The Macaulay Institute

In partnership with

The Cairngorms National Park Authority

A FRAMEWORK FOR DEVELOPING INDICATORS OF SUSTAINABLE TOURISM

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Contents

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ABBREVIATIONS

CNPA	Cairngorm National Park Authority
FT/PT	Full-time; part-time
GTBS	Green Tourism Business Scheme
SD	Sustainable Development
STI	Sustainable Tourism Indicator
STS	Sustainable Tourism Strategy
TEF	Tourism and Environment Forum
ViSIT	Visitor service, information and tourism

Executive Summary

- This report presents a framework approach to selecting and implementing indicators of sustainable tourism. It was designed to support the Cairngorm National Park Authority (CNPA) and the ViSIT forum in this task.

- The purpose of the document is to provide a structure for thinking through the process of selecting indicators – it is designed to encourage transparency and deliberation by asking provocative questions, rather than providing 'answers'.

- Indicators are a means to move beyond the rhetoric of sustainable tourism and measure change (in this case, whether the CNP Sustainable Tourism Strategy (STS) and associated Action Plans are making a difference).

- Developing and implementing indicators costs resources so it is worth making sure those selected are 'fit for purpose' and will be used.

- Indicators have to make sense as a collective group that fit together to give an overview of the whole. For the CNP, they should reflect the principles of Europarc, the Sustainable Tourism Strategy and the Park Plan and they should be implemented at a Park scale.

- There is no such thing as a 'perfect' indicator – the findings suggest focussing on seeking the best *available* indicator that fits the overall framework.

- The process of selecting and implementing indicators should follow the indicator cycle that is introduced on page 7 – the cycle deliberately emphasises iterative learning rather than a linear approach.

- Indicators are catalysts for change; they themselves do not make decisions. Implementing indicators means more than just measuring things; it means using the information to make decisions and choices.

- The checklist (see pages 15 - 22) provides a structured series of questions and prompts to encourage robust decision making about what, when, and by whom indicators should be developed and implemented.

- The framework and checklist are suggested as ways to help achieve the principles introduced above. However, the approach is a tool to be customised by those using it, rather than a blueprint.

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1 Research Aims and Objectives

1.1 This research was based on a partnership between the Macaulay Institute and the Cairngorms National Park Authority (CNPA). It was conducted to advise CNPA and the ViSIT Forum on an appropriate framework and checklist to develop and implement indicators for their Sustainable Tourism Strategy (http://www.cairngorms.co.uk/parkauthority/publications/results.php?publicationID=59).

1.2 The research programme (Sept 05 – Mar 06) involved five key elements:

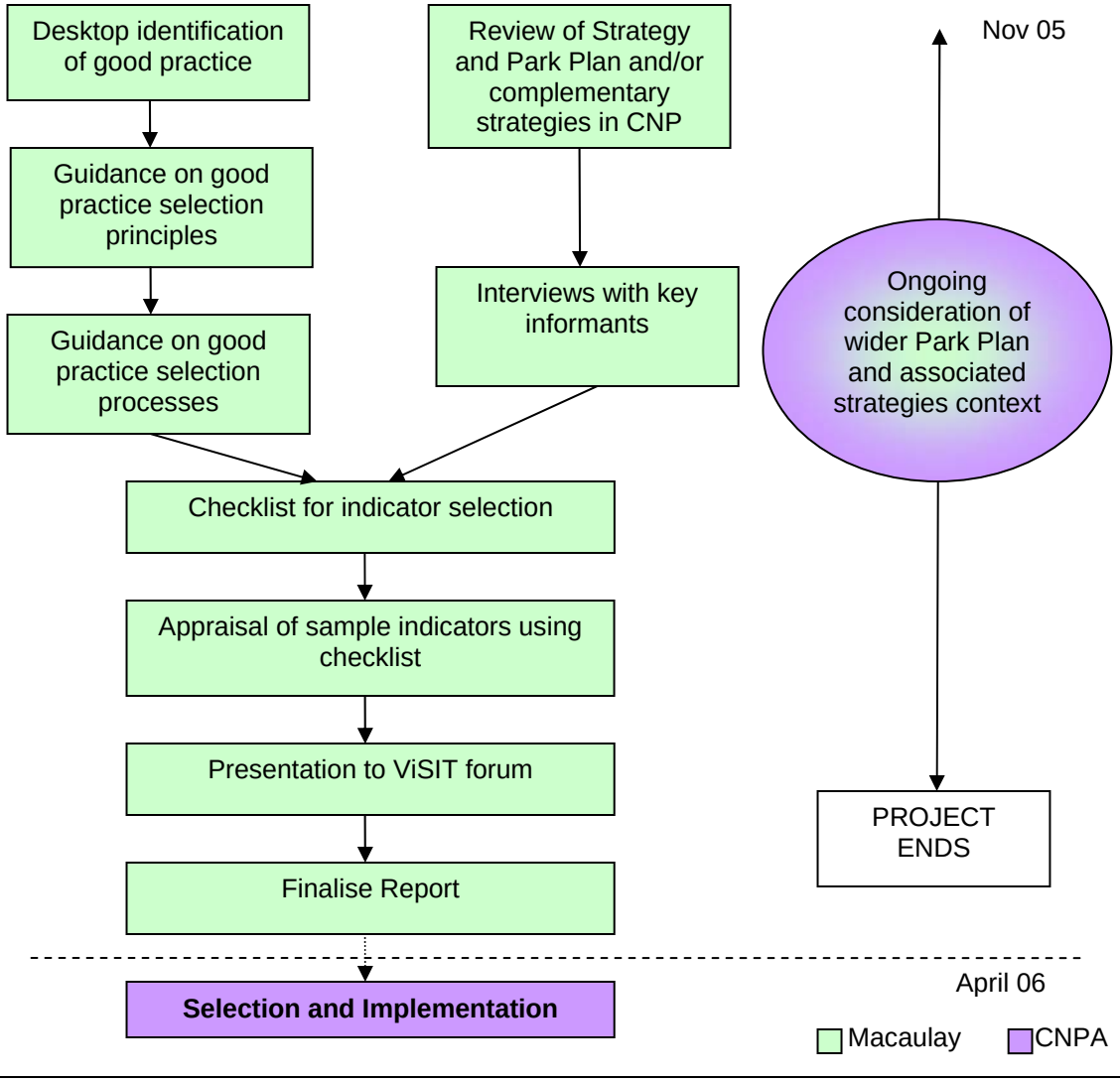
- Interactive dialogue and shared learning with CNPA staff and ViSIT Forum through formal and informal exchanges of information;
- A targeted literature review on sustainable tourism, sustainable development and indicator theory;
- Collation of contemporary indicator sets used for sustainable tourism and sustainable development;
- Interviews with key representatives of ViSIT Forum; and
- A presentation to ViSIT Forum of the indicator framework and checklist.

1.3 This report summarises the framework and checklist but should not be viewed in isolation from the constituent parts of the research. The report was written specifically to address the CNPA context and therefore will be context specific. The following separate reports are available on request from the Macaulay Institute:

- Literature Review
- Example Indicator Sets
- Interview Results

1.4 The STS provided the starting point for the development of a monitoring framework and the criteria to be used to select appropriate indicators, which are discussed in this report. However, the actual selection and implementation of indicators is a process for CNPA in partnership with ViSIT forum to pursue (see figure 1).

Figure 1: Overview of Research Process and Key Outputs



2 Overview of Report

2.1 The aim of this report is to highlight and discuss the key outputs from the project, as shown in Figure 1 and stated below:

- A review of literature on Sustainable Tourism Indicator Frameworks:
  - The stages in the Indicator Cycle
  - The suggested framework (and why frameworks are useful)
- Overview of stakeholder views on Sustainable Tourism Indicators: key findings from the interviews
- A Working Checklist for selecting and implementing indicators
- Existing examples of indicator sets to be used or adapted if required

3 Literature Review on Indicators

3.1 We researched a number of peer reviewed and published documents regarding sustainable development frameworks, indicator theory, sustainable tourism management and sustainable tourism indicators. This spread of literature was appropriate given the STS position as part of the overarching CNP Plan, its vision and strategic principles. Whilst the literature review is not definitive, it provides a robust theoretical platform for the suggested approach in this report.

3.2 The literature review considers the debates over the definition and operationalisation of sustainable tourism and the relationship between sustainable tourism and sustainable development. Fundamentally, sustainable tourism development requires an integrated view of the world that recognises inter-relationships between environmental, economic and social aspects and how these relationships change over time.

3.3 As such, sustainable tourism requires an adaptive management approach, whereby monitoring progress is an opportunity for reflection, learning and re-orientating courses of action. Indicators play a role in this process providing the information for such reflection and this iterative approach is highlighted in the indicator cycle (see figure 2).

3.4 The literature highlights the large number of existing indicator sets (see Appendix two) but very few evaluations of their implementation. A review of these examples stresses the importance of creating a coherent group as opposed to ad-hoc selection of individual indicators to ensure they provide a clear picture of progress.

3.5 Ensuring the indicator set is fit for purpose also stems from the importance of balancing effort on developing indicators to *measure* sustainable tourism with the effort to be expended on *achieving* sustainable tourism.

3.6 Selecting indicators often requires a compromise between relevance, scientific validity and measurability. They are always partial and subject to interpretation. The literature suggests that the process of implementing and using indicators is more important than seeking technically perfect individual indicators; and this philosophy underpins our checklist.

3.7 The literature highlights the importance of stakeholder and public consultation in the development of any set of indicators and in their application and interpretation.

The following section seeks to develop these points within a conceptual approach that is pragmatic, logical and robust.

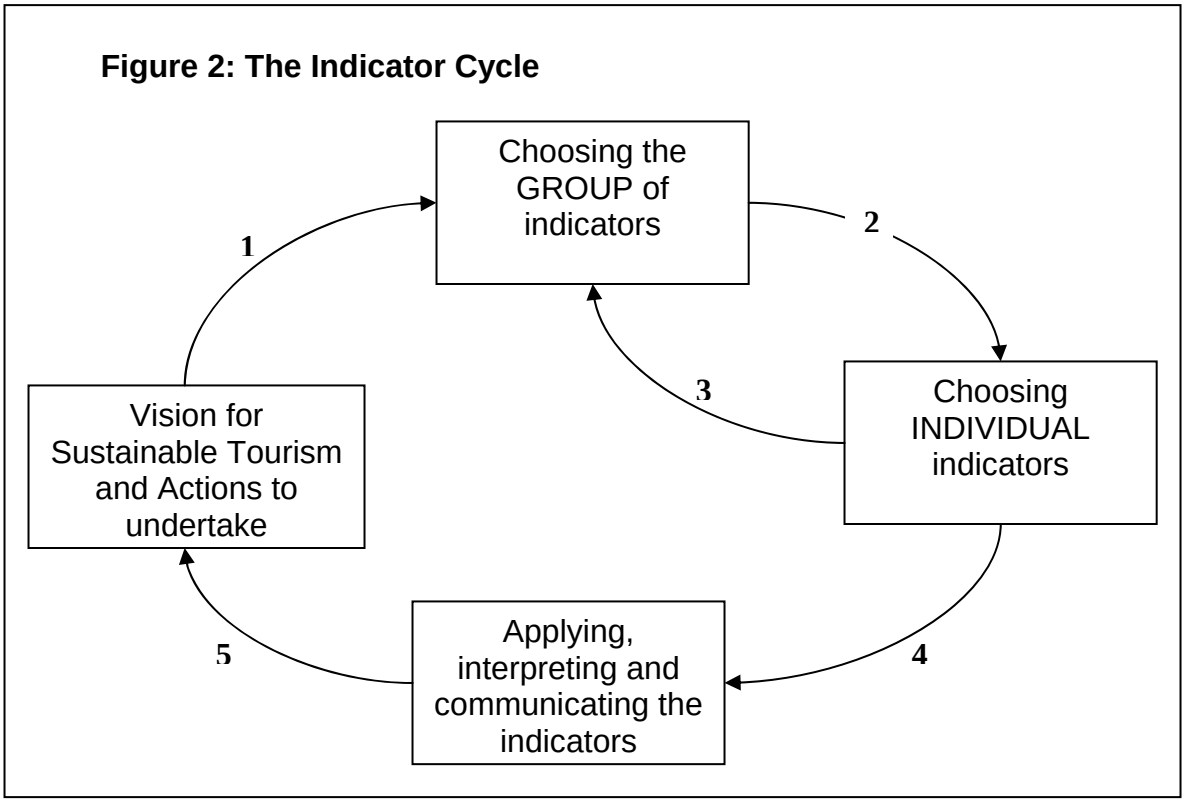
4 The Indicator Cycle

4.1 The literature on indicator development and application can be simply explained by referring to the indicator cycle, shown in figure 2 below.

4.2 It highlights that any *individual* indicator has to be seen as a component part of a wider *group* of indicators possessing a distinct identity.

4.3 This group is selected using a combination of strategic objectives, stakeholder consultation and the application of a framework (explained below). Once the overall group of indicators is established (stage one), the individual indicators can be selected (stage two). These then have to be reassessed against the overall group criteria (stage three). The chosen indicators are applied and the results interpreted and communicated (stage four). The results should be checked against the original objectives and action plans for the strategy, and any revisions (to the strategy, actions *or* to the indicators) carried out (stage 5).

Figure 2: The Indicator Cycle



5 Indicator Frameworks

5.1 A wide variety of indicators exist (see example existing indicators sets in Appendix 2), but it is hard to know which of these to use and why? Although many indicator sets have been developed, there is very little published evaluation on their effectiveness. Given the investment of time and money into developing and collecting indicators, it is important to try to ensure the selection is fit for purpose.

5.2 The few examples that have applied and evaluated indicator sets for sustainable tourism make a strong case for adopting a framework (e.g. the Whistler case study by Waldron and Williams, 2003). A framework guides the choice of inter-related indicators to help target indicators most effectively. In other words, it helps ensure that indicators are 'fit for purpose' and can fully support decision making for the stated objectives (in this case those stated within the Europarc compliant STS).

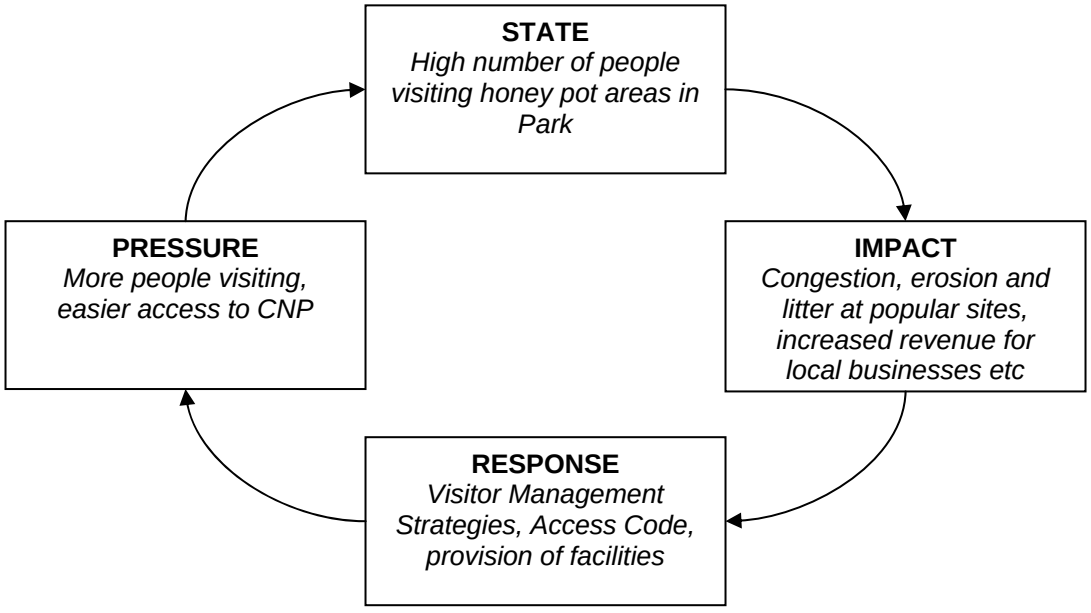
5.3 Indicators for sustainable tourism in the Cairngorms National Park are required to manage change across the whole Park in order to protect its special qualities (which give it its Europarc status and attracts visitors to the Park in the first place - see CNP Visitor Survey 2004). Indicators have to cover the key 'domains' - or themes - as specified within the STS: volume and spread of tourism; visitor satisfaction; tourism enterprise performance and satisfaction; community reaction; and environmental impact. However, they should also measure the multiple dimensions of change in a way that links cause and effect together.

5.4 The 'Pressure-State-Impact-Response' (P-S-I-R) framework (Box 1) is a commonly employed method in the development of indicators (for example, used by the European Environment Agency in developing their Environmental Indicator Set). It is used as an example to illustrate how a framework can provide an overview of the *different dimensions* of Sustainable Tourism (see figure 3 overleaf).

Box 1: The P-S-I-R Framework

- **P**ressure data allows predictions of what might happen in the future.
- **S**tate data shows 'where we are' but also how things are changing.
- **I**mpact data shows why changes matter – what are the positive or negative effects of the current state on the qualities we are seeking to protect?
- **R**esponse data measures what policies are put in place and whether they are having their desired effect.

Figure 3: P-S-I-R Framework



5.5 Adopting the P-S-I-R framework requires understanding what the individual indicators are measuring - i.e. whether they are a measure of 'pressure', 'state', 'impact' or 'response' - with the aim of achieving a balanced assessment of all these areas. Table 1 illustrates that the current indicators within the STS provide a good foundation for the key themes but there are gaps in the P-S-I-R framework. Thus the framework helped to highlight these gaps (which existing indicators could help fill - see Appendix 2).

5.6 The framework aims to encourage reflection on different dimensions of sustainable tourism and to ensure that they are all being monitored. However, many indicators could have been allocated to more than one column in table 1, depending on how the results are interpreted (e.g. a number could represent a state, but changes in states over time could be either a pressure or an impact). The framework requires that the purpose of the indicator is made explicit and is clearly linked to the dimension it is supposed to be measuring.

5.7 Any framework has an implicit world view attached to it. The P-S-I-R framework assumes a world of linear, predictable and reversible relationships. Whilst a framework helps provide coherence to choices being made, and to illustrate gaps in coverage, no framework is perfect and the assumptions underpinning the framework must be acknowledged.

Table 1: Applying the Integrated Framework to the current STS Indicators

THEMES	PRESSURE (what will lead to tomorrow's state and impacts)	STATE (where are we now?)	IMPACT (what is the effect of the current state of tourism?)	RESPONSE (action taken to manage tourism sustainably?)
Volume and Spread of Tourism	- No. of tourism development projects receiving planning permission	- Estimates of trips, nights and spending in the region - Visitor numbers at attractions and main sites - Monthly occupancy at accommodation - Traffic counts at main locations (monthly) - Proportion of attraction and activity providers open all year		
Visitor Satisfaction		- Proportion of repeat visitors	- Percentage of visitors satisfied in general and with types of facility/service - Number of complaints received	
Tourism Enterprise Performance and Satisfaction		- Monthly accommodation occupancy rates and attraction visitor numbers - Performance increase/decrease compared to previous year - No. of jobs supported- FT, PT, all year, seasonal		- Proportion of enterprises with quality certification - No. enterprises using local produce - Percentage of enterprises satisfied with CNPA
Community Reaction			- Proportion of residents surveyed saying they are happy with tourism levels - No. of complaints received relating to tourism	
Environmental Impact			- Records of air and water quality - Levels of litter at key sites	- Amount raised through visitor payback schemes - Proportion of visitors arriving by public transport - No. of enterprises in GTBS - No. of enterprises taking environmental management measures

6 Findings from the Interviews

6.1 We undertook 12 interviews with key stakeholders who are current ViSIT Forum members and/or who have played a role in the development of the STS in the Cairngorms National Park. The interviewees covered a variety of backgrounds, including public agencies and private industry, at a range of operational scales. However, they should not be seen as representative of ViSIT Forum or any particular agency. What follows below is a summary of responses to **key** questions that apply directly to the development and use of indicators. A broad overview of responses to all questions is included in Appendix 1.

Definitions of Sustainable Tourism and Indicators (Q1 and Q6)

6.2 Most definitions of sustainable tourism reflected the idea of balancing the needs of the environment, the economy and the local community (i.e. the 'triple bottom line' approach). However, answers given in later questions, particularly relating to the choice of indicators and important aspects to measure in monitoring sustainable tourism, suggested that these initial responses glossed over a wide spectrum of views; from perspectives that prioritised the economic viability of existing tourism enterprises to those that were more concerned about the impacts of tourism on environmental and social resources in the Park. Furthermore, the definitions tended to overlook issues of responsibility within and between generations; and few indicators highlighted behavioural change by individuals and organisations. These findings highlight a gap between the rhetoric of sustainable tourism development and diverse views of how to operationalise it.

6.3 Most respondents were clear that indicators were there to help measure change in order to make decisions. Thus, indicators need to measure changes that reflect the 'triple bottom line' approach that underpins the definition of sustainable tourism. This means that having a shared understanding of sustainable tourism is a pre-requisite before indicators can be selected.

Indicator Measurement and Evaluation (Q7 and Q9)

6.4 Respondents were asked to highlight what issues the indicators ought to measure (Q7) and then asked to comment on the indicators currently suggested in the Sustainable Tourism Strategy (Q9) (see STS page 59 – 60). The combined outcomes of these questions are presented in Table 2, overleaf. The 'gaps' refer to issues that were raised by respondents that are not currently included in the STS suggested indicators. The 'comments' refer to where respondents queried or critiqued the existing listed indicators. It was often difficult to fit the 'gaps' under the theme headings provided in the STS, hence some have been kept separate under 'other'. Also, they are (mostly) expressed as *issues* rather than *indicators*, so if these missing issues are considered important, then they have to be turned into a measure that can be used as an indicator.

6.5 To summarise the issues arising from table 2:

- Indicators should differentiate between different types of visitors and residents and their distinctive needs;
- Indicators need to capture both simple counts but also include more subjective issues of behaviour, quality and satisfaction;
- Indicators need to measure the awareness and understanding of Sustainable Tourism (environmental, social and economic aspects);
- Indicators need to acknowledge linkages with other sectors such as affordable housing;
- An example of a particular missing issue is the need to monitor issues associated with workforce motivation, retention and awareness of ST; and
- To understand how ST impacts on other key issues.

Table 2: Gaps and Issues raised by Interviewees with the existing indicators listed in the STS

STS Suggested (**Themes** and *Indicators)*	**Gaps**	**Comments/ Problems**
Volume and spread of tourism		
➢ *Estimates of trips, nights and spending in the region* ➢ *Visitor numbers at attractions and main sites (monthly to get indicator of seasonality)* ➢ *Monthly occupancy at accommodation (see under enterprise performance)* ➢ *Traffic counts at main locations (monthly)* ➢ *Number of tourism development projects receiving planning permission (together with number of applications, number called in by CNPA and outcome)* ➢ *Proportion of attractions and activity providers open all year*	➢ Qualitative understanding of what visitors are doing, experiencing and where (not just counts) ➢ Carrying capacity ➢ Vehicle movements by type (more detailed than just traffic counts)	➢ Want/need to distinguish between locals enjoying the Park and visitors? ➢ Will this pick up changing 'hot spots'? ➢ Traffic Counts problematic due to influence of A9 commuters
Visitor satisfaction		
➢ *Percentage of visitors satisfied in general and with types of facility / service* ➢ *Proportion of repeat visitors* ➢ *Number of complaints received*	➢ Who would recommend the Park to others and why ➢ Those who won't return or visit and why ➢ Impacts of tourism on enjoyment of Park qualities (for visitors and locals)	➢ Critical evaluation of visitor satisfaction (most data meaningless)
Tourism enterprise performance and satisfaction		
➢ *Monthly accommodation occupancy rates and attraction visitor numbers* ➢ *Performance increase or decrease compared to previous year* ➢ *Number of jobs supported - full time, part time; all year, seasonal*	➢ What is provided, by who and where (e.g. how many 4 star B&Bs, events) ➢ Profitability of tourism enterprises ➢ Value of tourism (yield not just numbers) ➢ Business start up rates ➢ Employment statistics for local people (including hourly earnings for comparison) FT:PT ratio ➢ Job retention rates and employee satisfaction	➢ Should also have performance data for other forms of tourism provision: retail, food and drink outlets etc ➢ Multi-sectoral, diverse industry – can't have blanket indicators for such diversity of products

STS Suggested (**Themes** and *Indicators)*	**Gaps (raised by Interviewees)**	**Comments/ Problems (raised by Interviewees)**
➢ *Proportion of enterprises with quality certification* ➢ *Number of enterprises using local produce* ➢ *Percentage of enterprises satisfied with CNPA*	➢ Quality of tourism product ➢ Quality of visitor Information ➢ Quality of visitor service provided (skills, attitude, training of the staff) ➢ Intention to visit the CNP – who comes and why (impact of marketing campaigns)	
Community reaction		
➢ *Proportion of residents surveyed saying they are happy with tourism levels* ➢ *Number of complaints received relating to tourism*	➢ Do the local population feel part of the tourism industry? ➢ Understanding/ awareness of sustainable tourism	➢ Should be titled 'community benefits' or 'community impacts' not community reaction? ➢ People don't complain ➢ Who are the 'community' – what is a representative complaint?
Environmental impact		
➢ *Amounts raised through visitor payback schemes* ➢ *Records of air and water quality* ➢ *Levels of litter at key sites* ➢ *Proportion of visitors arriving by public transport* ➢ *Number of enterprises in Green Tourism Business Scheme*	➢ Need to take account of existing environmental condition ➢ Environmental awareness by visitors and local residents ➢ Natural heritage/ Biodiversity ➢ Monitor land use change (e.g. farming, forestry- all important part of landscape and therefore tourism industry) ➢ Renewable energy uptake	➢ Visitor payback is not an environmental issue but overall management issue ➢ Not in favour of a bed-tax ➢ Air and water quality not connected with ST ➢ Existing Data not available at the appropriate scale ➢ People will litter anyway ➢ Public transport is poor so not a good indicator ➢ Many businesses won't take part in GTBS
Other issues for monitoring (as raised by Interviewees)		
	➢ Population stability ➢ Affordable housing within the Park ➢ Sustainability of land use in terms of tourism and other land uses ➢ Compliance with the access code ➢ Social benefits and environmental justice ➢ Visitor behaviour and whether/how they respond to education or information ➢ Awareness of sustainable tourism by visitors and locals ➢ Public spending on tourism policies in the park ➢ Communities of 'interests' as well as spatial – what are the different needs for different folk (e.g. walkers, mountain bikers, climbers, etc)	

7 Working Checklist

7.1 Building on responses from the interviews and the literature review, the project team have developed a 'Working Checklist' which is a structured process for working through the indicator cycle. The checklist is displayed as a flow chart, where:

- the column on the left hand side of each page highlights the key decision-making steps required to select and implement indicators, i.e. the questions that have to be satisfied at each stage of the cycle.
- the column on the right hand side of each page uses an **example** from the STS to illustrate how this checklist may be applied.

7.2 Pages 16 – 22 illustrate a worked example to illustrate the checklist.

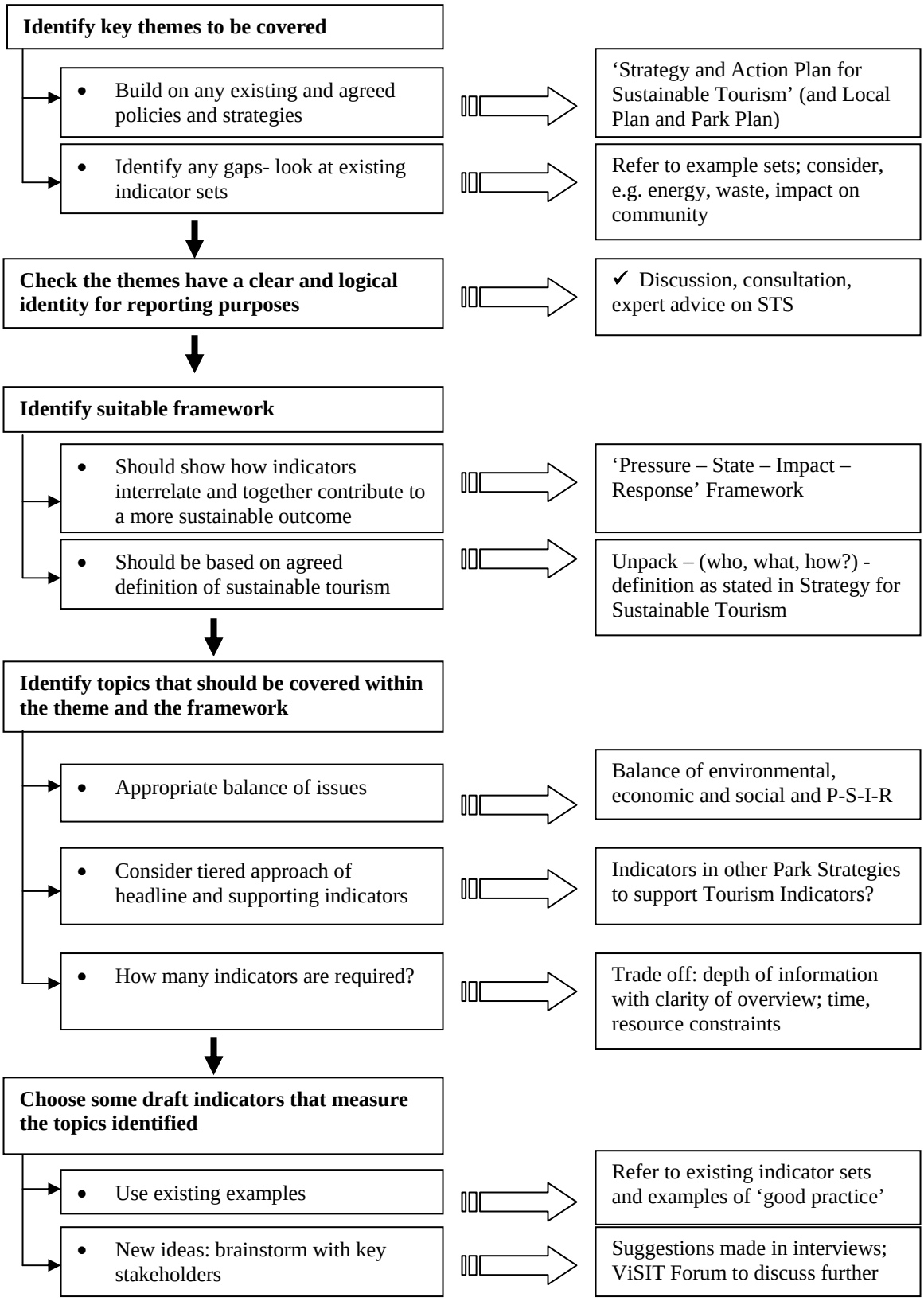
7.3 We have used the existing STS themes and indicators for Stage 1.

7.4 We have selected an example individual indicator, *'Monthly Accommodation Occupancy Rates*' from the STS suggested indicator list for Stage 2 of the cycle.

7.5 We summarise the issues relating to reviewing the individual indicators (Stage 3), implementing and communicating the results (Stage 4) and strategic review (Stage 5) as these are areas for future discussion when Stage 2 is accomplished. These later stages highlight that choosing indicators is just the beginning of the process and it is the implementation, learning and actions arising from their results that really count.

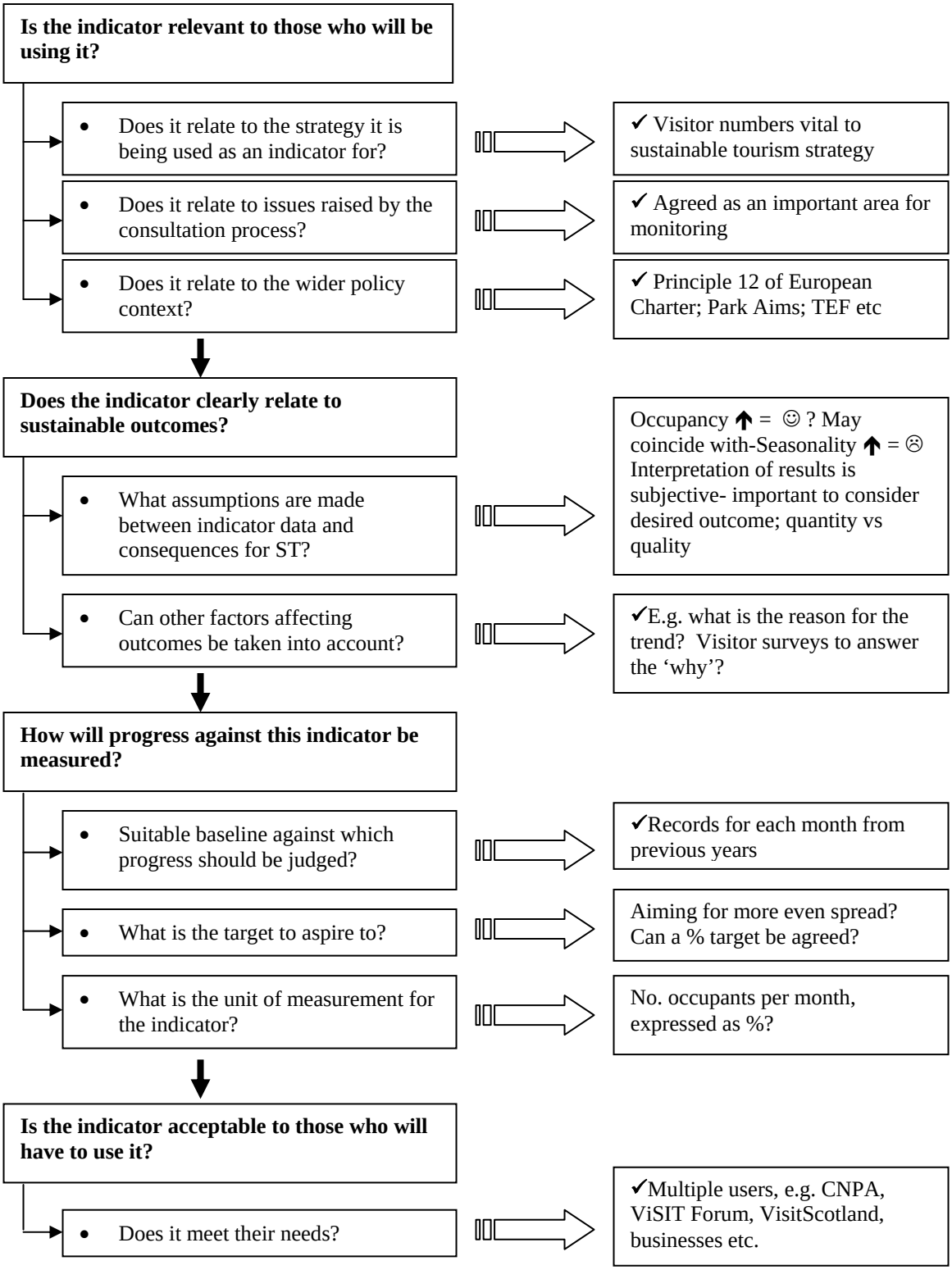
7.6 The checklist could be adapted for any indicator selection process.

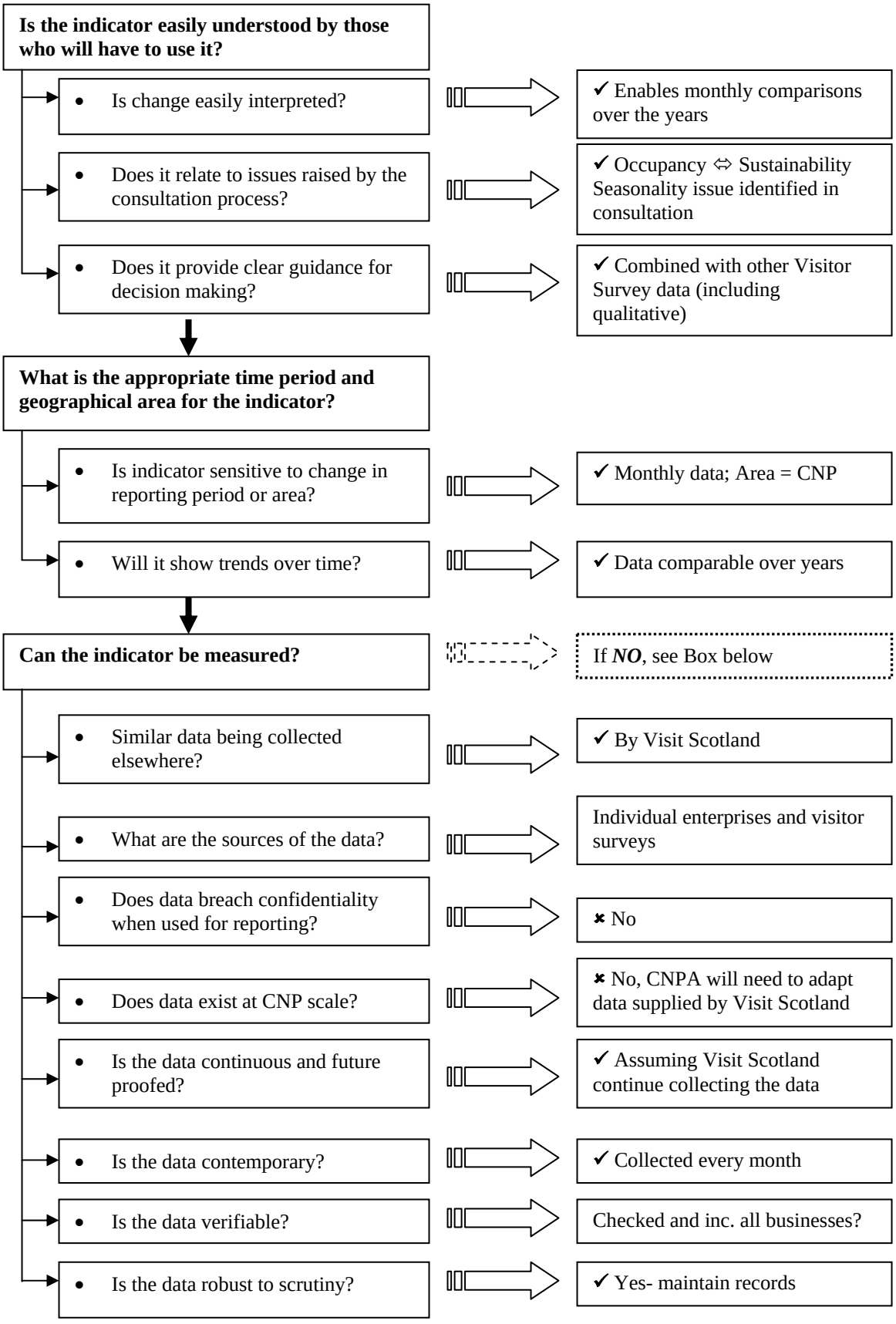
1. SELECTING GROUPS OF INDICATORS

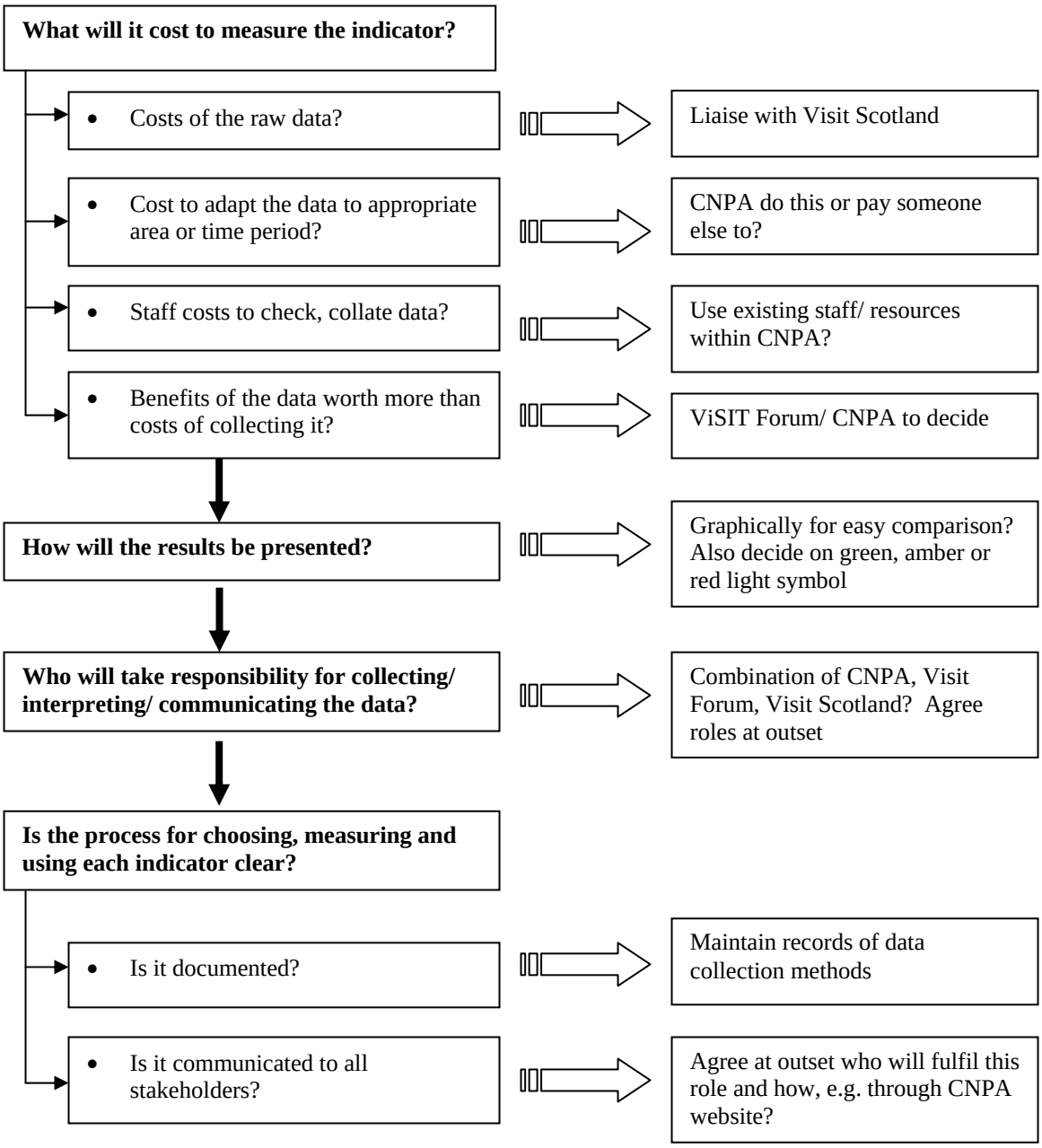


2. SELECTING INDIVIDUAL INDICATORS

EXAMPLE INDICATOR: MONTHLY ACCOMMODATION OCCUPANCY RATES



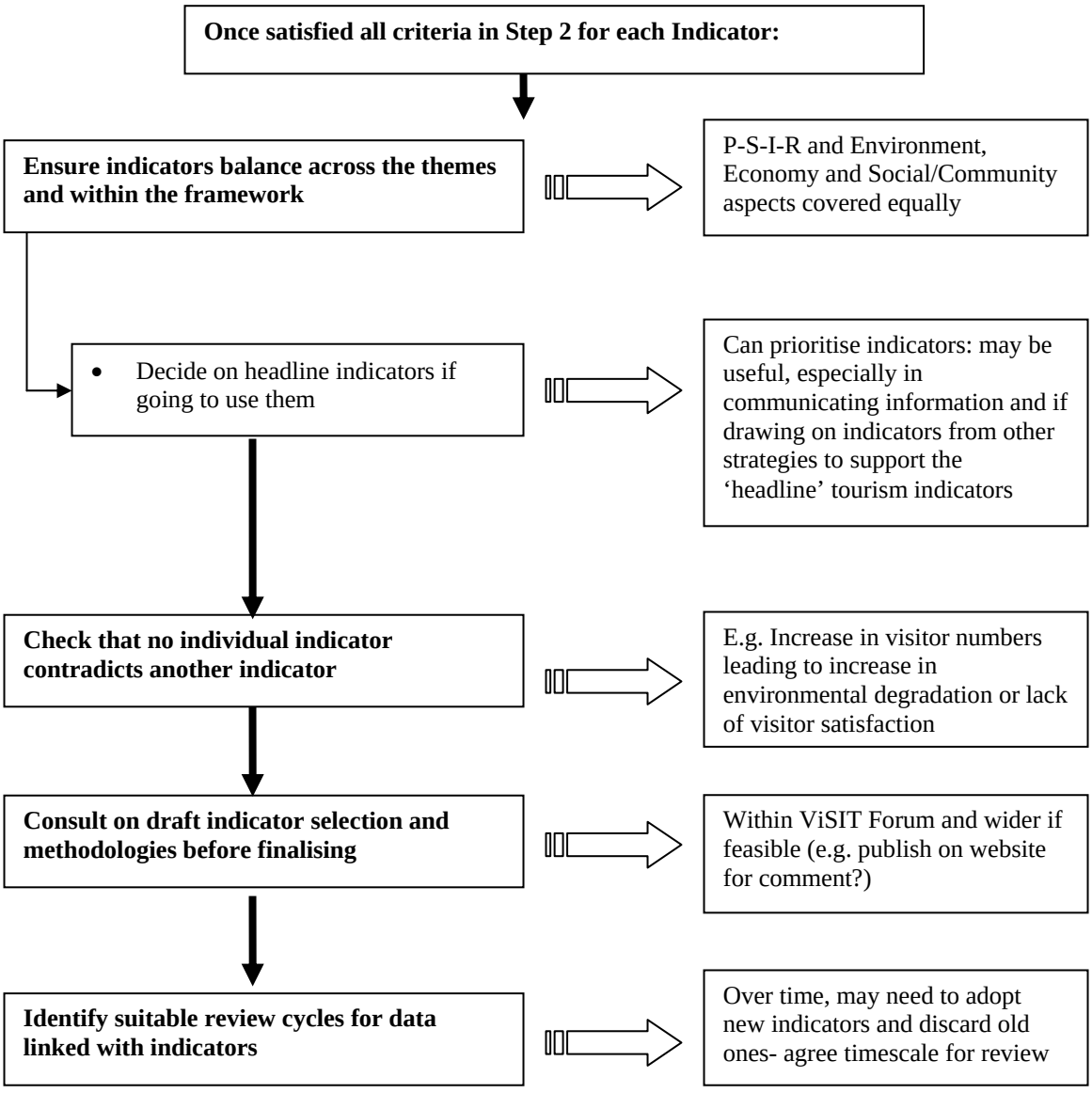

Is the indicator easily understood by those who will have to use it?
Is change easily interpreted?
✓ Enables monthly comparisons over the years
Does it relate to issues raised by the consultation process?
✓ Occupancy ⇔ Sustainability Seasonality issue identified in consultation
Does it provide clear guidance for decision making?
✓ Combined with other Visitor Survey data (including qualitative)
What is the appropriate time period and geographical area for the indicator?
Is indicator sensitive to change in reporting period or area?
✓ Monthly data; Area = CNP
Will it show trends over time?
✓ Data comparable over years
Can the indicator be measured?
If NO, see Box below
Similar data being collected elsewhere?
✓ By Visit Scotland
What are the sources of the data?
Individual enterprises and visitor surveys
Does data breach confidentiality when used for reporting?
✖ No
Does data exist at CNP scale?
✖ No, CNPA will need to adapt data supplied by Visit Scotland
Is the data continuous and future proofed?
✓ Assuming Visit Scotland continue collecting the data
Is the data contemporary?
✓ Collected every month
Is the data verifiable?
Checked and inc. all businesses?
Is the data robust to scrutiny?
✓ Yes- maintain records



For indicator with no existing data or verifiable data

- Identify acceptable data methodologies
- Cost resource requirements
- Agree best option
- Identify those responsible for data collection
- Schedule data collection

3. REVISING THE INDIVIDUAL INDICATORS



4. APPLYING, INTERPRETING and COMMUNICATING INDICATORS

Ensure resources available for applying indicators and acting on their findings

→ Be prepared to act! Indicators are *catalysts* for change; they won't themselves initiate any necessary change- this is down to you!

Ensure data collection, interpretation and reporting sensitive to timetables

- Factor in meetings, busy times for enterprises and communities

→ Needs to be co-ordinated process; Bear in mind: *'Tourism is everyone's business'* and 'consultation fatigue'

Set up and manage data collection processes

- Where possible involve all stakeholders in collecting and interpreting data

→ Involvement will encourage interest in results and increase awareness of ST. Include *all* tourist providers?

- Coordinate with other data collection for other strategies

→ E.g. with Visit Scotland; other departments within CNPA, individual enterprises etc

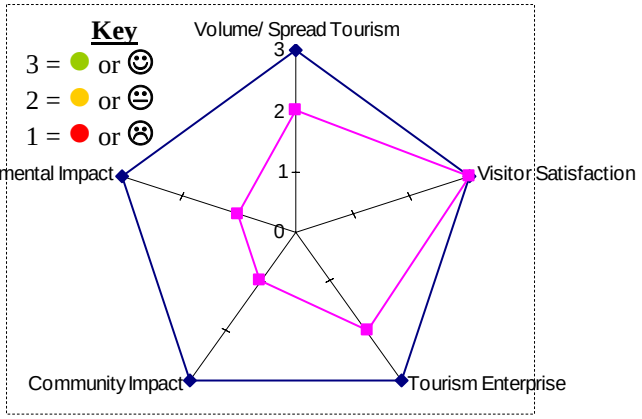
Compare indicator data to agreed benchmarks and baselines?

Ensure interpretation of the indicator results are agreed by key stakeholders

→ What is a 'good' result? Data may mean different things to different people

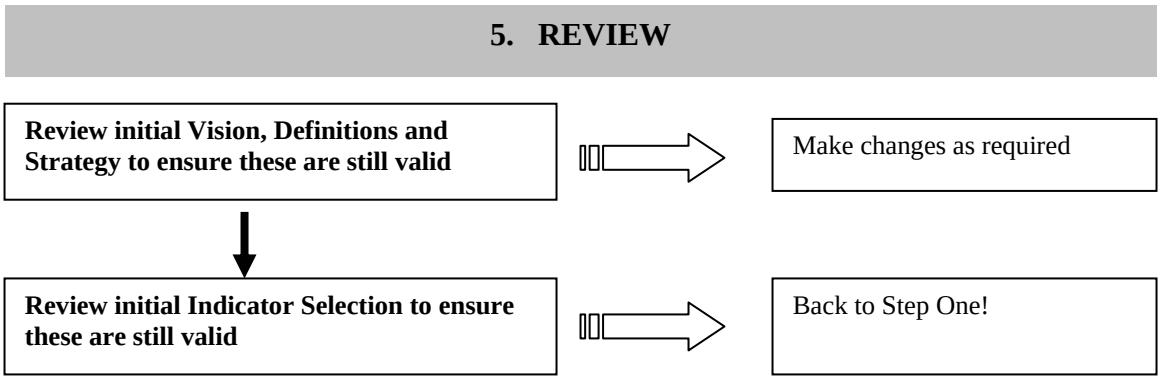
Identify suitable reporting mechanisms and formats for each indicator

- Use easily interpreted symbols
- Relate to agreed benchmarks
- Ensure overall picture for group of indicators can be presented e.g. AMOEBA diagram (see right)



Ensure results fed into all appropriate forums including other strategies

→ **Agree necessary actions and reprioritise existing action plans accordingly**



One key lesson from our work is to chart the progress of indicators in a visually informative and appealing manner. You will note the diagram uses techniques such as traffic lights or expressive faces that are translated into the multi-dimensional AMOEBA[1] (see p21) to provide a way of showing progress and highlighting action or danger areas.

8. Summary

8.1 The report provides an overview of a collaborative research project with the Cairngorm National Park Authority and the ViSIT Forum.

8.2 It describes a framework and associated checklist to support the process of developing and selecting indicators for sustainable tourism. However, the approach could be using for topics other than sustainable tourism.

8.3 It does not make specific recommendations about selecting indicators beyond the guidance provided here. The report highlights existing indicator sets but recommends using the checklist to see if these are suitable.

8.4 Although the checklist encourages detailed and difficult decision making, the report emphasises that the indicator cycle is part of an overall adaptive management cycle. Thus, it is more important to work through all stages of the cycle, than to spend too much resource on establishing technically 'perfect' frameworks or individual indicators.

8.5 For those who wish to explore the subject further, some recommended reading is provided in appendix 3 and the three background papers (literature review, existing indicator sets, interview outcomes) are available from us on request.

[1] An AMOEBA or RADAR diagram displays individual scores along each arm using a universal scale and then each score is linked by lines between the arms, to give a multi-sided shape. The aim is to get a large and symmetrical shape which indicates all indicators are giving a positive signal; the lop-sided AMOEBA illustrates where less progress is being made in particular areas.

9 Contact Details

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APPENDIX ONE

INTERVIEW OUTCOMES

A BROAD AND GENERAL SUMMARY OF RESPONSES TO ALL INTERVIEW QUESTIONS

Question		Summary of main responses	Issues arising from these responses
1.	*What do you understand by the term Sustainable Tourism?*	➢ 'Triple bottom line' approach: need to balance needs of the environment, economy and local community. ➢ 'Long-term' perspective: differing opinions of 'long-term'- 10 to 100+ years ➢ Spatially, ST not restricted to CNP: raised issue of local AND global considerations- 'ecological footprint' ➢ ST generally considered in wider remit of Sustainable Development but with 'Tourism angle'- differing opinions of how this should be approached	➢ Achieving a balance may not always be possible- if needs conflict, which should take precedence? ➢ Important that all are thinking within same temporal and spatial scale when choosing and implementing indicators. ➢ What does adopting a 'tourism angle' mean? Where does the true focus lie?
2.	*Following up on the theme of Sustainable Tourism, who do you think should be involved in striving to make tourism more sustainable in the CNP?*	➢ Immediate response largely 'everyone'- public agencies, private businesses/enterprises, local community and visitors all mentioned as having a role to play ➢ Re: who should lead? Responses ranged from 'bottom-up' approach (business and community driven) to agency-led (CNPA). Majority suggested a combination with CNPA as 'enabling/ coordinating' body to ensure 'everyone' acting responsibly. ➢ Emphasised need for strong business buy-in for STS to work.	➢ Role of ViSIT Forum: decision-making? Communication/ discussion? ➢ Is it representative- whose voices are missing? Does this matter? ➢ Who is leading and who will be required to act? ➢ What is meant by 'business buy-in' and what are the implications of this for the businesses themselves? ➢ Need clarification and agreement on participants terms of involvement
3.	*Could you explain what you remember about the process of developing the Strategy for Sustainable Tourism and to what extent you were involved?*	➢ Respondents all gave a similar account of the process of consultation with the contractor responsible for writing the Strategy. ➢ On the whole, a positive response to the process and satisfaction with the level of consultation and opportunity to comment. ➢ Several respondents commended the Europarc approach.	
4.	*Do you think the Strategy provides a good foundation for achieving Sustainable Tourism in the Cairngorms National Park?*	➢ On the whole a very positive response from all respondents, with some recognition of areas of weakness (environmental side specified by a few).	

Question		Summary of main responses	Issues arising from these responses
5.	*Do you think the Strategy for Sustainable Tourism integrates with the wider National Park Plan and other stakeholder plans?*	➢ Difficulty in answering this question as Park Plan not yet been viewed by many and some commented on the vast number of strategies emerging from CNPA. ➢ Opinion that STS coming first (before Park Plan etc) was positive and that strategies that follow have to fit in with the STS- Versus the view that need more joined up thinking within the Park. ➢ Only one respondent highlighted need for STS to 'evolve' as other strategies are developed and adapt to changes in the Park over time.	➢ This is an important area to consider as new strategies and policies are developed- the STS was produced as a 'working document' with potential to adapt to change very much envisaged. ➢ Although the STS has been developed before the Park Plan, the former should be seen to sit with the latter and not vice versa.
6.	*What do you think indicators are for?*	➢ Responses mainly focussed on the need to observe the impacts of policies and/or if meeting the (agreed) aims. ➢ Half of respondents mentioned the need to be aware of and adjust to change as a fundamental requirement of sustainability.	
7.	*What do you think are the most important aspects of Sustainable Tourism to monitor using indicators?*	➢ Refer to table 1 for full list of issues raised by interviewees.	➢ Although suggestions did cover a broad spectrum of issues, is it 'balanced' enough? ➢ Is the STS about maintaining the viability of the tourism industry (with the tacit recognition that this means maintaining the special qualities that bring visitors to the Park) or managing the impacts of tourism so the industry remains viable?
8.	*What are the practical steps for implementing the selected indicators?*	➢ Issues raised included: availability of data; resource/ cost implications; credibility of data- transparent, rigorous and assessable process of collection, analysis and interpretation; user-friendly and meaningful; importance of communicating to wider community. ➢ Re: who's responsible for selecting? CNPA seen as having leading role here, with businesses taking ownership of outcomes and responding accordingly.	➢ As with Q2, this question raised the issue for further clarification and agreement over roles- in some instances CNPA is seen as an 'enabler' but in others they are expected to lead and resource the indicator process.

Question		Summary of main responses	Issues arising from these responses
(8.)	*(What are the practical steps for implementing the selected indicators? /Continued)*	➢ Re: number of indicators? Views vary from number irrelevant (as many as needed) to number should be refined to 'reasonable' level by experts, to final selection should be up to those using them (i.e. ViSIT Forum). ➢ Issue of heterogeneity within the Park- tourism too diverse to be catered for by single set of indicators- therefore what's required will vary on spatial scale. ➢ Re: who's responsible for implementing/monitoring? Common view was for public agencies, working with private businesses	
9.	*What do you think about the suggested indicators listed in the Strategy for Sustainable Tourism?*	➢ See table 1 for more detailed comments on individual indicators. ➢ General response was positive with respondents recognising potential gaps and problems with the listed indicators. ➢ 'Volume and Spread of Tourism' indicators were widely accepted and received more positively than other areas. ➢ Some respondents felt that certain indicators (e.g. environmental and social) could be picked up within other strategies in the Park (e.g. the Park Plan and Housing Strategy) and as such did not need to be listed in the STS indicators, giving it a tourism focus.	➢ This question and Q7 solicited slightly conflicting responses when considering the responses to Q1. The current list is skewed toward the economic-side of tourism and the attention of interviewees seemed quite drawn to this, despite the widespread understanding of sustainable tourism being about a balance between economic, environmental and social factors (as expressed in Q1). Could/ should the indicators be developed to further reflect this understanding? ➢ Respondents often justified leaving certain indicators out of the STS as they would be included in other strategies. As such, they commendably recognised the importance of avoiding duplication and advocated the need for joined-up thinking. However, is there an inherent danger that if indicators are not explicitly drawn into the STS- even if the data will be provided by another strategy- then their results will not be taken into consideration, giving an imbalanced picture of the true state of (tourism within) the Park?

APPENDIX TWO

EXAMPLE INDICATOR SETS

A SELECTION OF INDICATORS OF SUSTAINABLE DEVELOPMENT AND SUSTAINABLE TOURISM DEVELOPED AT INTERNATIONAL, NATIONAL AND LOCAL LEVELS

Example Set A: World Tourism Organisation (WTO) Indicators

Source: World Tourism Organisation (2004) *'Indicators of Sustainable Development for Tourism: A Guidebook'*, available through: www.world-tourism.org

The WTO has developed a suggested short-list of key baseline *issues* and baseline *indicators*, and more specific indicators for application at different destinations.

➢ Baseline Issues and Indicators

Baseline Issue	Suggested Baseline Indicator(s)
Local satisfaction with tourism	➢ Local satisfaction level with tourism (Questionnaire)
Effects of tourism on communities	➢ Ration of tourists to locals (average and peak period/days) ➢ % who believes that tourism has helped bring new services or infrastructure (questionnaire-based) ➢ Number and capacity of social services available to the community (% which are attributed to tourism)
Sustaining tourist satisfaction	➢ Level of satisfaction by visitors (questionnaire-based) ➢ Perception of value for money (questionnaire-based) ➢ Percentage of return visitors
Tourism seasonality	➢ Tourist arrivals by month or quarter (distribution throughout the year) ➢ Occupancy rates for licensed (official) accommodation by month (peak periods relative to low season) and % of all occupancy in peak quarter or month) ➢ % of business establishments open all year ➢ Number and % of tourism industry jobs which are permanent or full year (compared to temporary jobs)
Economic benefits of tourism	➢ Number of local people (and ratio men to women) employed in tourism (also ratio of tourism employment to total employment) ➢ Revenues generated by tourism as % of total revenues generated in the community
Energy management	➢ Per capita consumption of energy from all sources (overall, and by tourist sector- per person day) ➢ % businesses participating in energy conservation programs, or applying energy saving policy and techniques ➢ % of energy consumption from renewable resources (at destinations, establishments)
Water availability and conservation	➢ Water use (total volume consumed and litres per tourist per day) ➢ Water saving (% reduced, recaptured or recycled)
Drinking water quality	➢ % of tourism establishments with water treated to international potable standards ➢ Frequency of water-borne diseases: number / % of visitors reporting water-borne illnesses during their stay
Sewage treatment (waste water management)	➢ % of sewage from site receiving treatment (to primary, secondary and tertiary levels) ➢ % of tourism establishments (or accommodation) on treatment system(s)
Solid waste management	➢ Waste volume produced by the destination (tonnes) by month ➢ Volume of waste recycled (m3) / Total volume of waste (m3) (specify by different types) ➢ Quantity of waste strewn in public areas (litter counts)
Development control	➢ Existence of a land use or development planning process, including tourism ➢ % of area subject to control (density, design, etc)
Controlling use intensity	➢ Total number of tourist arrivals ➢ Number of tourists per square metre of the site (per square kilometre of the destination) - mean number/peak period average

- **WTO Indicators for Application at Specific Destinations**

Included here are the suggestions for the following 'destinations': 'Parks and Protected Area'; 'Communities within or adjacent to Protected Areas'; and 'Natural and Sensitive Ecological Sites', which could all be relevant to CNP. (*Italic indicates a 'Baseline Indicator').*

Parks and Protected Areas Suggested Indicators	
Issues	**Indicators**
Visitor numbers	➢ *Total number of visitors to the Park and to key sites* ➢ *Peak numbers (peak day, month)* ➢ Length of stay ➢ *Use intensity on key sites (persons per km2)* ➢ Revenue from paid visitors ➢ Number of guides/operators permitted to use park ➢ % of all visitors who are in controlled/guided visits
Integrity of key protected systems	➢ Number of sites/ecosystems/assets considered to be damaged or threatened (% of all defined systems/assets in protected area) ➢ Indicators of health related to key plant and animal species ➢ % of park hardened for visitor or other use ➢ % of protected area subject to different levels of control
Damage attributable to visitor activity	➢ % of protected system in degraded condition (where possible classified due to cause) ➢ % trails and routes (length) in damaged condition ➢ Cost of repair to damaged systems (annually) ➢ % of park area affected by unauthorised activities (hunting, tree cutting, poaching etc) ➢ Number of incidents of poaching identified
Level of visitor control and monitoring	➢ Number of human/animal contacts reported involving injury or risk of injury ➢ Number of crimes against tourists ➢ Number of incidents of vandalism ➢ % visitors who do not pay for entry (where entry fee is charged) ➢ Number of wardens or control staff (and number per tourist)
Marketing	➢ Amount spent on marketing the protected area
Management	➢ Number of park officials (wardens, managers, maintenance etc) ➢ Number of enforcement personnel per visitor ➢ Cost of protection ➢ Number of public/community meetings held with stakeholders, including local periphery communities ➢ Ratio of revenues to costs for Park operations

Communities within or adjacent to Protected Areas Suggested Indicators	
Issues	**Indicators**
Impacts of community activity on the park-management and protection	➢ Number of incidents regarding violation of park rules by local residents
Impacts of the park on community residents	➢ Opinion of the value/relationship of the protected area to the community (questionnaire based) ➢ Number of complaints to park management
Degree to which co-planning and management is done	➢ Existence of a participatory approach to community and protected area collaboration in planning and management ➢ Degree of/frequency of participation in participatory processes ➢ Alternative tourism programmes in adjacent communities promoted or organised at the park (number and capacity, participation, tourist satisfaction with programmes)
Level of co-operation between the protected area and park community	

Natural and Sensitive Ecological Sites Suggested Indicators	
Issues	**Indicators**
Ecological Value	
Representativeness (whether the resource has characteristics typical of the ecosystem)	➢ No. of species typical of the area present at the site (and no. individuals) ➢ No. of unique or rare species present at the site (and no. of individuals)
Uniqueness (rarity of the site relative to group e.g. wetland, desert)	➢ % of site area occupied by rare or unique species ➢ No. of individuals in the population or rare and unique species ➢ % of endemic species at the site
Level of site protection	➢ *% of area subject to control* ➢ Recognition by international programmes
Tourism Value	
Fragility	➢ No. of species and endemic species ➢ No. of species and endemic endangered species ➢ Populations of every species ➢ Temporal rate of variation of species
Tourism feasibility (access, traditional uses, management capacity, economic viability restoration costs, operation and maintenance costs)	➢ *Level of acceptance of the tourism activity by the local community (% positive)* ➢ Inventory of attractions (distinguished natural features, including flora and fauna, landscapes) ➢ No. of observations of fauna or flora per circuit and per season ➢ No. of days of observation of natural features per season (e.g. wildflowers in bloom, migratory birds) ➢ Profitability of tourism activity at the site (% return on investment, net incomes) ➢ Management capacity: presence of a management body, plan, site restoration and regeneration programmes (% of site covered) ➢ Cost of acquisition/protecting/restoration of the site ➢ Estimated time to full restoration of the site (for degraded sites)
Educational-interpretive	➢ No. of opportunities for interpretation and education at the site

value: (value of the site for educating and awareness raising- natural sciences, history and local traditions)	(existence of guided visits, printed self-explanatory materials, trails, educational itineries, etc) ➢ Natural and educational value given to the site by educators, NGOs, tour operators.
Accessibility: refers to ease with which the place can be visited	➢ No. of access routes in good condition for tourism (paths, motorised, airstrips etc) ➢ % site accessible to those with disabilities
Attractiveness : include parameters of an aesthetic, emotional or perceptual nature	➢ Aesthetic/perceptual evaluation by the visitor ➢ Presence of key ecological features of the site in media and tourism promotional material
Tourism carrying capacity of the site: site's capability to serve as the venue for tourism/recreation	➢ No. of visitors acceptable, according to the perception of visitors themselves ➢ No. of visitors acceptable according to the capacity of equipment and facilities of the site (depends on capacity studies establishing limits) ➢ No. of visitors acceptable; re capacity estimates ➢ No. of visitors / no. of individuals per species
Site management	
Tourism management plan for the site	➢ *Existence of a tourism management plan for the site (also % site covered by plan)*
Regulation of the site	➢ Existence of rules to regulate construction, hunting, fishing, extraction of natural resources at the site (and % of key resources included) ➢ % of site with regulated zoning/controls, extent of tourism zones
Use Intensity	➢ *No. and origin of visitors to the site per season (day, month)* ➢ Average length of stay ➢ No. of tour operators with permit to operate at site
Tourism management capacity	➢ Annual expenditure on management and control ➢ % of resources actually assigned /resources requested by the administration for management of the site
Tourism's contribution to site conservation	➢ Visitor fees ➢ Concession fees ➢ Donations from visitors and tour operators ➢ Fees from guiding and other services ➢ In-kind contributions (e.g. equipment, volunteers) ➢ Sale of goods (e.g. informative materials, handicrafts, equipment)
Management of spaces for tourism use	
Trails and paths	➢ % soil loss on trails ➢ No. of soil erosion points along trails and vehicle paths ➢ % of protected area in eroded or degraded state ➢ Vehicular congestion (average travel times on main access routes during high/low season
Camping areas and accommodation	➢ Area or campsites per tent ➢ No. of campfires allowed for camping areas ➢ No. of erosion points in camping areas ➢ Total density of camping use (persons per m2 in peak season) ➢ No. of campers per toilet ➢ No. of beds (other accommodation) ➢ % of occupancy of camping sites and accommodation
Community Participation	
Local community participation	➢ % of local products and service consumed by tourism (at least 70% of goods and services acquired for tourism operation of the site from local enterprises or individuals)

	➢ Employment of local residents in site management and tourism operations (numbers, income levels) ➢ Level of satisfaction of residents regarding tourism development in the area- particularly regarding that targeting natural systems ➢ Level of assistance to local environmental awareness: no. of local awareness-raising actions (courses, meetings, promotion of content in the curriculum of local educational system, etc)
Ecosystem Management	
Water quality	➢ Water quality: contaminants in surface water and ground water ➢ Turbidity of streams
Air, noise pollution	➢ Noise pollution due to motors: visitors perceiving annoying motor noises (cars, launches, motorcycles, planes, generators) in natural areas
Impacts on flora and fauna	➢ Biodiversity index of flora and fauna ➢ Population sizes of key species ➢ No. of introduced species (exotic fauna and/or flora) (% of total) ➢ Level of illegal hunting and fishing at site during high season (loss of animals, number of incidents) ➢ Loss of species due to use as tourism souvenirs ➢ No. of fauna run over by traffic (road kills) during high season (ratio to low season) ➢ % increase in infectious diseases to flora and fauna of site ➢ Frequency of species census ➢ % variation of species
Aesthetics	➢ Amount of litter in natural areas (seasonality of waste can relate to tourist numbers) ➢ Presence of visual barriers, visual pollution ➢ Existence of viewpoints ➢ Scenic valuation by tourists (perception- questionnaire)
Visitor satisfaction	
Visitors	➢ Level of satisfaction of visitors
Intermediaries	➢ Opinion of local Tour Operators (% with favourable opinion) ➢ Opinion of foreign tour operators (% with favourable opinion)

Example Set B: English Tourism Council National Sustainable Tourism Indicators 2002

Source:
http://destinet.ewindows.eu.org/policies_resources/fol955810/English_Tourism_Council_National_Sustainable_Tourism_Indicators_2002

INDICATOR		MEASURE
Group 1: Protect and enhance the built and natural environment		
1.	Number of businesses signed up to environmental management schemes	Number of businesses with e.g. The David Bellamy Conservation Award, ISO14001, EMAS, GTBS, Green Lanterns etc.
2.	Number of English beaches with a Blue Flag and a Seaside Award.	Number of beaches, reported annually
3.	Carbon dioxide savings made by the hotel industry.	CO2 savings by hotels as a result of installing energy efficiency measures.
4.	Transport used on England holiday trips by UK residents.	% of trips by mode of transport (Public, private car, hired car, other)
5.	Local authorities with Tourism Action Plans.	% of Local Authorities with Tourism Action Plans
6.	Ratio of the land and historic buildings protected by national agencies against the amount of money spent on protection of these assets.	Ratio
Group 2: Support local communities and their culture		
7a.	Workforce employed in tourism.	% of total workforce
7b.	Average hourly earnings in tourism versus the average national hourly wage.	Ratio
8.	Local authorities with LA 21 strategies that include sustainable tourism elements.	% of Local Authorities
9.	Audit of community perceptions of tourism	No further information available
10.	English adults not taking a holiday of four nights or more.	% of English adults
11.	Accommodation registered as meeting National Accessible Scheme criteria for disabled people.	Percentage
12.	Local authorities with tourism strategies that incorporate cultural and heritage considerations.	Percentage of Local Authorities
Group 3: Benefit the economies of tourism destinations		
13.	Tourism accommodation enterprises participating in Welcome Host training.	Number of tourism accommodation enterprises
14.	Accommodation registered with ETC, AA or RAC Quality Assurance Scheme.	Percentage of accommodation
15.	Extent of visitor satisfaction.	Survey with 6 point scale from 'not at all' to 'completely' satisfied.
16.	Domestic tourism spend by region.	No further information available
17.	Contribution of English tourism to UK economy.	Tourism contribution as a percentage of UK GDP
18.	Composition of tourism sector by business turnover	No further information available
19.	Trips to England by UK residents.	Total number of trips per month
20.	Net domestic holiday spend by UK tourists.	(English domestic holiday spend + Spent by other UK residents in England + Overseas' visitors spend in England) – Spend abroad on tourism by English residents = Net domestic inflow/outflow over time (£m)

Example Set C: Scotland- 'Meeting the Needs'- Indicators of Sustainable Development *(Currently under review- to be republished Spring 2006)*

Source: http://www.scotland.gov.uk/library5/rural/mtnsd.pdf

Indicator		Measure
Resource Use		
1	Sustainable Prosperity	Index of CO_2 emissions divided by GDP
2	Work: people as a resource	Percentage of unemployed working age people
3	Population structure	Proportion of population which is of working age
4	Waste production	Municipal waste arisings in million tonnes of waste
5	Waste: recycling	Percentage of total household waste recycled
6	Waste: landfilled	Biodegradable municipal wastes land-filled in million tonnes
7	Climate Change	Million tonnes of greenhouse gases carbon equivalent
8	Air quality	Number of Air Quality Management Areas
9	Water quality	Kilometers identified as poor or seriously polluted
10	Biodiversity	Percentages of Biodiversity Action Plan species and habitats which are identified as stable or increasing
11	Sea fisheries	Proportion of fish stocks which are within safe biological limits
Energy		
12	Energy consumed	Electricity consumed in gigaWatt hours
13	Energy: renewable	Percentage of electricity generated from renewable sources
Travel		
14	Travel: distance	Total vehicle kilometres
15	Travel: industry	Freight intensity (relationship between tonne kilometres moved and GDP)
16	Travel mode	Percentage of journeys to work not using car
17	Travel: accessibility	Percentage of Scottish households within 6 minutes walk of a bus service
Social Justice		
18	Home life	Percentage of children living in workless households
19	Preparing for life	Percentage of 16-19 year olds who are not in education, training or employment
20	Fuel poverty	Total number of people living in fuel poverty
21	Social concern	Number of homeless people entitled to permanent accommodation
22	Crime	Total number of crimes
23	Volunteering	Percentage of people taking part in voluntary activities
24	Health	Life expectancy at birth

Example Set D: Cairngorms National Park: Park Plan (Proposed) Indicators

Source: CNPA Draft Park Plan (2006) available through:
http://www.cairngorms.co.uk/parkauthority/nationalparkplan.htm

A set of indicators are proposed to provide a snapshot of the overall 'health' of the Park at any given time and to feed into a review of the cumulative impact of the Plan on the Park.

No.	Indicator Theme	Potential Indicators
1.	Landscape Change	• Land-use cover change • Change in field boundary features (hedges and dykes)
2.	Affordable Housing	• Ratio of houses in priority need to number of annual social rented properties available • Level of private landlords' uptake of grants and other forms of assistance to provide affordable rented housing
3.	Population Profile	• Proportion of population of working age • Proportion of population under 25 years old
4.	Seasonal Employment Rates by Sector	• Employment rates by sector (full-time, part-time and seasonal)
5.	Agricultural Activity	• Total income from farming • Number and area of active farm units
6.	Biodiversity	• Wild Bird Populations • % of Local Biodiversity Action Plan Species in favourable condition • % of Local Biodiversity Action Plan Habitats in favourable condition
7.	Water Quality	• Ecological condition of river water • Conservation of hydromorphology
8.	Traffic Volumes and Modes	• Traffic volumes by modal split on selected routes • Levels of use of public transport
9.	Education and Learning	• Number and % uptake of available outdoor education places • Number of participants in the Land-Based Business Training Programme • Number of participants in the John Muir Award • Level of qualifications achieved
10.	Waste	• Total waste arisings • % waste recycled • Access to kerbside recycling facilities
11.	Visitor Enjoyment of the Park	• Visitor numbers • Visitor spend • Duration of visits
12.	Cultural Heritage	• % of Listed Buildings and Scheduled Ancient Monuments at risk • Number of community heritage groups/museums • Number of cultural heritage events
13.	Business Health	• Levels of employment by business type
14.	Geographical Availability of Services	• Distance of services from households • Time taken to reach key services
15.	Community Vibrancy	• Levels of use of community meeting places • Levels of volunteering • Levels of participation in community council elections

APPENDIX THREE

USEFUL RESOURCES

A SHORT LIST OF LITERATURE TO GUIDE FURTHER THINKING

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