

## **UK INDICATORS OF SUSTAINABLE FORESTRY REPORT ON WORKSHOP - 16 MAY 2001**

This report summarises the main points from the UK Indicators of Sustainable Forestry workshop in Bromsgrove on 16 May 2001. Points from the final plenary session are outlined below, followed by notes from the four breakout groups:

- Environmental A
- Environmental B
- Social
- Timber/Economic

Participants in the breakout groups are listed in the Annex. Participants are encouraged to send written comments on the indicators, up to 30 June, particularly on any topics that were not discussed at the workshop.

### **FINAL PLENARY SESSION**

The following points were made in the general discussion in the final plenary session:

- There is no indicator of below-ground biodiversity. This point was broadly agreed, though birds (for example) give an indirect indicator because of their position in the food chain.
- Landowners are not mentioned within the social aspects indicators. Some indication of landowners' contribution to forestry would be desirable.
- Volunteer activity is a good proxy for community involvement.
- A European project, Bioassess, has been looking at measuring biodiversity, and could be used here as a basis for choosing indicators.
- Local communities can be used as case studies for the most difficult indicators, which will also tie in with local government and other developments.

And some more general points:

- The interpretation of the indicators needs to be handled carefully – they are *not* targets.
- All indicators will need “validation” – checking that they are related to the topics they are supposed to indicate, and that the methods and approaches used are consistent and comparable.
- A wide view is needed – for example for the landscape, a landscape indicator is what is needed, not a *forestry* landscape indicator. So a joined up approach is necessary. The Countryside Survey may be useful as a source for this. It was also noted that trees are “the most important part of the landscape”, so there may be some debate to be had on an appropriate indicator.
- Wood processors and the tourist industry were under-represented at the workshop – their involvement should be secured in the indicators process.
- Should UK-level indicators reflect an average performance or the diversity of performance?

**Simon Gillam / Paul Smith  
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8 June 2001**

## **ENVIRONMENTAL “A” BREAKOUT GROUPS**

There was some initial discussion of the definitions of woodland (the NIWT definition was adopted as a working definition) and sustainable (for which we took the four-point definition from the Quality of Life (QoL) counts). We also considered whether indicators should have a direction – there was a range of views, but it became clear from much of the later discussion that it can be difficult to say which direction is “good”. Some participants thought that unless such a judgement could be made, there was little point in having the indicator.

Some general principles came out in the course of the discussion:

- Interaction and linkage with different sectors is important. Forestry is only one possible vehicle for delivery of certain outcomes, and should be compared with other options.
- It is important to be able to compare indicators in forestry with conditions in other sectors, for example the breeding birds indicators in the QoL counts.
- Trade-offs between different indicators should be highlighted where we know them. It will never be possible to optimise all the indicators simultaneously.

### **General**

Woodland at a landscape scale is important for biodiversity. We wanted to see representation in all landscape types, and so would like an indicator of equitability of woodland distribution over land classes. The landscape context for woodland area is also important – there was a need to know what new woodland was replacing, what type of soil it is on and so on, so an indicator with evidence of flows (gains and losses) by type would be useful.

Climate change was not mentioned explicitly in the indicators discussion document, but people considered that it was important to be able to follow its effect on valued woodlands, and to have some measure of the vulnerability of woodlands, perhaps using ancient woodland indicators.

### **Soil and water**

A suggested approach for (soil) pollutants is to use % woodland area exceeding a critical load; there are national datasets of critical loads (developed by CEH Monks Wood), and these have also been constructed for individual habitats. The “Bunce plots” (a series of woodland soil plots) are also to be resurveyed. A further topic of interest is acidification and cation depletion due to timber harvesting, which is also related to management (and particularly associated with whole-tree harvesting). Any indicators in this area should be linked to the soil sustainability work/indicators also under development.

Water yield has a seasonal element, with woodlands absorbing more water in wet conditions, but reducing yield in dry conditions. In all of the indicators, modelling might be necessary to relate measures to outcomes. Water quality information is available from the QoL Counts and Environment Agency. There was a general view that upland water quality could be linked with forestry, but that in the lowlands this task was much more difficult because of the effects of other land uses. One possible solution would be to classify catchments into different types based on the amount of woodland (possibly using Countryside Survey natural areas), and use this as a basis for reporting.

## **Air Quality**

The actual outcome to be measured here is the effect on public health, but it was unclear how that should be measured. Carbon sequestration may be needed for public perception, although it is closely related to the woodland area in its calculation.

## **Priorities**

The afternoon workshop focussed on identifying the most important indicators for the environmental topics.

**E** For soil and water we considered that E5 *water quality* is inclusive, and reflects both soil and water conditions. There may be a problem in that it covers a wide topic area, and there will be a need to decide on sources and measurements.

**F** For air quality discussion choosing a single indicator was more difficult. Carbon sequestration is too closely related to forest area to be useful as a single indicator. Our eventual preference was for an indicator from a different section: C1/C2 *deposition of Nitrogen/Sulphur*. (Perhaps both could be combined in one indicator?) It was felt that deposition of particulates was not particularly relevant.

**C** Forest Condition and Management. There were no obvious candidates here, and there was considerable discussion before C5 *Crown transparency from forest condition survey* was suggested as the best, although it has many problems. We definitely wanted to report crown condition by species. There was also a strong feeling that some indicator of regeneration/planting would be useful. Other suggestions included the use of girth increment compared with an average as a measure of forest condition.

**D** Biological diversity was a difficult topic to summarise in a single indicator, and after discussion we came up with three that were useful as overall indicators of biodiversity. D5 *birds* was thought to be useful as they are at a high level in the food chain, and hence may reflect some of the diversity at lower levels (insects, plants and so on). D1 *Ancient woodland* was also important as an indicator of the best habitats. A third indicator was favourable condition of protected area – this indicator is not part of the discussion document, but would need to capture changes in condition rather than just area as in D3 (which was felt not to be useful).

**I** Heritage/landscape. There was a strong feeling that landscape, including a measure of local distinctiveness, was of most importance to the public, and that a single indicator in this area would thus have to be a landscape one. It was also commented that the landscape issues are much more important than is implied from the consultation document, and that they should be emphasised.

## ENVIRONMENTAL “B” BREAKOUT GROUPS

This group concentrated on indicators of biodiversity, rather than soil and water issues.

### General points

1. Indicators need to be of long term value and interpretation needs to bear in mind that there are often delayed responses to events and drivers of change. Interpretation also should be based on a better developed understanding of sustainability and the limits of acceptable change. We could easily presume that policy and therefore indicators will be sustained but history says otherwise: indicators should be selected to be those things unlikely to change in importance; this suggests we should focus on fundamental attributes of forest ecosystems.
2. We need outcome indicators rather than measures of activity or inputs. The value of indicators must be validated; e.g. the assumed relationship between indicator and the attributes ‘indicated’ needs to be tested. This is especially a problem for biodiversity where there are huge numbers of species and features which could be of interest. The costs of collection push us towards a few aggregate indicators but this must be balanced with decreasing precision and meaning as fewer and coarser attributes are measured.

### Comments on specific indicators of biodiversity

3. Condition as well as extent of native woodlands must be addressed (for example the difference between ASNW and PAWS). A composite indicator group should be created from D1, 2, and parts of 4 to address native, semi-natural and ancient woods. Impacts on other habitats should be added e.g. from expansion of native woods. We also discussed having an indicator for the area of new native woodland.
4. Drop protected areas (D3) as it does not relate to outcomes. D3 could, however, be fitted into D1, D2, D4 as a composite in terms of “of which, how much is protected”.
5. All the other biodiversity indicators are relevant to some extent but need further development and/or clarification.
  - D5 (Species) needs further thought about the value of some species as indicators of conditions for others, as well as the species which should be selected as rare/threatened or otherwise important. Subsets of woodland birds which depend on particular features of woodland like dead wood could be better than the current suite. Information on butterflies and bats (currently available and similar to nationally collected bird data) might be used. Target SAP species could be good if they meet other needs too. Below-ground species, particularly fungi, appear to be missing in the draft indicators.
  - D6 (Vegetation condition) could be refined to focus the Ellenberg scores on ancient woodland indicators or other selected threatened species.
  - D 7,8,9 (Genetic aspects) need more thought based on policy development of what is most important in genetic conservation. For example D9 natural regeneration might be better targeted at ASNW only.
  - D10,11 (Structural diversity indices) need to be focussed onto the best measures which are significant for biodiversity, perhaps those arising from the current review by FR.
  - D 12 (dead wood) is important but should be added to by other aspects of ‘old growth’, or possibly using old growth as an indicator in its own right.
  - D13 (edge/area ratio) was not convincing: as per 10 and 11, review of the value of particular measures is needed. D13 & 14 could be amalgamated to an indicator of Core Area which could include connectivity and edge/area ratio as composites. This has direct consequences for sustainability of the site in the face of external impacts such as climate change.
  - D14 (Connectivity): important but for what and how best to measure it, as per 10,11,13.

**Most important indicators**

The group voted for priorities across the whole range of indicators, each member having 8 votes. The results were that 32 indicators were voted for altogether but the top 9 with 4 or more votes each were:

A1 (9); D1(6); D5(5); D12(5); F1(5); G none of the present list (5); A3(4); E5.2(4); E2.4(4).

**Further advice on particular indicators.**

- GIS presentation would improve information which could be conveyed about pattern and distribution and allow analysis at different scales, eg for native woodland.
- Soil below ground biodiversity, e.g. mycorrhizae should be considered as a missing component.
- Status and trend (stocks and flows) information was needed in most cases.
- Nutrient budgets at whole catchment scales and including all land uses not just forests were needed for soil and water indicators.
- An indicator is needed for people's appreciation of forests, which is wider than the quantitative forest-use statistics currently offered.

## SOCIAL BREAKOUT GROUPS

### General comments

The social indicators were based on available data, some of which are outdated. It would be useful to identify possible indicators even if we are not able to obtain the data at present. The following five areas of social forestry might be priorities for indicators:

1. Recreational use - (Accessibility and transport),
2. Participation / Consultation,
3. Landscape quality – (Heritage)
4. Employment, and
5. Perceptions.

Social issues encompass more than forestry. There should be links with other indicators in Quality of Life Counts, such as K7 (access to green space) and K6 (quality of surroundings). For such issues the FC should not develop indicators in isolation, but jointly with other departments and agencies.

### Links to economic indicators

The group agreed that social and economic indicators are closely linked. Forests are important as places where services are delivered (recreation, tourism) and forestry's contribution to the rural economy should be measured. In some forests, the annual value of tourism can be much greater than the annual value of timber harvested.

There was a lot of support for an indicator looking at forestry in the wider rural economy, but no ideas on how to assess this (apart from the possibility of developing it with tourist and development agencies). There was also a discussion about the value of woodland as a non-monetary concept, but no new ideas were suggested.

### Recreation

Location: The location of woodland is important in terms of use - a small woodland close to or in an urban area could be just as valuable as a large woodland in a rural area. GIS could be used as a possible means of relating the location of woodlands to social factors (such as incidence of deprivation) in neighbouring areas. It could also be used to map out population centres around accessible woodlands. A general index of proximity could be developed, showing how much of the population has woodland within a certain range of their homes; this is relevant to all, not just as a measure related to deprivation.

Access: Accessibility is important; proximity does not necessarily imply accessibility. Most woodland open for access is not near to where people live. Public transport is important in providing access to woodland for those without their own transport. Specialist users, such as mountain bikers, are more willing to travel than locals walking their dogs.

Woodland Use: The following information was identified as being useful:

- Who visits the woodland (age, gender)? Where do they go? What is the purpose of their visit? How satisfied are the visitors with woodland recreation?
- Those who do not visit the woodland: Do they want to visit? If they don't, do we understand why? (e.g. a lack of awareness about the forests, lack of transport). If they do, are there impediments we can do something about?

A concern was raised about using the on-site surveys that are already in place as they tend to be biased towards large, high use sites. Other alternatives for data, such as the UK Day Visits Surveys were mentioned. There is a need for demographic information about the visitors to woodlands. There is little data available about recreational use of private

woodlands. There was concern about the data available on access to woodlands (the Countryside Agency thought there might be some current work on this).

*Regional:* An increase in the number of visitors is not necessarily a good thing, and could lead to a decreasing quality of experience and stress on local people. There was discussion about the value of regional indicators and the possibility of rotating surveys that looked in depth at one area each time. But it could be costly to carry out such surveys at regular intervals, and these surveys would not have the qualities required of a National indicator.

### **Communities/ Participation**

It is relevant to measure how neighbouring communities feel about woodlands, in addition to seeking individuals' views. Another possible indicator could look at volunteer activity. Anti-social behaviour was also discussed (e.g. crime/safety, perceptions of risk).

Some of the group thought that the indicators should measure the extent to which the forestry industry is effective in involving people in forest planning and management. The UK Strategy for Sustainable Development '*A Better Quality of Life*' emphasises the importance of volunteer activity. The group suggested that volunteer activity might be a useful indicator of participation that should be quantifiable.

### **Landscape**

Forestry's contribution to the landscape is important. This could be an area in which joint indicators would be useful, for example, an indicator for countryside quality which forestry could feed into. The "Countryside Character" approach is helpful in this context. The Woodland Trust is engaged in opportunity mapping work focussed on the enhancement of ancient woodland. But development of a landscape indicator for forestry should not be sidelined, waiting for others to develop a universal indicator.

The landscape assessment, carried out as part of monitoring for the UK Forestry Standard, assessed performance against benchmarks based on accepted best practice - a normative indicator. Although concepts of best practice change over time, the assessment is a reflection of what society requires at the present time.

### **Cultural & Heritage**

There was no discussion of historical landscapes and heritage, except an acknowledgement by the group that this is an important area. Ancient woods in the historic landscape were sources of local culture and folklore, and woodlands have an important but undefined place in contemporary culture. The group felt that this is an area that requires further attention.

### **Employment**

The activity categories shown for Indicator G5 are outdated and need to be reviewed. The numbers of work-years in forestry and primary wood processing do not on their own give enough information and other areas (listed below) are also of interest.

- Other employment related to forestry, including secondary processing using timber and also suppliers of goods and services, all contributing to sustainability of local economies,
- The kinds of jobs – it was felt that although work in certain areas was decreasing, many jobs were not lost as workers shifted into other forestry areas,
- How long jobs last for (seasonal)?
- The economic impact in rural terms, rather than timber production terms,
- Demographic information – age, gender, length of employment in the sector.

To obtain the additional information, a good quality baseline needs to be obtained first. The main problem in obtaining further information would be the cost involved.

### **Workforce** (Including conditions and training)

Some of the group felt that indicators of the quality of jobs, including skill levels, and their contribution to the local economy would be useful (one suggestion was an indicator relating local earning to local spend). One member of the group felt that those without professional qualifications were being excluded from surveys and that the employment figures did not cover all people working in forestry. Most of the group felt that further information about employees could be useful (e.g. where people live and work, localised economy).

### **Health & Safety**

The only data available are on the number of accidents, but this would not provide the whole picture as visitors who suffer minor injuries would not report them. The number of accidents should be taken in context (e.g. by comparison with number of accidents in the home).

Health benefits of woodlands are becoming increasingly important. This area was identified by the group as needing an indicator, but there are insufficient data at present.

### **Public Attitudes and Perceptual Indicators**

The Rural White Paper suggests that perceptual indicators should feature more prominently, and be used more in policy making. Some of the group wanted to see an indicator on public attitudes that used qualitative case studies to look in depth at perceptions of forestry, for example the impacts and effects on people, and the match between expectations and actual experience. However concern was expressed about the reliability of such an indicator, as it was felt that case studies and other qualitative techniques (such as focus groups) would not have the qualities required by a national indicator.

### **Landowners**

Landowners had not been mentioned in the consultation document, and have a particular interest in sustainable forestry. Landowners' rights are identified as a concern in both the European and UN processes for sustainable forestry. It was noted again that there was very little data available about the private sector woodlands.

## **TIMBER/ECONOMIC BREAKOUT GROUPS**

The timber/economic breakout groups considered the indicators in Section A (Forest Area), B (Forest Production), C16-C19 (Forest Management) and H (Economic). This note is organised into:

- General points
- Most important indicators
- Other useful indicators or background information
- Indicators recommended to drop
- Additional suggested indicators

### **General Points**

- All indicators should be broken down to give figures for England, Scotland, Wales and Northern Ireland, not just totals for UK or GB.
- Forestry has a good positive message to promote, but the benefits of forestry include aspects that are difficult to measure or value. It is important that these aspects are included in a prominent position, not just as a small note like H6.
- The quality of timber and economic data is generally poor for small forestry businesses and woodland owners, and is not good enough for effective strategic planning. It may be possible to collect additional data on some topics by in-depth surveys of small representative samples, in which the respondents are given a suitable incentive to participate. The FC could also consider adding a requirement for all owners to report simple summary data on amounts harvested, linked to administrative systems for grants and/or felling licences.
- The consultation draft is an expression of what we would like, but goes far beyond what we can afford. There is a trade-off between quantity of indicators and quality – we need to prioritise.

### **Most important indicators**

- A1 (Total area): Don't need to be concerned about differences in definitions
- A8 (Total planting, by species)
- A9 (Loss of woodland): Important on its own, but also note links with C17 (Quality of Management).
- B1 & B2 (Volume of growing stock, by main species)
- B7 (Harvesting and losses as % of increment): Possible that it could exceed 100% for a time, and still be sustainable, depending on age profile of forests. Current work by Forest Research to see whether this is likely to happen at time of harvesting peak around 2020.
- B8 (Home-grown as % of consumption)
- C16 (Area of managed forest): Recommend just having a total, not a sub-indicator of area managed for timber. Note that some woods fall out of WGS after 5+ years.
- H1 & H2 (Inputs and Outputs): Important to present these together, giving value added measure. Also important to include private sector data based on representative sample (see general points).
- H6 (Environmental accounts and non-market benefits): Needs to be given much more prominence, even if data don't yet exist.

### **Other useful indicators or background information**

- A2 (Geographic distribution): Useful background information. Information derived from this may also be an important component of other indicators (access for recreation, location of processing in relation to timber availability, etc)
- A3 (By main species): Agree grouping in draft (Scots pine with broadleaves)

- A4 (By ownership): Useful background information. New estimates from NIWT will make it more useful. Warning that agricultural census may understate farm woodland. Note link with C19 (number and size of holdings).
- A5 (Age classes): Should show separately conifer and broadleaved.
- A6 (New woodland creation): Contributes to A1 and A8, so not essential to include as a separate indicator. If included, the graphs should use the same scale.
- A7 (Restocking): Not important on its own; contributes to A8.
- A10 (Stocks and flows): A useful summary, but not an indicator on its own.
- B4 (Gross annual increment)
- B5 (Natural losses): Not a major problem for the UK. Note that “natural” includes arson. May be possible to compile a better estimate by combining estimates from all the categories of serious damage (see section C), and this single indicator could then encapsulate a lot.
- B6 (Harvesting): Contributes to B7
- B9 (Energy uses)
- B10 (non-timber forest products): For data collection, should engage with other bodies (e.g. for venison), and consider sample data collection.
- C17 (Quality of management): Relevant aspects include species change, degradation, neglect.
- C18 (Management systems)
- C19 (Size of woodland holdings): It would be desirable to present this next to A4, as it has wider significance than management.
- H4 & H7 (Value added in forestry & timber processing): Information about value added is important (see also H1+H2), but there is concern that these ONS data sources do not give good measures for the forestry sector, because of the lack of data for small businesses, and lack of identification of UK forest products. Better sources would have to be developed.

#### **Recommended to drop**

- B3 (Mean volume per hectare): Agree not important for UK
- H3 (Rate of return): requires assumptions about future timber prices.
- H5 (Multipliers): Doubts about the quality (and difficulty of understanding) for both the ONS and Forestry Multipliers. Could review if better data become available, and they can be clearly explained.

#### **Additional indicators**

- Related to B8, desirable to have additional indicator to show where imports come from.
- Minor forest products, such as coppice products or wood fibre for horticultural, should be included in forest products (near B9 / B10).
- Forest products should include sporting and recreational income (services) not just goods. The value of shooting is many times the value of the game shot.

**Morning****ENVIRONMENTAL A**

Paul Smith	FC Policy & Practice (facilitator)
Dr Colin Barr	CEH Merlewood
Simon Bingham	Environment Agency
Esther Davies	Scottish Executive
Dr Roy Haines-Young	The University of Nottingham
Dr Jim Latham	Countryside Council for Wales
Mark Pritchard	FC National Office for England
Stephen Reynolds	DETR (EPSIM)
Prof Paul Selman	Cheltenham & Gloucester College
Paul Stevens	CEH Bangor

**ENVIRONMENTAL B**

Gordon Patterson	FC Policy & Practice (facilitator)
Nick Collinson	Woodland Trust
Georgina Dobson	Council for the Protection of Rural England
Prof Douglas Godbold	University of Wales
Dr Jane Goodwin	DETR (WACD)
Paul Hill-Tout	FC National Office for England
Bede Howell	Chartered Forestry
Ruth Jenkins	FC National Office for Wales
Keith Kirby	English Nature
Susie Smith	MAFF
Dr Allan Watt	CEH Banchory

**SOCIAL**

Bianca Heggie	FC Policy & Practice (facilitator)
Richard Broadhurst	FC National Office for Scotland
James Cooper	Woodland Trust
Rob Green	Countryside Agency
Rod Leslie	Forest Enterprise England
Liz O'Brien	Forest Research (Alice Holt)
Tim Rollinson	FC Policy & Practice
Marcus Sangster	FC Policy & Practice
Jim Sutherland	Forest Service (Northern Ireland)

**TIMBER/ECONOMIC**

Simon Gillam	FC Policy & Practice (facilitator)
Alan Broughall	Environment Agency
David Jenkins	Coed Cymru
Beatrix Richards	WWF UK
Sara Roberts	Forestry Contracting Association
Steve Smith	Forest Research (Woodland Surveys)
Judith Webb	Timber Growers Association
Andrew Woods	Country Land & Business Association
Rick Worrell	Institute of Chartered Foresters

**Afternoon****ENVIRONMENTAL A**

Paul Smith	FC Policy & Practice (facilitator)
Dr Colin Barr	CEH Merlewood
Simon Bingham	Environment Agency
Esther Davies	Scottish Executive
Dr Jim Latham	Countryside Council for Wales
Rod Leslie	Forest Enterprise England
Stephen Reynolds	DETR (EPSIM)
Beatrix Richards	WWF UK
Paul Stevens	CEH Bangor
Judith Webb	Timber Growers Association
Andrew Woods	Countryside Land & Business Association

**ENVIRONMENTAL B**

Gordon Patterson	FC Policy & Practice (facilitator)
Alan Broughall	Environment Agency
Nick Collinson	Woodland Trust
Prof Douglas Godbold	University of Wales
Dr Jane Goodwin	DETR (WACD)
Bede Howell	Chartered Forestry
David Jenkins	Coed Cymru
Keith Kirby	English Nature
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