Ecosystem Services (for example, see BS1 below)
 - o Record sheet for walk (for example, see RS1, below) & Collation sheet (for example, see RS2)

How to run an Ecosystem Service Walk

An example of an ecosystem service walk in practice can be found at

https://www.youtube.com/watch?v=h0jDssMjgTU&feature=player_embedded [<http://www.lewes-economics.org/>]

Box 1 How to plan the walk

- Plan your route
- What is your site of interest – how large is it? How many different habitat types does it contain? (e.g. grassland, wetland, woodland, forest, open water, urban)
- Aim for a route that is between 0.5 & 2 km long (depending on time that can be spent)
- Aim for a route that provides a variety of habitats
- Walk the route; identify stopping points – aim for 4-7 points that illustrate different types of ecosystem services; note key ecosystem service benefits from each site – note particularly areas with multiple benefits from one site and/or sites with single (or few) benefits
- Find an interesting, quiet and attractive place to give an introduction
- Prepare an introduction to the walk – describe the purpose of the walk: to help everyone recognize the benefits we get from our environment and from different types of natural/semi-natural area. Introduce 'ecosystem services'; introduce 'natural capital'; mention what we value and what we don't (NB. Beware cultural differences about this)
- Find someone to assist you by writing down the benefits people identify and/or film the walk and the discussions
- Practice the walk with colleagues/friends and/or family (preferably several times, to build confidence)
- Characterise your audience (who will be on the walk; what are they likely to know about ecosystem services already; what type of language/vocabulary will work best to engage and inform your audience; what are their key interests likely to be (or they environmentalists? Teachers? School children? Farmers? Business (wo)men?) – plan how best to engage their interest
- Prepare handouts (preferably 1 per person) showing ecosystem services provided by different habitats
- Prepare record sheets for the walk
- Prepare collation sheet – columns of different ecosystem services types

Preparation

Ecosystem Service walks were not developed as conventional 'guided walks', but more as means for participatory learning. The starting point is to draw out from the participants the basic ecosystem services that they probably already know about and can identify, such as aesthetic appreciation of natural places, value to them of different landscapes for different recreational activities, the provision of food, the provision of timber and to then encourage 'thinking outside the box' to help them visualize the less obvious ecosystem services such as pollination, climate regulation, water management and flood risk reduction, etc.

Guiding the walk

Box 2. How to carry out the walk

- Provide a short introduction to the walk: introduce the place you will be walking and tell people the aims and objectives above (but informally! No mention of Aims or objectives!!)
- Walk to first stopping point.
- Give everybody 1 minute to look around them
- Ask everyone to describe the place where you are – how would they categorize it? (Wetland? Woodland? Etc.); how large do they estimate the habitat they're in to be?
- Give everybody 3 minutes to look around and think about how that place is benefitting them
- Then ask them to tell you what benefits they are receiving from that piece of land/water
- If it's not clear, then ask them to explain what they mean
- Encourage them to comment on what others say/suggest as benefits – do they feel the same?
- Ask them to think of the size of the place and reassess how much benefit that means they receive.
- Encourage discussion
- Before moving on, list all the benefits mentioned and ask whether the site is providing 'multiple benefits'
- Walk on to the next stopping point and repeat the above, but also ask people about the connections between the first stopping point and this one (then combine the first minute given above, with the other 3 ... i.e. classing the site and estimating its size).
- Walk on to the next stopping point and say "This time, we want silence (no speaking) – I'd like you to feel the place around you fully"; Stop, sit or stand - sense, feel, hear – disengage from everything before – [find your own way to encourage participants to do this]
- Then repeat the same questions as for previous stopping points
- Walk on to the next stopping point and repeat bullets ?-?
- Continue until reach the walk 'end-point'
- Ask everyone to sit down. Hand out a sheet to everyone with the different kinds of services as heading for columns. Ask them all to fill in the different benefits they have received in the appropriate columns – give them 5 mins to do this.
- Get participants to read out some of their lists – encourage discussion between participants; does everyone agree with the way others have classified the particular benefits

Parting messages

Ecosystem Service walks are of value in starting to access people to the range of benefits they receive from the natural environment and may be enough in themselves to change people's perspectives and start people thinking differently about the importance of the health of the natural environment to their own wellbeing and to their local economy. It helps to spend a few minutes at the end of the walk repeating some of the key ecosystem service benefits people noticed and mentioned; to emphasise that not all the benefits we get from the environment are visible and that the invisible can be very important; to provide ideas for how individuals can make a contribution to enhancing natural capital and the benefits that flow from it themselves through practical actions (see Follow up, below).



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Make sure that participants have grasped the advantage from sites that provide multiple benefits rather than a single one due to the land-use and land management of those sites. Highlighting the particular benefits of woodland/forest and of a variety of wetland systems in this respect and naming specific local examples will undoubtedly help.

If it is possible, then providing people a link to the following 4 minute video (or even finding an opportunity to show it to people before leaving) maybe a helpful parting message.

[Pavan Suhkdev: The invisible economy](https://www.youtube.com/watch?v=VZWnMaX_bsY) [https://www.youtube.com/watch?v=VZWnMaX_bsY]

Follow-up

The learning gained from the walk will be increased by providing participants in walks with opportunities to continue to build their understanding and, preferably, putting forward ideas for how individuals can make a contribution to enhancing natural capital and the benefits that flow from it themselves through practical actions. This is too large a topic to cover here – see The Ecosystem Knowledge Network

<http://www.ecosystemsknowledge.net/> - but a few suggestions are included below for furthering the use of these walks.

How to make further use of ecosystem service walks:

There are many educational, and biodiversity conservation and economics/livelihoods contexts, both practical and policy oriented, in which taking target groups on a well-prepared ecosystem service walk could be valuable. Here are just a few suggestions resulting from the use of these walks in the DI project in Ethiopia:

- ☐ General education on the benefits of ecosystems, especially those ignored, invisible and/or undervalued services, biodiversity and natural resources (e.g. marshy wetlands are NOT 'wasteland')
- ☐ Promotion of eco-agriculture and sustainable land use to achieve multiple benefits
- ☐ Advocacy on biodiversity conservation with policy makers, local decision makers (including businessmen/women - walks are a great way to get them into the field and understand more about importance and value of taking an Ecosystem Approach
- ☐ Complementing formal ecotox or biomonitoring studies or biodiversity assessments, enabling local communities to play a positive role and better understand and contribute to elements of ecological impact assessment, natural resource management and land-/water use decision making.

Conclusions

For ecological sustainability or biodiversity conservation projects to succeed, it is essential to involve local stakeholders and community groups as much as possible, empowering them as informed and active decision-makers, rather than passive recipients of information or top-down 'instructions'. However, it can be hard to make ecotox or biodiversity monitoring fully participatory because of formal scientific research requirements on:

- (a) good zoological, microbiological or botanical ID and sampling protocol skills
- (b) the need to minimise confounding sources of data variation, especially observer-generated, if the aim is to get robust, replicated findings amenable to statistical significance analysis
- (c) regular monitoring at specified time periods and with consistent duration/effort, by the same observer team. This is often impossible to fit into a farmer group's daily/weekly schedule or school hours and term times.

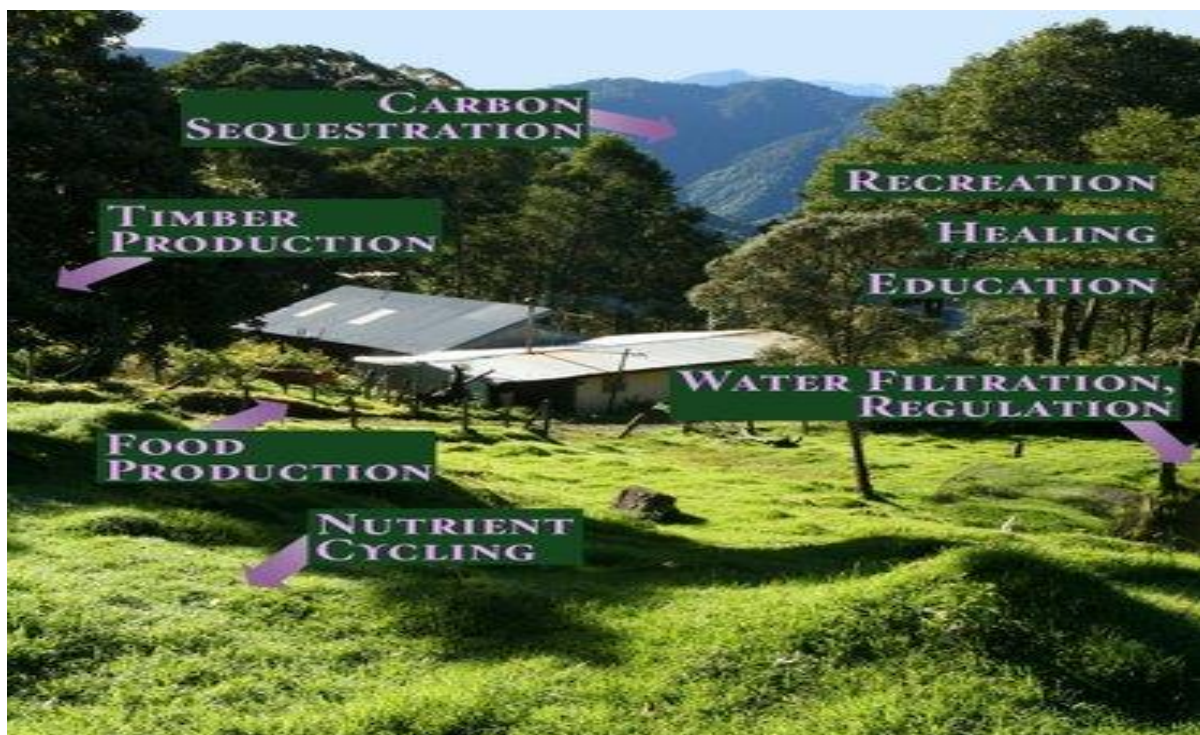
Ecosystem Service walks, however, DO provide excellent opportunities for participatory learning and increased awareness of the benefits from alternative land management, with relatively limited scientific input. They can complement formal monitoring research, involve and enthuse local groups, irrespective of their level of schooling, and 'open the eyes' of target stakeholders. Conducting short, practical, enjoyable, educational and locally relevant walks, which require virtually no resources other than pen and paper (plus a mobile phone to take photos), serves as an entry point for participants into more detailed discussion or training on other elements of taking an Ecosystem Approach.



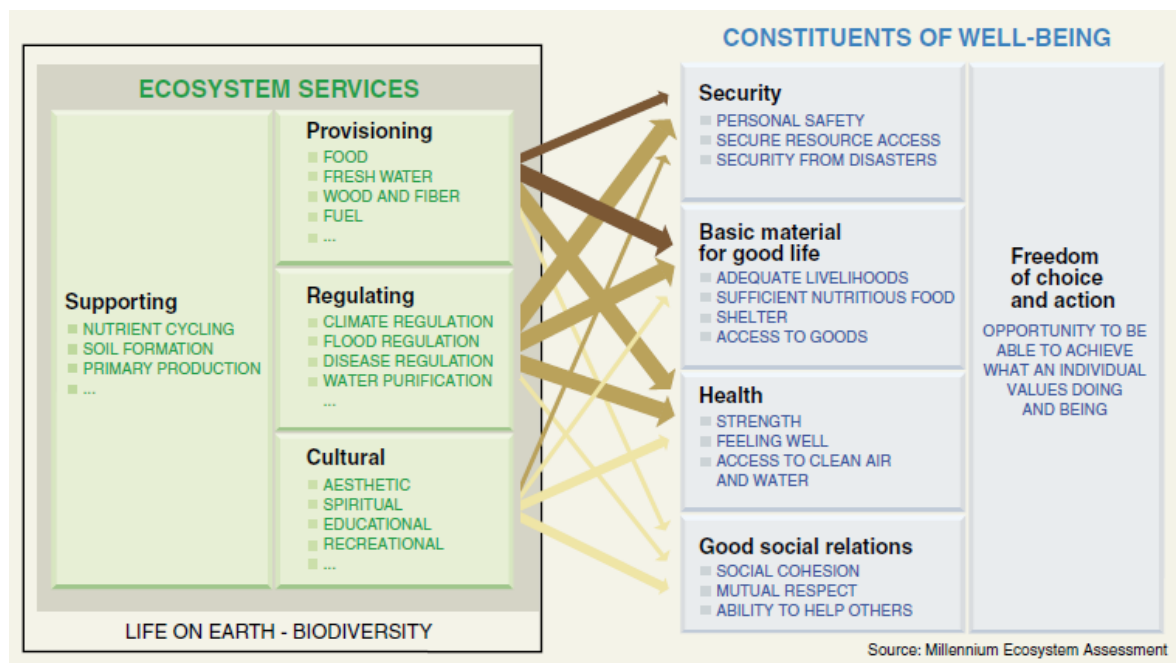
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BS1 – Ecosystem Services Briefing Sheet For use with Ecosystem Service Walks

SOME EXAMPLES OF ECOSYSTEM SERVICES *IN SITU*



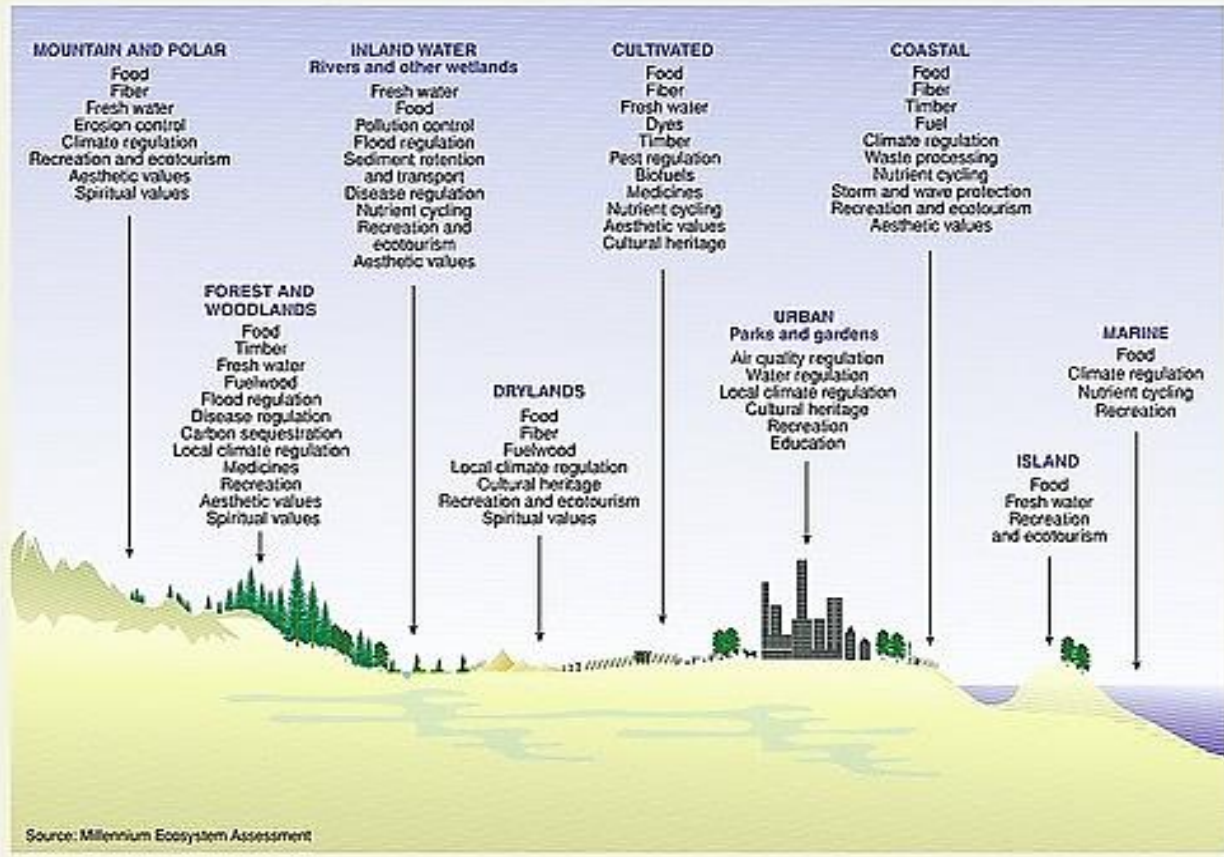
LINKAGES AMONGST BIODIVERSITY, NATUREGAIN AND HUMAN WELLBEING



<http://www.unep.org/maweb/documents/document.3>

ECOSYSTEMS AND SOME SERVICES THEY PROVIDE






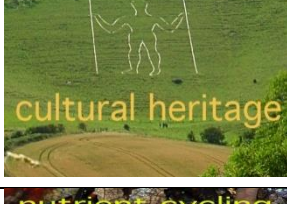


Different combinations of services are provided to human populations from the various types of ecosystems represented here. Their ability to deliver the services depends on complex biological, chemical, and physical interactions, which are in turn affected by human activities.



Source: <http://www.unep.org/maweb/documents/document.353.aspx.pdf>

Table of examples of ecosystem services

Ecosystem Service	Description	Symbol
Water	We rely on the environment to capture the rain that ends up in our taps as drinking water. It also ends up in other drinks and products	
Food	All food is naturegain, but where it comes from and how it's produced depends on the type of food, the part of the environment from which it comes and how the land/water is managed	
Flood protection	The natural landscape provides a lot of protection from floods, but construction on floodplains, straightening and/or banking of rivers and removal of vegetation from slopes often disrupts this	
Climate regulation	Amongst other things, the climate is influenced by plants and soil that release oxygen, absorb carbon dioxide, release water vapour and cycle a number of other gases	
Health (through exercise)	The environment provides opportunities for outdoor exercise that makes us healthier. It helps us manage our weight, reduce blood pressure and improve our mental wellbeing	
Leisure, recreation & Tourism	The natural landscape attracts visitors. They love an environment that is wild, beautiful and peaceful as a place to relax and enjoy and spend leisure time	
Pollination	Around 80% of plants we cultivate for food rely on bees, butterflies and other animals to pollinate their flowers. Without this help many plants could not produce fruits and seeds. This is valued at £400 million annually in the UK	
		Continued

Ecosystem Service	Description	Symbol
Habitats for species and biodiversity	The natural environment is home to many plants, animals and microbes. Our lives would be much poorer without this biodiversity – it underpins most of the other benefits we get	
Medicines	118 of the top 150 drugs are from natural sources. Some cannot be synthesized. For example, the Foxglove is used to make Digoxin that regulates the heart	
Water regulation	River flow and water storage within the landscape are influenced by the meanders in the water course, the slope, the size and shape of the river banks, whether they are tree-lined and by land use which influences the pattern of ecosystems	
Erosion prevention	Soil erosion in the UK costs £millions annually in lost food production, increases flood risk and contributes to carbon emissions. Diverse vegetation cover year round with good root networks help prevent erosion	
Education	The natural environment provides numerous educational opportunities and resources. Learning outdoors brings great benefits and so much is still unknown or poorly understood. It's a source of fascination to many people	
Cultural heritage	The natural environment has inspired many human interventions and interactions. The legacy is often valued and enjoyed today. Evidence of historical marks in the landscape can offer a sense of continuity, a sense of place and of interest	
Nutrient cycling	Ecosystems have evolved over millennia to be self-sustaining and a host of invertebrates and micro-organisms are vital to the process of turning dead organic material (on land/fresh water/sea) back into nutrients to fuel further plant growth and create healthy ecosystems	
Waste processing/ Pollution control	Natural processes involving micro-organisms and higher plants can dilute, store and detoxify waste products and pollutants – particularly (but not only) organic ones ... at least up to certain toxic threshold levels	

RS1 Ecosystem Services walk – Record Sheet

Please record all the benefits you sense as you walk

Name:

Location	Benefits noticed from that area (= Ecosystem Services)
1.	
Walk to 2	
2.	
Walk to 3	
3.	
Walk to 4	
4.	



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RS2 Ecosystem Services walk – Collation Sheet

Please attribute all the benefits you sensed on your walk to the following categories

Name:

Location	Ecosystem Services			
	Provisioning services	Regulating services	Cultural services	Supporting services
1.				
Walk to 2				
2.				
Walk to 3				
3.				
.				
Walk to 4				
4				



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