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The Development of Meaningful Indicators Of Estuary Management Partnership Success

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Executive Summary.

Introduction.

Estuaries are an essential and integral part of the coastline. In Britain, estuaries cover a total estimated area of 530,000 hectares (HMSO, 1994.) They support a diversity of environmental, social and economic activities and are crucial to the existence of many plant and animal species.

Integrated estuarine management is a long-term process, but Estuary Management Partnerships (EMPs), developed under the 1992 Estuaries Initiative, have only been developing for up to seven years. Many of the 23 EMPs in Britain have only recently entered their implementation stages and there is therefore a critical need to identify the benefits derived from EMPs so that:

- The institutional momentum behind EMPs is maintained and increased.
- The commitment of stakeholders to EMPs is maintained and increased.
- Further investment may be captured to support the development of EMP strategy implementation.

Three challenges were identified in the process of developing meaningful indicators:

- All EMPs are less than ten years old with strategy implementation in their initial stages. The focus was therefore on process indicators rather than outcome indicators.
- Individual EMPs are diverse and unique in their locally orientated strategies.
- Specific benefits and successes are difficult to demonstrate and attribute to the EMP.

The Research Aim.

The aim of this study was to develop process indicators to evaluate EMP success: those that identify a strategy, as well as a process for implementing a strategy, in response to an identified socio-economic or environmental issue.

The following sources were drawn upon in a review prior to formulation of possible indicators:

1. The original objectives published in English Nature's *Campaign For A Living Coast* (1993).
2. The indicators developed in the Estuaries Initiative Review (Jemmett *et al.*, 1999).
3. Coastal and estuarine sustainability indicators.
4. Indicators implicitly put forward by EMP Project Officers in funding bids, strategy documents, etc.
5. Wider literature on international experiences in evaluating ICM initiatives.
6. Parallel experiences from Urban Regeneration Partnerships which date from the late 1970's.
7. Indicators arising from discussions related to this project with Project Officers, relevant authorities, etc.

Indicators were shaped so that they:

- Focused specifically on the infrastructure of the 'partnership.'
- Integrated elements of a changing economic, social and environmental climate.
- Allowed for their adaptation in response to the varying characteristics of estuaries.
- Ensured their applicability to EMPs by employing the MUM criteria test.
- Took into account natural estuarine fluctuations.
- Enabled the accumulation of information over time and space.

Twenty indicators of EMP success were proposed under four categories:

- A. Stakeholder Participation.
- B. Leverage.
- C. Steering Group Participation.
- D. Involvement in Other Strategic Initiatives.

The Indicators were presented in the form of a questionnaire which was sent to 39 Project Officers (POs) and members of Relevant Authorities (RAs). Each respondent was requested to assign values to the indicators with reference to the following MUM criteria:

Meaningful: Is the subject and theme of the indicator meaningful to the evaluation of EMP success? May it be deemed as important and relevant to the various processes of an EMP? **31%***

Useful: Will this indicator be useful and realistic as a tool for actively measuring specific EMP successes? **43%***

Measurable: How easy would this indicator be to measure quantitatively and/or qualitatively? **26%***

* Relative weighting (%) agreed by the POs and RAs attending the indicators workshop in Peterborough.

Results

Table 1. The proposed indicators of EMP success ranked using the total score allocated against each criteria[†].

1) D8: Codes of practice developed through the EMP? (3.95) ↑ 1 [†]
2) A5: Number of consultation responses from those mailed? (3.95) ↓ 1
3) B2: Who are the EMP funders & how long has each been funding? (3.81) ↑ 1
4) D4: How has the EMP facilitated LEAPs? (3.81) ↑ 3
5) C1: Members of the EMP steering group? (3.79) =
6) B1: Amount of EMP core financial support for the year? (3.79) ↓ 3
7) D6: How has the EMP facilitated LBAP processes? (3.72) ↑ 1
8) A6: Is an EMP website up and running? (3.7) ↓ 2
9) C2: Seniority of representation on the EMP steering group? (3.57) =
10) D2: How has the EMP acted as a platform for LDPs? (3.5) ↑ 1
11) D1: How has the EMP facilitated co-operation between LPAs? (3.49) ↑ 2
12) D3: How has the EMP acted as a platform for EMS processes? (3.45) =
13) D7: Industry related initiatives mobilised by the EMP? (3.43) ↑ 1
14) A1: Total number of action groups? (3.3) ↓ 4
15) A4: Number of expressions of interest received from newsletters? (3.26) ↑ 1
16) D5: How has the EMP acted as a platform for SMPs? (3.26) ↑ 1
17) A3: Number of people on the partnership's mailing list? (3.25) ↓ 2
18) A2: Number of consultation workshops and attendance figures? (3.08) =
19) B3: Former EMP funders? (3.05) ↑ 1
20) A7: Contribution by PO to environmental education programmes? (3.03) ↓ 1

[†] Represents the extent to which the rank with criteria weighting deviates from the rank without criteria weighting (some changes are revealed by figures beyond 2 decimal places)

Three key points were gathered from this study and the questionnaire feedback:-

1. The general opinion of the respondents was that indicators D8 and A5 are the most meaningful, useful and measurable for evaluating EMP success.
2. In table 1, indicators are not notably sensitive to the criteria weighting applied. The majority increase or decrease in rank by only 1 or 2 positions when compared to ranking without criteria weighting.
3. The range of scores is quite low: highest 3.95, lowest 3.03, a difference of only 0.92, representing only 23% of the difference available. This reveals that the POs did not consider there to be a great deal of difference between the value of the best and the worst indicators, and that all were of medium (score 3) to high (score 4) value.

The indicators were revised on the basis of the written feedback and workshop discussion as follows:-

A. STAKEHOLDER PARTICIPATION.

1. The total *n* of topic groups that are currently active/ *n* of forum members?
2. The *n* of consultation workshops and their corresponding attendance figures?
3. The *n* of addresses on the partnership's mailing list/s? Comments on target audience?
4. The *n* of expressions of interest received from newsletters *eg.* return card/slip?
5. The % of consultation responses from those mailed?
6. Is an EMP website up and running?
7. The *n* of days spent by the PO providing resources for community education on estuarine management issues?

B. LEVERAGE and LONG TERM FUNDING.

1. The amount of core financial support obtained for the year?
2. What long term funding commitments have been made to the EMP?
3. The length of the Project Officer's contract?
4. The EMP funders and length of time each has been funding?
5. A summary of the former EMP funders and reasons for their support terminating?

C. STEERING GROUP PARTICIPATION.

1. The *n* of representatives on the EMP steering group?
2. Seniority of representation on the EMP steering group?
3. Frequency of steering group meetings and the corresponding level of attendance from members?
4. The degree of representation on the steering group within and between sectors for estuary interest groups?

D. INVOLVEMENT IN OTHER STRATEGIC INITIATIVES.

1. Has the EMP facilitated co-operation between LPAs?
2. Has the EMP acted as an influence, support *or* platform for EMS processes?
3. Has the EMP developed *or* facilitated LA21 strategies?
4. Has the EMP been involved in the development of local sustainability indicators?
5. Depending on Environment Agency policy, has the EMP strategy been integrated with the LEAP?
6. Has the partnership played a part in the wider consultation of SMPs?
7. Has the EMP facilitated the development of LBAP processes? What are the key functions?
8. Industry related initiatives initiated *or* supported *and/or* delivered by the EMP?
9. Has the EMP supported *or* facilitated local regeneration schemes?
10. Has the EMP developed *and/or* maintained relationships with Tourism Development Partnerships?
11. Codes of Practice developed *or* supported/publicised by the EMP?
12. Time spent by the PO lobbying *and/or* responding to regional, national and international issues and estuary related initiatives?

The following general conclusions were also drawn:-

1. The need to introduce a mechanism, allowing indicators to be tailored to unique and diverse EMP objectives was identified in discussion with workshop attendees. Many of the indicators have been phrased again so that varying levels of PO participation are considered. A 'Not Applicable' option has also been included for each indicator.
2. The rolling evaluation of indicators is considered beneficial to each EMP; including indicator performance assessment annually through periodic review. Each of the proposed and revised indicators are mutually compatible with this approach.
3. Such evaluation is also likely to be beneficial for EMPs at a wider level by promoting the development and demonstration of 'good practice'.
4. It is suggested that indicators of EMP success could be adapted as standard headings in an EMP reporting format.

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Section 1

Introduction

1.1 Background To Estuaries

Estuaries are an essential and integral part of the coastline. They support a diversity of environmental, social and economic activities such as recreation, commercial navigation, commercial fisheries and effluent disposal. Davidson *et al.* (1991) define an estuary as:

‘ a partially enclosed area at least partly composed of soft tidal shores, open to saline water from the sea, and receiving fresh water from rivers, land run-off or seepage. ’

With a total area of 530,000 hectares throughout Britain, (HMSO, 1994) estuaries support highly productive habitats such as mudflats and saltmarshes, which are considered to be amongst the most important areas for supporting wildlife in England. Geographical positioning means that the UK is a meeting point on several flyways used by migratory waterfowl. These migrants flock to the UK’s estuaries in search of feeding and resting grounds during the winter season. Due to the mild Atlantic influence, the UK shores are warmer and therefore more attractive to over-wintering waterfowl than other European countries.

Diverse aquatic and terrestrial estuarine habitats are an ideal environment for many other species. The fine sediments of intertidal flats are home to a high density of invertebrates. The coastal grazing marshes support a range of plants, invertebrates and mammals, while the aquatic environment itself is an important feeding, breeding and nursery ground to a great number of fish populations.

Estuaries are not only crucial to the existence of numerous plants and animals, but support an English population of 16 million people (EN, 1992) and are important centres for trade, transport, industry and urban development.

In short, the estuaries of the UK are, like those around the world, recognised as being of particular importance from a number of perspectives:-

- ideal open areas for people to live, work and recreate;
- required locations for a range of economically important developments and activities;
- natural sea defence value of estuarine habitats;
- agricultural value of coastal and estuarine hinterlands;
- biodiversity conservation value of coastal and estuarine habitats and species;
- ecological functional value of wetland and shallow water ecosystems;
- intrinsic appeal value of many estuarine landscapes, habitats and species.

It is also becoming increasingly recognised that estuaries are subject to a wide and increasing intensity and diversity of pressures due to the:-

- large proportion of growing human population which lives, works and recreates on estuaries;
- associated impacts from developments, extractive activities, disturbance, waste disposal, etc;
- the particularly dynamic nature of physical, biological and human systems in these environments;
- vulnerability to sea level rise and changing weather patterns resulting from global warming;
- the tendency for estuarine areas to be subject to multiple uses which are not spatially separated;
- potential for competing uses to adversely impact each other;
- potential for overall environmental degradation due to cumulative impacts.

The dynamics of the pressures on estuarine areas and the potential for long-term impacts means that there is a worrying potential for positive feedbacks which could damage the ability of these areas to directly and indirectly provide for the human race’s material and non-material quality of life. The importance of adopting an integrated approach to estuarine management which proactively takes account of long-term issues is therefore becoming increasingly recognised.

1.2 The Formation Of English Nature's Estuaries Initiative

In October of 1992, English Nature launched their *Campaign for a Living Coast*. The Estuaries Initiative formed one part of this campaign in the same year. The ultimate aim was to:

'achieve a widely shared understanding of the value of England's estuaries and of the need for sustainable management.'

By increasing awareness and enhancing levels of concern about estuaries, the Estuaries Initiative aims to integrate the management of leisure, industry, agriculture, water and conservation within their catchment. Grabrovaz (1995), identified 27 management plans within 32 estuaries in England; an indication as to the impact of this initiative.

1.3 Estuary Management Partnerships

EMPs were also established in 1992 under the English Nature's Estuaries Initiative and later adopted as one of the steps in the UK Biodiversity Action Plan (HMSO 1994). In the first guidance note to Local Biodiversity Action Plans (UKLIAG, 1996), the functions of LBAPs were introduced:

- *'To ensure that national targets for species and habitats, as specified in the UK Action Plan, are translated into effective action at the local level.*
- *To identify targets for species and habitats appropriate to the local area, and reflecting the values of people locally.*
- *To develop effective local partnerships to ensure that programmes for biodiversity conservation are maintained in the long term.*
- *To raise awareness of the need for biodiversity conservation in the local context.*
- *To ensure that opportunities for conservation and enhancement of the whole biodiversity resource are fully considered.*
- *To provide a basis for monitoring progress in biodiversity conservation, at both local and national levels.'*

The importance of an effective partnership was discussed in great detail. The basic shared agenda for a LBAP; to conserve and enhance the biodiversity of an area, was described as achievable if an agreement between parties involved a shared plan. In doing so, the joint ownership of a plan would encourage a feeling of commitment within the community.

EMPs have been successful in their development with all but two of the 23 partnerships throughout Britain evolving voluntarily; Chichester Harbour and Poole Harbour being the exceptions. As well as biodiversity conservation objectives, EMPs include other strategic development initiatives relating to activities such as recreation and economic development.

With some degree of locally orientated adaptation, the general organisational structure for each EMP remains the same. The shared principles can be summarised as follows:

- A management group prepares and follows the implementation of a management plan.
- The management group allocates tasks to specific topic groups.
- An estuary forum is convened to increase local awareness and participation.
- An EMP Project Officer (PO) is given responsibility for coordinating the formulation and implementation of a management strategy through partnership building.

There is, however, no defined or agreed means of evaluating the success of EMPs. In an ideal situation, indicators should be incorporated during the early stages of management implementation but this has not been the case for existing projects. It is therefore worth turning to wider ICM experiences for more guidance.

1.4 Background To Integrated Coastal Management

For the purpose of this report, ICM will be defined with reference to Olsen^(a) *et al.* (1997), as:

'a continuous and dynamic process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of the coastal ecosystem and resources.'

ICM has often been thought of as a vehicle for progression towards sustainable development with the ultimate goal of improving the quality of human life while maintaining biological diversity and coastal ecosystem productivity. This was certainly the ultimate intention of the Earth Summit in Rio de Janeiro, held in June 1992. Local authorities were encouraged to adopt their own sustainable development strategy, termed Local Agenda 21, and specific guidance has been accordingly produced to promote the sustainable development of coastal resources on a partnership basis in the UK (LGMB 1995).

The concept of ICM was elevated to mainstream political thought in the UK in 1992 following the publication of the *House of Commons Select Committee Report on Coastal Zone Protection and Planning* (HMSO 1992). Discussion focused strongly on the lack of co-operation and co-ordination between a host of bodies governing coastal protection, planning and management. Edwards *et al.* (1997) make reference to the Committee's report in their review of coastal zone management (CZM) and refer to an unearthing of;

'inadequacies in legislation, anomalies in the planning system, a lack of central guidance, and overlapping and conflicting policies and responsibilities among a host of bodies, with poor co-ordination between them.'

Prior to 1992, both participation and interaction between the organisations and agencies responsible for CZM were seen as clearly absent from both regional and local coastal action plans within the UK. Action began in 1992 with government initiatives aiming to rectify the problem of, in particular, a lack of central guidance.

Although there are 140 ICM efforts in 56 coastal nations, keeping to the aspiring goals of ICM (Olsen^(a) *et al.*, 1997), there are still no current or harmonised indicators for evaluating the progress and success of ICM projects.

However, it is apparent that the concept of ICM has attracted more attention to research on indicators and moreover, sustainable indicators, than EMPs have. As an integral part of coastlines, the potential for EMP indicators of success may be greatly influenced and guided by the lessons learnt from and discussed for ICM.

1.5 Measuring ICM Success

An indicator is defined by Taal *et al.* (1998) as:

'a parameter or a value derived from parameters, which points to, provides information about or describes the state of a phenomenon/ environment/ area.'

By context, indicators may also be described as qualitative or quantitative variables used to assess the type and rate of change observed in the environment. Burbridge (1997), refers more specifically to management in his definition of indicators:

'as features which characterise well defined and designed management programmes.'

Although there are no current or consistent indicators for Europe as a whole, their potential value has been acknowledged. For example, the European Environmental State Indicators report (EEA/SEPA, 1997) expressed the importance of indicators and gave reasons for their use on a European level:

1. to install understanding;
2. to initiate opportunities for action;
3. to elucidate trans-boundary problems;
4. to compare progress between nations;
5. to evaluate local area initiatives and
6. to produce European solutions for common European problems.

A common set of indicators is still required for European coasts and ICM practice. They are essential to the process of successful evaluation by promoting learning and addressing success for each step of the policy cycle.

Reports of ICM indicators operating on a local/regional scale within some industrialised countries frequently discuss one framework in particular; the *'pressure-state-response'* (PSR) framework.

Guided by the OECD (1994) framework, three ICM indicators have been defined:

1. **Pressure Indicators:** describe stresses inflicted by human activities and imposed on the coastal zone environment.
2. **State Indicators:** describe the condition of the environment - be it chemical, geo-physical or biological. Natural resources are expressed in both a quantitative and qualitative manner.
3. **Response Indicators:** record the choice of a policy as a response to an environmental problem.

The *'pressure-state-impact-response'* (PSIR) Framework (Turner *et al.*, 1998) identifies two additional parameters:

1. **Driving Forces:** evaluate human and economic activities responsible for the pressures exerted on natural resources.
2. **Pressure Indicators.**
3. **State Indicators.**
4. **Impact Indicators:** assess the effects made upon the health of the human population and ecosystems.
5. **Response Indicators.**

It is with reference to these frameworks, ICM experiences and the subsequent discussion on indicators, that indicators of the success of Estuary Management Partnerships are further considered and discussed. The level of potential accuracy offered by such frameworks is considered and explored in more detail.

Section 2

Research Aim

2.1 The Objective

For the purpose of this study, particular emphasis is placed on *response* indicators: those that identify a strategy and, importantly, a process for developing and implementing EMP strategies, in response to an identified socio-economic or environmental problem. It has been argued that ICM initiatives are often driven by outcomes which are based on a positivist and top-down analysis of best solutions, at the expense of efforts focused on developing appropriate processes which reflects the roles and provides for the participation of stakeholders, and that more emphasis should be placed on developing best processes as a means of achieving commonly desired and socially sustainable outcomes (Davos *et al.* 1997). The emphasis of this project on response or process indicators is supported by this argument.

The following sources are drawn upon:-

1. The original objectives published in English Nature's *Campaign For A Living Coast* (1992).
2. The indicators developed in the Estuaries Initiative Review (EIR) (Jemmett *et al.*, 1999).
3. Coastal and estuarine sustainability indicators.
4. Indicators implicitly put forward by POs in funding bids, strategy documents etc.
5. Wider literature on international experiences in evaluating ICM initiatives.
6. Parallel experiences from Urban Regeneration Partnerships (URPs) which date from the late 1970's.
7. Indicators put forward during discussions related to this project with POs, relevant authorities (RAs) etc.

When formulating appropriate indicators, it is important to:

- Focus specifically on the infrastructure of the 'partnership.'
- Integrate elements of a changing economic, social and environmental climate.
- Allow for their adaptation in response to varying characteristics of estuaries.
- Ensure their applicability to EMPs by employing the MUM criteria test.
- Take account of natural estuarine fluctuations.
- Enable the accumulation of information over time and space.

2.2 The Challenges Imposed

There are three predominant challenges identified in developing indicators of the success of EMPs in Britain:

- Integrated estuarine management is essentially a long-term process. As a result, many outputs only feature after a number of decades. Throughout the UK, EMPs have reached differing stages in their planning, consultation and implementation processes. Under the Estuaries Initiative, partnership's have been in development for any time up to seven years and are only now reaching their crucial implementation stage. Indicators of success need to therefore to focus particularly on policy process responses to management, rather than solely outputs. Even if an EMP has reached the stage of producing outputs, response indicators do not fail in their value as measures of progressive success.
- Many of the potential EMP benefits are intangible and difficult to demonstrate objectively. Even where such benefits are demonstrable, it may be difficult to attribute them specifically to the EMP.

- The pressures imposed on every estuary vary *eg* degree of resource extraction and industrial development, the biological and geographical landscape, the climate and human population. The objectives for each EMP fluctuate dramatically depending upon locally identified needs. If a universal set of indicators are to be proposed then this is an important consideration.

2.3 MUM Criteria

A provisional list of indicators, intended for measuring the success or otherwise of EMPs, will be developed following discussion. These will be subjected to an adapted criteria test, referred to as *MUM*:-

- **Meaningful:** is the subject and theme of the indicator meaningful to the evaluation of EMP success? May it be deemed as important and relevant to the various processes of an EMP?
- **Useful:** will this indicator be useful and realistic as a tool for actively measuring specific EMP successes?
- **Measurable:** in practice, how easy would this indicator be to measure quantitatively and/or qualitatively?

A further key test is whether the benefits revealed by such indicators are attributable to EMP initiatives. The value of these potential indicators against the MUM criteria was assessed qualitatively and/or quantitatively by seeking input by EMP Project Officers and members of relevant authorities. These practitioners were asked to comment on whether the benefits of their initiative could be demonstrated by employing such criteria.

Section 3

Review, Analysis, Collation And Integration Of Sources

3.1 The Original Objectives For *Campaign For A Living Coast*

Following concern for the predicted loss of 10,000 ha of England's intertidal area over a period of twenty years (English Nature, 1992), a list of immediate objectives for nature conservation on English estuaries were established:

- *To retain that part of the natural resource which is irreplaceable, or which will prove too difficult or expensive to replace.*
- *To retain the diversity and character of different natural areas.*
- *To offset any losses that are unavoidable by ensuring compensatory gains elsewhere.*
- *To establish and maintain viable populations of rare and vulnerable species and improve their status wherever possible.*
- *To meet international responsibilities and obligations for nature conservation.*

For the purposes of this project, it is important to note that these objectives are essentially outputs from EMPs and related nature conservation initiatives that will only be measurable in the longer term.

3.2 Indicators Developed In The EIR

Jemmett *et al.* (1999) produced the Estuaries Initiative Review (EIR), the objectives of which were to:

- *Review and demonstrate the effectiveness of the current arrangements for ensuring the sustainable use of England's estuaries.*
- *Make clear recommendations on the way forward for estuary management in England, including how to secure the necessary ownership, commitment and funding.*

Emphasis was applied to the long-term sustainable development of the English estuaries co-operating with the existing framework of Local Environment Agency Plans (LEAPs) and coastal management plans throughout England.

The following core functions of estuary management were identified and to this end, will be developed for the purpose of the project:

Core function 1: to influence the statutory planning system and the regulation of activities below low water.

Core function 2: to promote a common understanding of the objectives, beliefs and activities of the organisations reliant upon estuarine resources.

Core function 3: to inform decision-makers about the status of the estuary and what progress is being made/needs to be made towards sustainable development.

Core function 4: to act as a mechanism for agreeing the short, medium and long term priorities for an estuary.

Core function 5: to help prevent conflict by providing a balanced framework for resource allocation, objective setting and decision-making.

Core function 6: to be aware of the initiatives and plans of others and to communicate their implications to those organisations who are reliant on the estuary.

In addition to this, key outputs and indicators of estuary management were identified:

A. Awareness raising (of economic, social and environmental issues or estuaries).

- Communication materials produced by EMPs.
- Awareness raising events.
- Communication of the values, legislation (constraints), operations and beliefs of the organisations reliant upon estuarine resources.

B. Conflict prevention.

- Examples of conflict prevention and resolution that can be directly attributed to the estuary management process.

C. Assisting the plans and initiatives of others.

- Assisting and providing a mechanism to influence other plans and initiatives eg LEAPs, Shoreline Management Plans, Special Area of Conservation.
- Identifying and communicating the potential for integration and conflict between plans and initiatives on estuaries.

D. Financial.

- Identifying funding needs and mechanisms.

E. Partnerships.

- Involvement of stakeholders.
- Level of commitment of stakeholders to the process.
- Forms of endorsement.

Environmental awareness, integration and nature conservation are common themes throughout these objectives. It is the responsibility of an EMP to embrace all environmental, social and economic sectors and to encourage industries to invest and work together towards a mutual goal of sustainability.

Of subsequent importance to the funding partners, is the delivery of goods and value for their money invested in the partnership. Two key questions are currently unanswered and are key foci for this project:

- What do the investing organisation gain from being an integral part of the partnership?
- How may partnership deliverables be measured quantitatively or qualitatively?

The commitment of agencies/stakeholders to a partnership may be indicated by (1) leverage, (2) their contribution to the management group and (3) their active role in mobilising strategic estuary initiatives.

Partnerships however, require meaningful, useful and measurable evaluation. Indicators of agency/stakeholder participation may expedite this process to some extent, but do not fully assess the strengths and weaknesses of all partnerships. Nor are they specific output indicators (eg biodiversity conservation), purely because there is no accurate way of directly attributing their success to an EMP and it is often too early in the process for such outputs to be realised.

3.3 Coastal And Estuarine Sustainability Indicators

The Atlantic Living Coastlines Report Group recently produced '*Indicators for Sustainable Development on the Coast*,' for Devon and Cornwall (Atlantic Living Coastlines, 1999.) The PSR framework was used in the identification of pressure, state and response indicators. Their role was then considered in relation to ICM initiatives. 150 indicators were amassed under the following headlines:

1. *Biodiversity.*
2. *Water quality/marine and coastal pollution.*
3. *Coastal Processes and defence.*
4. *Historic and cultural environment.*
5. *Economic development/ resource use and efficiency.*
6. *Tourism/recreation.*
7. *Fisheries.*
8. *Awareness and participation in decision making.*
9. *Communication and information transfer*
10. *Quality of life in the coastal zone.*

When evaluating a given location, such as Devon and Cornwall, the habitats' microclimate and flora and fauna are all known entities. This is one of the luxuries of defining locally orientated sustainability indicators. Assuming that a base line is recorded, the highs and lows of environmental, social and economic variation may be assessed.

There are nevertheless questions as to the feasibility of these indicators. For example, under the heading, '*Historic Environment*', features:

'the number of documented maritime archaeological sites'.

This is a useful indicator if translated into a baseline from which to monitor progress. It is not however a clear indication alone of progress towards achieving a strategy for sustainable development, as both an increase in documented and damaged sites could occur.

The headline, '*quality of life*,' also appears to be fairly weak in comparison to what are in general, an easily quantifiable list. An indicator will only ever be as good as it's interpretation. Standards for an expected quality of life may change and so with it does the resulting interpretation.

This is not the only challenge imposed by locally orientated sustainability indicators. For example, under the heading '*biodiversity*,' the number of a particular species may be requested. This provokes the following question:

- If the population of one named species increases, should this necessarily imply general wildlife gain? The growth of one named population may lead to the demise of another in the same habitat. While identifying one species in need of protection the potential needs of another may be compromised - one crucial consideration if biological diversity is desired.

There are clear advantages to the implementation of local sustainability indicators. If they are consistent between regions then their comparability is a strong political tool. Nevertheless, this is one parameter that is dependent upon the agreement on a common language and appropriate spatial scale.

Partnerships occur throughout an array of socio-economic and environmental contexts. Designing relevant headline and detailed indicators for each individual partnership is not only a time consuming task but one that would allow little comparability between partnerships. It is more effective to design of a set of universal indicators applicable to an aggregate of partnerships. In a similar way to sustainability indicators,

comparability would become a strong political tool. The attributes of one partnership may influence the learning curve of another and so the experience of individuals is conveyed for an umbrella of partnerships.

3.4 Indicators Implicitly Put Forward by EMP Project Officers

Potential indicators of success have been inferred by EMP Project Officers (POs), in bids for funds from English Nature allocated for 1999/2000. The POs recorded key achievements for (1) wider estuarine management, (2) specific wildlife gain and (3) leverage. These steps are difficult to quantify numerically but have the potential for collation and refinement as tangible qualitative indicators.

A summary of the indicators implicitly put forward by POs are discussed as follows under headings used in the bid for funding:

3.4.1 Key achievements for wider estuarine management

Recorded under wider estuarine management was the improved co-ordination between partners and Relevant Authorities (RAs) and raising public awareness; involving both the wider unorganised community in events and the co-operation of estuary partners in management. The availability of information to the public by, for example, Internet, public display boards and leaflet dispensers, was also an indication of success. Management plans for European Marine Sites (EMS) and more specific habitat and wildlife nature conservation projects were also deemed a progressive step in the management plan.

3.4.2 Key achievements in wildlife gain

POs have produced progress reports, assisted in local workshops and seminars, given regional planning guidance, contributed to Local Biodiversity Action Plans (LBAPs), investigated the status of plant and animal populations; all relating to the promotion of national and local biodiversity objectives. More specific to each estuary are local plans for conserving particular areas of coastline, habitats and species. For example, the Fowey Estuary Partnership mentions the implementation of a proposed Voluntary Marine and Coastal Conservation Area (VMCCA).

3.4.3 Leverage

A description of core partnership funding was a prerequisite in the application for funds. A list of contributing partners, with the specifics of their individual support, were given by each PO.

Records of success, written descriptively by each officer may not always be easily measured quantitatively. Instead, results may be translated to form tangible qualitative indicators. For example, it may be easy to quantify the number of partners and their degree of support towards an EMP. It is, however, harder to quantify a marked increase in co-ordination between those partners as an outcome of the EMP. One possible way of interpreting this form of success, is to encourage correspondence through letter writing. Letters sent acknowledging mutual co-operation between partners may provide a potentially powerful indicator for EMP success.

3.5 International Experiences In Evaluating ICM Initiatives

Many of the authored international experiences on ICM compliment research on EMPs and relate to the discussion on indicators.

As aforementioned, the PSR framework is the most universal system for measuring ICM indicators. The process is based upon a cycle of lessons continuously learnt from the experience of management implementation. This can frequently lead to changes in the style of management as the project progresses with a shift towards community-based planning. The amount and level of public participation can subsequently manifest itself as an indicator in it's own right.

Indicators, are however meaningless without an established baseline from which progress can be evaluated. The level of ICM success, for example, is insignificant without information on the local coastline's environmental, social and economic context. Given this background, progress may then be both quantitatively and qualitatively measured and compared to the original conditions recorded at the start of the project.

ICM development objectives can also be divided into environmental, social and economic categories in a way that assists the learning process; a theory supported by Burbidge (1997).

Although indicators have not been standardised for ICM, elements that help indicate their success may elucidate discussion and the final decision on a set of meaningful indicators for EMPs. For example, Pernetta *et al.* (1993) identify basic elements effective in recognising valid indicators:

- *Policies and Goals.*
- *Plans, Activities and Projects.*
- *Institutional Arrangements.*
- *Legislation.*
- *Training.*
- *An Implementation Plan.*
- *Public Education.*
- *Monitoring and Enforcement.*

Such non-specific elements provide only the provisional structure to further develop ideas on indicators.

Burbidge (1997) reviews a generic framework for assessing success in relation to specific ICM objectives. By way of illustrating this framework, one such objective may be reviewed: to obtain the sustainable use of renewable resources. For this example, the aims would be to;

- achieve minor degradation in environmental quality.
- maintain minimal loss of economic options.
- equitably distribute benefits to local communities.

These three components are certainly not independent of one another but are, nevertheless, not easily inter-related either. The easiest way to account for the inter-relationships is through trade-offs; between environment, economy and equity. For example, large uncontrolled development will cause severe damage to the natural coastal ecosystems. As a result, major social and economic trade-offs will be made with little attention to ICM. A perfect model however, would avoid detrimental environmental impacts, encourage the wise use of renewable resources, while also promoting equitable economic development. In principle this three tier model may be adapted in innovating indicators for EMP success; the environment, economy and equity each being essential elements. Indicators which focus almost solely on one of these three stands of sustainable development cannot correctly be considered to be indicators of sustainable development.

Colt (1994) identifies simple quantitative output indicators for ICM. By reviewing certain data, such as water quality (monitoring for toxic, nutrient and pathogen contamination), a simple and clear indication of the coastal and estuarine environment is established. An EMP facilitates estuary management by co-ordinating relevant authorities and partners. An estuary's environmental quality can not therefore be directly related to the work of the partnership, as the quality could have been attained without partnership through intra-sectoral initiatives. This is another reason why specific environmental indicators would therefore be of relatively limited value if adopted as sole indicators of EMP success.

Specialist monitoring methods also consume resources and rarely provide a fast return on the investment. One essential requirement of EMP indicators is that they need to be completed in a relatively short time by the Project Officer.

Olsen ^(a) *et al.* (1997) identify a potential problem in small scale localised management. Small projects may be seen to protect themselves from unfavourable assessment by adhering to one of the following:

- Adopting vague goals and targets.
- Choosing objectives that cannot be measured.
- Selecting indicators that identify effort rather than outputs.
- Maintaining original objectives, ignoring change and a need for adaptation.

In a similar way, goals, targets and plans are all essential to a Partnership seeking success: allowing natural and progressive self-evaluation. However, these targets must be both practical and ambitious if either an ICM initiative or EMP is to learn from the processes of implementation.

3.6 Parallel Experiences From Urban Regeneration Partnerships (URPs)

The Department of the Environment, Transport and the Regions (DETR) have produced a report on the *Local Evaluation for Regeneration Partnerships* (DETR, 2000). The published guidelines may also be considered applicable to the discussion on EMP evaluation.

In the same way that the characteristics and objectives of estuary management plans vary, each regeneration scheme is unique in its circumstances, aims and activities. Nevertheless there are generic techniques and principles important to the shaping of an evaluation plan and these are applicable to all local regeneration partnerships. The DETR states that these partnerships should:

'start to develop an evaluation plan at an early stage, so that it is built into their structures and processes'

This objective may also be applied to EMPs.

Aforementioned in the discussion, is reference to the need for an established baseline from which to measure success. If the decision to use indicators is made at the early stages of a project plan, then progress can be monitored from a baseline.

The main purposes of evaluating a local regeneration scheme have been summarised as follows:

- *to assess its impacts on the problem being addressed;*
- *to suggest ways of managing the scheme more effectively;*
- *to identify good practice for wider dissemination and*
- *to report back accurately to partners, local people, and the Government Offices/Regional Development Agencies on the scheme's achievements.*

These are all reasons which can be adapted to an EMP framework. Reporting to various partners on the ongoing success of a partnership is of particular importance to this report. A summary of achievements holds the potential to be a tool for not only obtaining further support and financial gain but sustaining the interest and concern of present partners and funders, *ie* a deliverable promoting the value of their support.

In a different way to EMPs, regeneration partnerships have reached a developmental stage where both outputs and outcomes are being measured. Differentiation between the two is subtle but overcomes the frequently recognised problem that a socio-economic condition may not always be influenced by a local regeneration scheme. Once again, attributing gain is not easily accomplished.

An output is defined as *'the apparent direct result of scheme activity eg. jobs created.'* An outcome on the other hand is defined as *'the change in socio-economic or physical conditions in the target area which are due to the scheme'* (DETR, 2000).

The outcome is one step further from the output in this evaluation process. Comparatively, the development of indicators for EMP success requires emphasis on one step prior to an output - the response. The future assessment of EMPs would however benefit from the advanced experience gathered by regeneration partnerships.

In developing indicators of EMP success, it is necessary to know exactly when to evaluate. Local regeneration partnerships are advised to carry out three steps in collaboration:-

- Final evaluation;
- Interim evaluation;
- Rolling evaluation.

Those which may be currently translated to EMPs are interim and rolling evaluation processes. Interim evaluation is employed to improve partnership performance through a board of executive teams and project delivery agencies. Rolling evaluation assesses performance through key indicators and periodic review - directly linked to the continuation of funding. Highlighting the importance of this mechanism is essential to the effective proposal of EMP indicators.

Section 4

Defining Meaningful Indicators Of Success

4.1 Methods

A draft set of indicators, developed to demonstrate the benefits and effectiveness of Estuary Management Partnerships, was developed after review of existing sources.

The indicators were presented in a questionnaire which was divided into 5 parts.

4.1.1 **Section 1:** Information on Project Officer name and Estuary Catchment.

4.1.2 **Section 2:** A Simple Evaluation of Different Pressures on the Estuary.

4.1.3 **Section 3:** The Proposed Indicators.

- A. Stakeholder Participation.
- B. Leverage.
- C. Steering Group Participation.
- D. Involvement In Other Strategic Initiatives.

4.1.4 **Section 4:** The Project Management Table.

4.1.5 **Section 5:** Time Spent by the Project Officer Involved in Strategies.

The questionnaire was mailed to thirty nine people (recorded in Appendix 1) and a request for their personal feedback was made. The indicators have been modified slightly in places in order to make them clear.

4.1.1 Section 1

Name & Position:

Name of Estuary:

Total Estimated Area of Estuary Catchment (ha):

Duration of EMP:

Total Estimated Human Population in Catchment:

4.1.2 Section 2: A Simple Evaluation of Different Pressures on the Estuary

	Level 1: Low significance. < 30%	Level 2: Medium significance 31% - 60%	Level 3: High significance. > 60%
1. Economic Development: e.g. Industrial, Commercial, Agricultural.			
2. Tourism & Recreation: e.g. Water sports.			
3. Environmental: e.g. Pollution control/Environmental improvements.			
4. Conservation: e.g. Area subject to conservation designations.			
5. Urban: e.g. Roads, Housing.			

Please could you put a cross in the box that is most applicable.

4.1.3 Section 3: Proposed Indicators

Each person was asked to assign a value to each of the indicators with reference to the criteria:

- **Meaningful:** Is the subject and theme of the indicator meaningful to the evaluation of EMP success? May it be deemed as important and relevant to the various processes of an EMP?
- **Useful:** Will this indicator be useful and realistic as a tool for actively measuring specific EMP successes?
- **Measurable:** In practice, how easy would this indicator be to measure quantitatively and/or qualitatively?

Values were allocated on a scale of 1-5 whereby 1 = very low and 5 = very high.

A. STAKEHOLDER PARTICIPATION

1. The total number of topic groups that are active?

Action groups facilitate the involvement of the wider community in the partnership. The number of these groups, if any, indicates the scope of concern and interest in the estuary management plan. A qualitative list of the represented groups would indicate success of the partnership in motivating the participation of stakeholders.

2. The number of consultation workshops and attendance figures?

Creating opportunities for wider unorganised community participation in the form of workshops is important to an EMP. The number of consultation workshops in the last year and level of attendance provides a good indication of time spent by the PO.

3. The number of people on the partnership's mailing list/s?

A successful awareness raising campaign may be numerically quantified by counting the number of people on the EMP mailing list/s. The response to this indicator would be considered relative to the total human population within the estuary catchment.

4. The number of expressions of interest received from the newsletters?

In response to newsletters and other forms of EMP publicity, interest from the wider public may be expressed.

5. The number of consultation responses from those mailed?

Communication is the key to the smooth operation of an EMP. Both negative and positive feedback indicates interest and co-operation from the various stakeholders involved. Of equal importance are responses from the community and larger organisations, helping to shape the management plan in its early stages.

6. The number of days spent by the PO on environmental education programmes?

The level of PO participation in all areas of environmental education may be indicative of EMP success. The meaning of this indicator varies between estuaries where the objectives set out in a management plan vary with the duties of the PO. The number of programmes, events and the level of active participation etc. may be recorded per annum as an indicator.

B. LEVERAGE

1. The amount of financial support obtained for the year?

Financial stability suggests a strong EMP infrastructure. The ability to engage fund-raising expertise within a competitive market is indicative of an EMP's subsequent raised profile and high level of achievement.

2. Who are the EMP funders and how has each been funding?

The larger the number of funders which are attracted to an EMP, the greater will be the potential appeal to other funders. Strong support to some extent indicates EMP loyalty, their commitment to the partners and the delivery of defined objectives. A qualitative list of funding bodies would be submitted with the length of time that each has committed their support.

3. The former EMP funders?

Are there any former EMP funders who no longer support the partnership? A qualitative list would be submitted with details of when their support terminated.

C. STEERING GROUP PARTICIPATION.

1. Members on the EMP steering group?

A simple list of members on the steering group, including RAs, commercial organisations and stakeholder representatives would be submitted.

2. Seniority of representation on the EMP steering group?

The seniority of members on the EMP steering group is a good indication of institutional commitment and support to EM projects. It is generally recognised that more successful projects attract more senior representation. A qualitative list of key people would be an important submission.

D. INVOLVEMENT IN OTHER STRATEGIC INITIATIVES.

An EMP may be involved in strategic initiatives through the following approaches:

- By providing a platform for wider deliberations and the integration of ideas from members of the partnership.
- By providing support for taking such initiatives forward.
- By facilitating cross-party dialogue to advance individual strategic initiatives.
- By incorporating EMP principles and objectives into strategic initiatives.

1. How has the EMP facilitated co-operation between LPAs?

Communication and co-operation between Local Planning Authorities are essential in partnerships. Correspondence between LPAs develops a much wider management unit and encourages thought to relevant subtidal and marine resource issues. Such benefits may be made tangible as qualitative indicators if letters, acknowledging progress, are written by LPAs to the EMP.

2. How has the EMP acted as a platform for LDPs?

The PO may help facilitate the development of Local Development Plans (LDPs). What reference to the EMP is made by the LDP? This indicator would be qualitatively recorded with the use of relevant reports and supporting documentation.

3. How has the EMP acted as a platform for EMS processes?

European Marine Sites (EMS), managed as a statutory duty of RAs, may benefit when an EMP becomes a framework management or advisory group. Although this indicator is not numerically quantifiable, the

facilitation and time spent by a PO on these procedures may be recorded and kept in a project management matrix. This would be a useful tool for calculating how time is engaged. The degree of time spent on specific initiatives would naturally fluctuate with the priorities of the partnership and the degree of EMS management initiatives for a given period.

4. How far have EMP strategies been incorporated in the LEAP?

Relevant contributions by the EMP, to Local Environment Action Plans (LEAPs), should be recorded as an indicator. This would be important in demonstrating one aspect of an effective EMP. Efforts made to achieve mutually compatible plans, relevant to the locally orientated targets, may be expressed in stages *eg.* draft planning, consultation and implementation, to name a few. These would be recorded by the PO in a project management matrix with dates showing stages achieved.

5. Has the partnership played a part in the wider consultation of SMPs?

The estuary PO may have developed links integrating EMPs with Shoreline Management Plans (SMPs). Although this may not be applicable for all partnerships, it is an indication of effective cross consultation and co-ordination where it is fitting. There must therefore be an opportunity to express this in a project management matrix. In a similar way to the previous indicator, locally relevant levels of achievement may be submitted with the time each is accomplished.

6. How has the EMP facilitated LBAP processes?

How has the EMP contributed to Local Biodiversity Action Plan processes? Have relevant initiatives been taken forward with the EMP acting as a platform? A qualitative record, of stages and levels of progress, may be kept in the project management matrix.

7. Industry related initiatives mobilised by the EMP?

Present and potential partnership investors require incentives and benefits for their contribution to be worth their while. Does an industry forum exist and have initiatives been shaped for, *eg.* waste minimisation projects? Progress made through initiatives and the various stages of accomplishment may be recorded qualitatively in the aforementioned project management matrix.

8. Codes of Practice developed through the EMP?

As a result of EMP facilitation, relevant codes of practice may result. A code applying to estuary boat users, is just one example. A list of these codes of practice, and the time each has been achieved, would be a valuable indicator of an effective EMP.

4.1.4 Project Management Table

Please could you complete this table with the details of various initiative achievements, as far as is practicably possible.

1. LDP Initiative/s:	
2. EMS Initiative/s:	
3. LEAP Initiative/s:	
4. SMP Initiative/s:	
5. LBAP Initiative/s:	
6. Industry related Initiative/s:	

4.1.5 Section 5: Time Spent by the Project Officer Involved in Strategies

With reference to the few example activities given below, the POs were asked to complete a pie chart drafting their approximate time spent on various tasks. The addition of other activities specific to their schedule were also requested.

- Time spent in discussion with **existing** estuary partners.
- Time spent dealing with **potential** partners and funders.
- Time spent involved in localised management plans relating specifically to biodiversity.
- Time spent involved in localised management plans relating specifically to other initiatives.
- Time spent dedicated to education and the development of public awareness.

Section 5

Results Presentation and Discussion

The feedback received from Project Officers and members of Relevant Authorities have been collated. Data are analysed using both qualitative and quantitative techniques. The results are then discussed under the six following headings:

5.1 Levels of Response and Degree of Estuary Representation.

5.2 Simple Analysis of Values Assigned to Each Indicator.

5.2.1 The Analysis of Rank Without Criteria Weighting.

5.2.2 Related Discussion with POs, Relevant Authorities (RAs) etc.

5.3 Analysis of Rank With Criteria Weighting.

5.4 Analysis of Rank, With Criteria Weighting, Within Categories.

5.5 Comparison of the Values Given to Each Category of Indicators.

5.6 Analysis of Time Spent by Different POs.

5.1 Levels of Response and Degree of Estuary Representation

Table 1. A Summary of Feedback Received.

• The total <i>n</i> of questionnaires mailed	39	
• The total <i>n</i> of responses received.	16	(41%)
• The total <i>n</i> of estuaries represented through feedback	20	
• The % of those estuaries classified as urban ^a .	35%	
• The % of those estuaries classified as mixed ^b .	30%	
• The % of those estuaries classified as rural ^c	35%	

^a **Urban:** Land use dominated by housing, industry and economic development, supporting a large human population to catchment area.

^b **Mixed:** Land use apportioned to development and countryside, supporting a moderately sized human population to catchment area.

^c **Rural:** Land use dominated by countryside and farming practice, supporting a small human population to catchment area.

41% of individuals, who were sent the questionnaire on proposed indicators of EMP success, responded. This level of reply allows confidence to the ensuing statistical analysis of data. The level of interest, combined with the subsequent invaluable response to this study, is geographically widespread. Each of the defined urban, mixed and rural estuaries are more or less equally represented in the written feedback.

5.2 The Analysis of Values Assigned to Each Indicator

Individual values given to each of the **MUM** criteria are summarised for every indicator (Appendix 2.1). The means values are calculated (see Appendix 2.2). These simple summary statistics are illustrated in graphs 1-20, and were designed to facilitate discussion with POs and members of RAs: the workshop attendees.

5.2.1 The Analysis of Proposed Indicators of EMP Success, Ranked by Mean Values

Allocating a rank highlights the preferred indicators of questionnaire respondents. With reference to Appendix 2.3, the indicators have been ranked according to their mean value. These are as follows:

Table 2: Proposed Indicators of EMP Success, Ranked by Mean Values.

1) A5: Number of consultation responses from those mailed? (4.02)
2) D8: Codes of practice developed through the EMP? (3.96)
3) B1: Amount of EMP core financial support for the year? (3.84)
4) B2: Who are the EMP funders and how long has each been funding? (3.83)
5) C1: Members of the EMP steering group? (3.81)
6) A6: Is an EMP website up and running? (3.76)*
7) D4: How has the EMP facilitated LEAPs? (3.76)*
8) D6: How has the EMP facilitated LBAP processes? (3.71)
9) C2: Seniority of representation on the EMP steering group? (3.62)
10) A1: Total number of action groups? (3.49)
11) D2: How has the EMP acted as a platform for LDPs? (3.48)
12) D3: How has the EMP acted as a platform for EMS processes? (3.43)
13) D1: How has the EMP facilitated co-operation between LPAs? (3.41)*
14) D7: Industry related initiatives mobilised by the EMP? (3.41)*
15) A3: Number of people on the partnership's mailing list? (3.37)
16) A4: Number of expressions of interest received from newsletters? (3.33)
17) D5: How has the EMP acted as a platform for SMPs? (3.21)
18) A2: Number of consultation workshops and attendance figures? (3.15)
19) A7: Contribution by PO to environmental education programmes? (3.09)
20) B3: Former EMP funders? (3.08)

** Rankings only revealed by scores beyond 2 decimal places*

It is significant to note that the range of scores is quite low: highest 4.02, lowest 3.08, a difference of only 0.94, representing only 23% of the difference available. This reveals that the POs did not consider there to be a great deal of difference between the value of the best and the worst indicators, and that all were of medium (score 3) to high (score 4) value.

5.2.2 Discussions Related To This Project With POs, Relevant Authorities (RAs) etc

Results from the written feedback were presented at a workshop hosted by English Nature, Peterborough, on the 16th of February, 2000. These were substantiated by discussion and further constructive analysis. The following questions were considered:

1. Do the proposed indicators capture the main functions of EMPs?
2. Will they be useful in demonstrating the benefits and successes of EMPs?
3. Are any of the proposed indicators superfluous?
4. Can distinct gaps be identified?

Each indicator was discussed individually with consideration to:

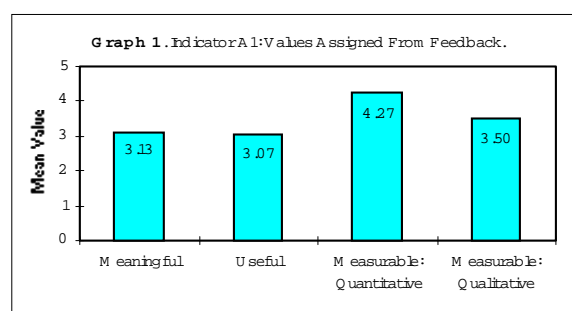
- Values assigned and the subsequent rank.
- Written and discussed feedback.

Indicator A1: Total *n* of action groups?

The mean value assigned to all criteria are relatively high (>3), shown below in graph 1. This is ranked 10/20, see table 2. The written comments can be summarised as follows:

- ‘The *n* of action groups is less indicative of success than the action achieved.’
- ‘Action groups are not always applicable to all EMPs.’
- ‘Action can be achieved without meetings being held.’

Discussion with the workshop attendees considered this indicator important if integrated with the relevant action plan with a means of tracking the commitment from each action group.

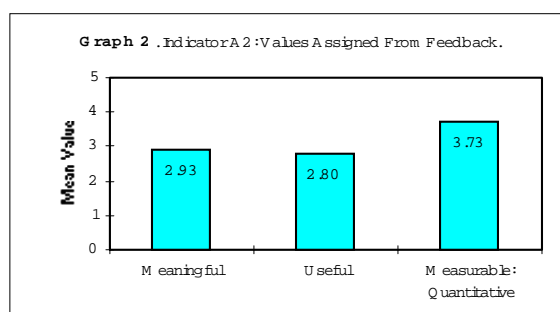


Indicator A2: *N* of consultation workshops and attendance figures?

The values given to this indicator are lower than for A1; with just over 50% of the total possible value assigned against the *meaningful* and *useful* criteria, see graph 2. This is ranked 18/20 and therefore appears to be relatively superfluous to the respondents. Comments are summarised:

- ‘This does not consider how effectively the participants were engaged at the workshop.’
- ‘Attendance figures are more indicative of success than the *n* of workshops.’
- ‘Consultation may be well developed without the need for workshops.’

Emphasis must be made to the historical perspective of this indicator. In addition, workshop attendees thought that more qualitative information could be drawn from the subjects covered at each consultation workshop.

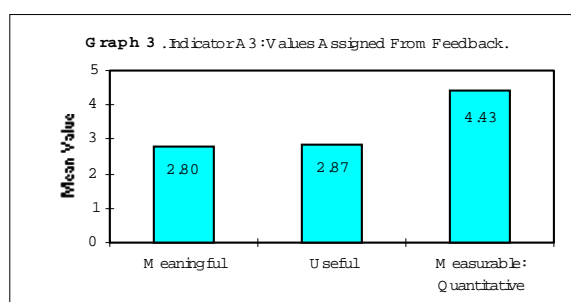


Indicator A3: N of people on the partnership's mailing list?

The values allocated against the criteria, *meaningful* and *useful* (2.8 and 2.87 respectively) were less valuable than for *measurable* (4.43), see graph 3. Ranked, 15/20 in table 2, this indicator is not popular with respondents. Written feedback is summarised:

- 'The target audience may be professional eg. statutory and NGO organisations, or the general public.'
- 'The important issue is how engaged and responsive the mailing list is.'

Further interesting feedback came from workshop attendees. First, was the need for clarification. This indicator would focus on the *n* of **addresses** on the mailing list. Second, within this indicator is the need for an opportunity to comment on the specific target audience; be it an individual or an organisation. As a result, a hierarchical approach should be adopted so that all aspects of the mailing list are acknowledged.

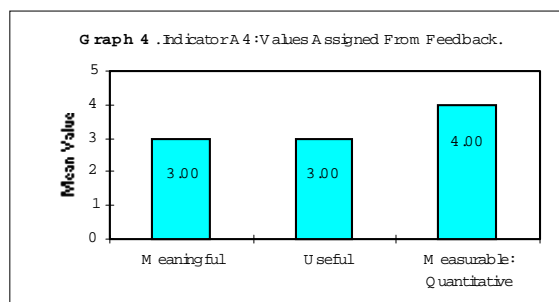


Indicator A4: N of expressions of interest received from the newsletters etc.?

Both *meaningful* and *useful* were allocated 60% of the total available value, see graph 4. In a similar way to the aforementioned indicators, the ability to measure this scored highly (4). Written opinion and ranking, 16/20, see table 2, indicates otherwise:

- 'Only relevant to the strategy/plan production. Does not relate to the success of the EMP.'
- 'Also a reflection of how easy it is to respond to the newsletter ie tear off/ prepaid slip.'
- 'A useful communicator.'

A return slip would be useful for the rolling evaluation of this indicator. However, the possibility was discussed that this may not be applicable to all EMPs. The *n* of expressions of interest may simply be unobtainable. An opportunity to reply 'not applicable' for this indicator was desired. Despite installing an optional response, the potential value of this indicator, as a tool for attracting more partners and core funding, should not be undervalued.

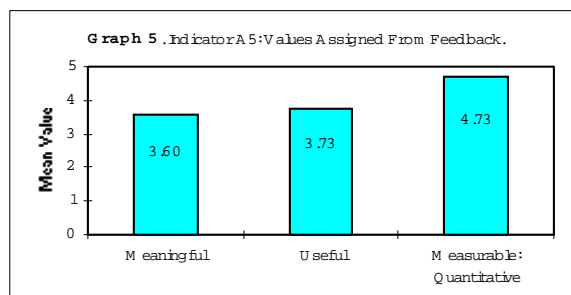


Indicator A5: N of consultation responses from those mailed?

This indicator is popular with the respondents. Mean values greater than 70% of the total available value are given to each *meaningful*, *useful* and *measurable*, see graph 5. This is ranked 1/20 in table 2: a clear indication that the respondents feel that this indicator captures EMP functions. Despite this high score, written feedback varies:

- ‘Positive feedback is often poor compared to the negative feedback.’
- ‘The responses and comments are no longer held from periods of consultation.’

In the discussion with workshop attendees it was recommended that the indicator would be greatly dependent upon the consultation approach adopted by each EMP. Of more concern is the fact that these figures may be unobtainable due to their historical emphasis. A ‘not applicable’ option should therefore be installed for this indicator.



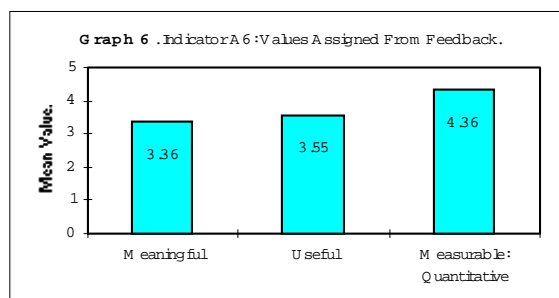
Indicator A6: Is an EMP website up and running?

The potential for a website to be an indicator of EMP success is acknowledged in the values allocated to each criteria, see graph 6. Lesser values are given to *meaningful* and *useful* (3.36 and 3.55 respectively) compared to *measurable* (4.36). This is consistent with the pattern emerging for each aforementioned indicator. *Useful*, scores significantly higher than *meaningful*. This may indicate a perceived belief rather than an experienced one, ranking 6/20 in table 2. A website may not only be considered a useful tool in the assessment of success, but to the PO, *ie*

- ‘A website is a useful form of PR and access to information.’
- ‘An indicator becoming more useful in time.’
- ‘The numbers of links made to new partners would also be a good indicator.’

In discussion with workshop attendees, this indicator was considered useful for it’s potential to field EMP enquiries. Newsletters would be easily accessible to those with Internet access. However, there are also

shortcomings. For example, the Internet may not necessarily be accessible to everyone with an interest in the EMP.

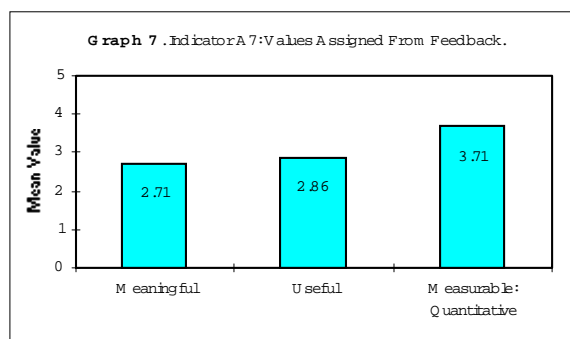


Indicator A7: Contribution by the project officer to environmental education programmes?

Responses collated give lower mean values than for the previous indicators, see graph 7. *Meaningful* score lower than does *useful* (2.71 and 2.86 respectively). *Measurable*, once again scores well at 3.71. This is not popular with the respondents; ranked 19/20 in table 2. The adjoining comments suggest the reasons why:

- ‘This indicator tends to be a measure of the individual PO’s interest and aptitude in educational programmes rather than of EMP success.’
- ‘Environmental education is very time consuming and is rarely a priority for the PO.’

From the discussion, it was concluded that this indicator needed refinement so that it concentrated on wider community education integrating (1) information provision, (2) awareness raising and (3) interpretation as key functions. Also needed would be more specific reference to estuary management issues.



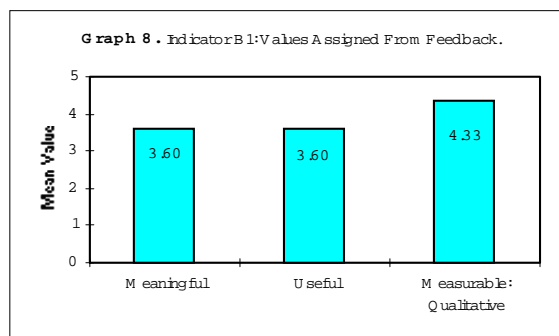
Indicator B1: Amount of EMP financial support for the year?

Ranked 3/20 in table 2, values allocated to this indicator emphasise a common perception that funding persists as an important element to the continued existence of EMPs. Graph 8 shows how both *meaningful* and *useful* are given values 3.6; a relatively high score compared to the indicators previously discussed. Written feedback varies:

- ‘A relevant and good measure of success.’
- ‘Money doesn’t necessarily equate to success.’

The definition of this indicator was discussed with workshop attendees. The term ‘financial support’ was modified to ‘core funding’. The question as to the degree that an EMP would be a self sustaining structure, without a dedicated PO, was to some extent resolved by introducing two more indicators:

1. How long is the contract of the PO?
2. What long term funding commitments have been made to the EMP?

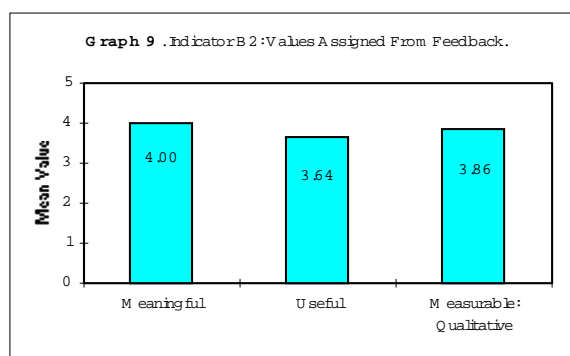


Indicator B2: Who are the EMP funders and how long has each been funding?

B2 was given a similar value to B1 with a rank 4/20. This indicator was considered to be one of the most *meaningful* (4.00) by the respondents, see graph 9. This is also the first indicator where the value for *measurable* is lower than for *meaningful* (3.86): possibly an indication of a qualitative variable being introduced. The written feedback is summarised:

- ‘Asking the funding partners why they choose to fund would reveal more.’
- ‘The funders are prone to other pressures which are not EMP related.’

Discussion from the feedback concluded that this was a viable indicator of EMP success capturing the main functions of the partnership.



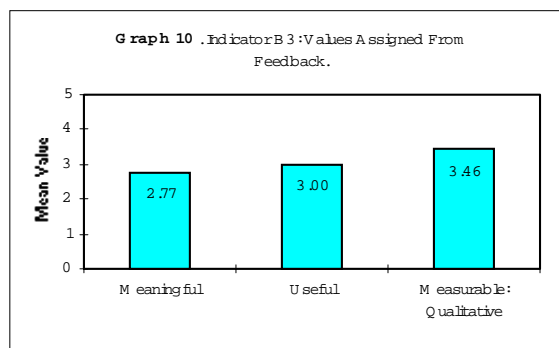
Indicator B3: Former EMP funders?

The values allocated to this indicator are in the lowest region of scores for all indicators, see graph 10. As expected it comes 20/20 in the ranking table 2. The opinion that this has little value as a *meaningful*, *useful* or *measurable* indicator, is also supported by the written responses:

- ‘To avoid. This could be seen as negative.’
- ‘The funders drop out for many reasons beyond not wishing to support the partnership.’

- ‘A useful internal indicator but not good if you want to get the funder back on board.’

The above caveats were also identified by workshop attendees. These were to some extent resolved by modifying the descriptive paragraph, accompanying the indicator, so that a request would be made for details on why support terminates.

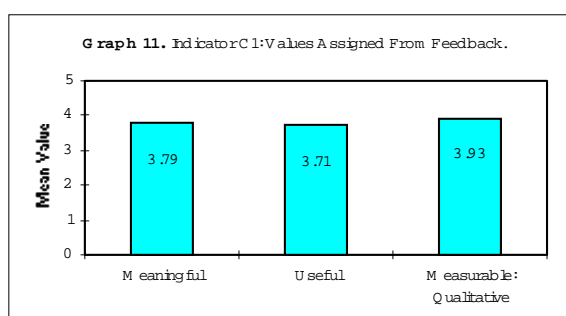


Indicator C1: Members of the EMP steering group?

Mean values allocated to this indicator are high compared to the majority, ranking 5/20, see graph 11 and table 2. Each of the *meaningful*, *useful* and *measurable* criteria have more than 74% of their total available value. Comments to support the numerical data are summarised:

- ‘If comprehensive, a powerful tool.’
- ‘This should be indicative of breadth of involvement.’
- ‘It must be remembered that in some projects, a pre-requisite of being a member of the steering group is a funding contribution.’

Further to the written feedback, discussion with the workshop attendees sustained the opinion that this would be potentially indicative of EMP success.



Indicator C2: Seniority of representation on the EMP steering group?

This indicator is allocated a relatively high mean value for *meaningful*, *useful* and *measurable*, see graph 12 (3.73, 3.33 and 3.79 respectively). It is also ranked with the top 10 indicators at 9/20, table 2. Comments are summarised:

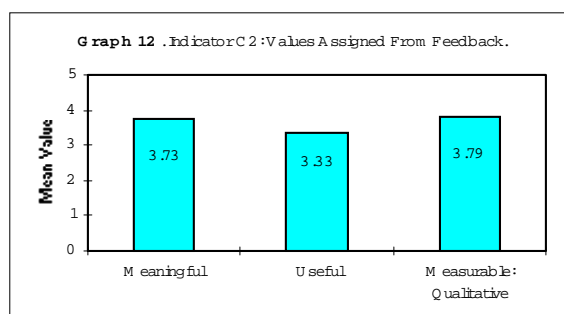
- ‘The scale of the estuary is an important consideration.’

- ‘This suggests the importance of the estuary rather than the success of the EMP.’
- ‘Senior representation can mean that partnership information does not diffuse within and between sectors of an organisation.’

Related indicators were discussed:

- Are different sectors of the private and public body fully represented on the steering group?
- Are there mechanisms in place for internal integration and the transferral of information within EMP steering group organisations?

These are considered in the revised indicators.

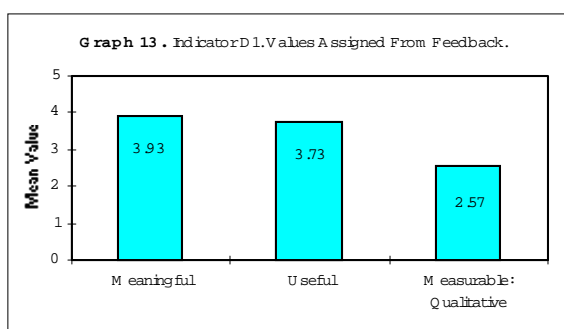


Indicator D1: How has the EMP facilitated co-operation between LPAs?

Receiving mean values of 3.93 and 3.73 for *meaningful* and *useful*, this indicator is regarded as popular with respondents. There is however mutual concern for *measurable*, with the lowest value for all indicators, see graph 13 (2.57). Although this indicator is only ranked 13/20 in table 2, it's position is obviously influenced greatly by the qualitative element. This feeling is echoed in the written feedback:

- ‘This is hard to measure but would be useful and meaningful especially in a cross border site.’
- ‘This would be very difficult to measure as most of the networking is done via informal conversations.’

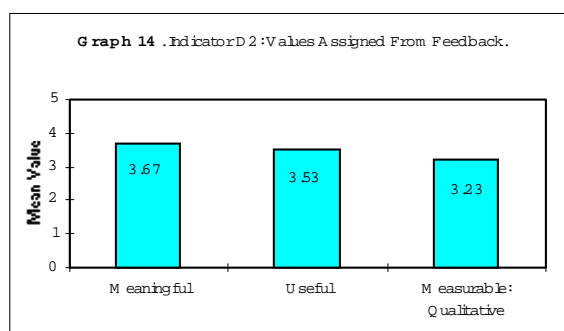
Similar points were made by the workshop attendees - facilitating consultation was suggested as an additional indicator of success and possibly one that would be more easily qualitatively recorded.



Indicator D2: How has the EMP acted as a platform for LDPs?

This indicator was subsequently considered to be meaningless by the contractors and the client. The establishment of Local Development Plans is a statutory obligation and it would therefore not be the responsibility of an EMP to act as a platform. This is however ranked at 11/20 in table 2. The individual

mean values allocated to this by respondents, conveys another opinion. This is certainly not the lowest scoring indicator, as all criteria received values greater than 3, see graph 14.

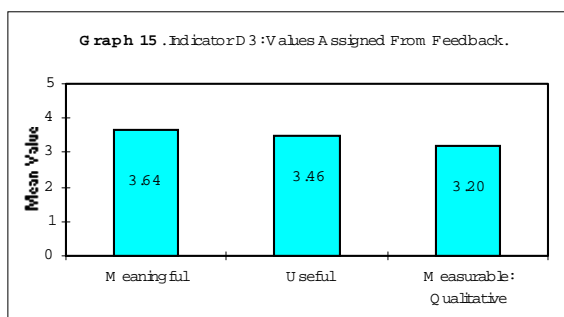


Indicator D3: How has the EMP acted as a platform for EMS processes?

This indicator is allocated moderately high mean values, see graph 15 and ranking 12/20 in table 2. The mean value given to each *meaningful*, *useful* and *measurable*, is similar to values for other indicators (3.64, 3.46 and 3.20 respectively). Written response varies:

- ‘Some EMPs do not have EMSs.’
- ‘This is a very good indicator as EMS management requires partnership from RAs. It would hopefully follow that the Estuary Partnership be the ideal forum.’

Following the workshop discussion, it was suggested that there were in fact two levels of EMP participation relating to EMS processes. First it may be as the aforementioned platform. Secondly, it may be as an influence/support. These were to be considered in the revised indicators.

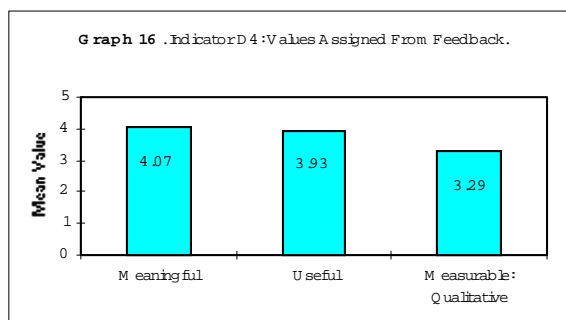


Indicator D4: How has the EMP facilitated LEAPs?

This is considered the most *meaningful* of the indicators with a value of 4.07 given by respondents against this criteria. *Useful* also scores highly with 3.93, while again, the concern for a feasible qualitative measurement is evident (3.29). In a similar way to D1, doubt in qualitative data collection lowers the ranking to 7/20. The written feedback offers both support and constructive criticism:

- ‘Best indicator so far.’
- ‘Mention in a plan does not necessarily translate into partnership work, but this is harder to measure.’

Discussion with workshop attendees highlighted how D4 would be dependent upon external forces to the EMP. For example, the indicator would be heavily dependent upon (1) the EA’s regional policy, (2) the *n* of LEAPs bordering the estuary catchment and (3) the time frame over which the LEAP was reviewed.

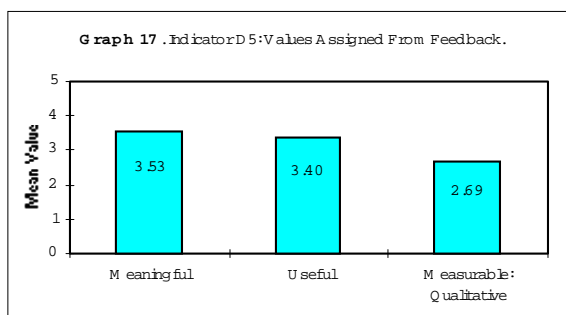


Indicator D5: How has the EMP acted as a platform for SMPs?

Mean values allocated against *meaningful*, *useful* and *measurable* are 3.53, 3.40 and 2.69 respectively, see graph 17. This indicator is not greatly supported by respondents, ranked 17/20 in table 2. Responses are summarised as follows:

- ‘This indicator requires criteria for measuring links *eg.* shared consultation.’
- ‘For this to be credible there must be compatibility and no overlap or duplication of action.’

The workshop considered a theme already discussed for D4. Again this indicator would be dependent on the *n* of Shoreline Management Plans bordering the area covered by an EMP. Furthermore, the level of PO participation would vary for each EMP. For example, while consultation may monopolise participation for one PO, representation on the SMP steering group may engage another.

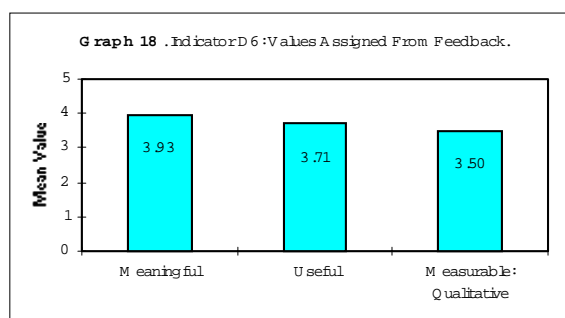


Indicator D6: How has the EMP facilitated LBAP processes?

Meaningful is allocated the highest mean value of the three criteria; 3.93 as opposed to 3.71 or 3.5 obtained for *useful* and *measurable*, see graph 18. Ranked 8/20 in table 2, this is considered one of the most important indicators for this category. Written feedback from respondents are summarised:

- ‘It is logical to use the EMP as a vehicle for delivering LBAP objectives.’
- ‘Some LBAPs clashed with the EMP. Not all EMP priority species are LBAP’ed.’

The potential for an EMP to influence more active BAP production was discussed at the workshop. The level of facilitation would also depend heavily on the local BAP being employed. These factors would be referred to in dialogue relating to this indicator, with an invitation to comment on local conditions and influences.

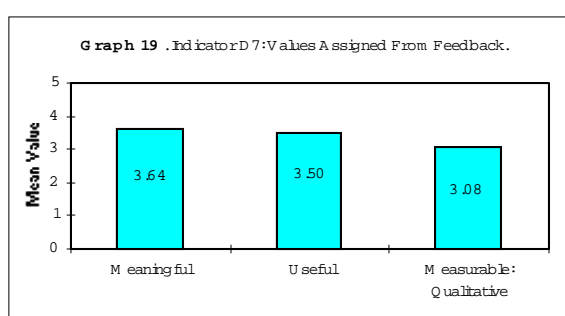


Indicator D7: Industry related initiatives mobilised by the EMP?

Although the mean values for this indicator are not amongst the highest and ranking is only 14/20 in table 2, written feedback offers strong support to the concept:

- ‘This must be a goal - EMP is in danger of becoming a conservation tool only.’
- ‘Breaking the perception that an EMP is purely for conservation is a very good measure success.’

The pursuing workshop discussion supported this as an indicator of EMP success - it was obviously perceived as capturing the main functions of the partnership. In addition to this, more possible indicators were suggested to encompass regeneration schemes and economic development.



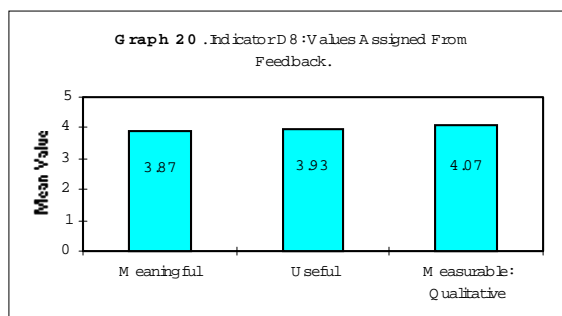
Indicator D8: Codes of Practice developed through an EMP?

This indicator is popular with respondents; ranked 2/20 in table 2. There is little in the way of deviation in the mean values allocated to *meaningful*, *useful* and *measurable* (3.87, 3.93 and 4.07 respectively), see graph 20. The comments represent varied opinion:

- ‘This is a useful device.’
- ‘This depends on the agenda of the EMP together with the recommendations arising from strategies.’

Codes of Conduct were perceived as a good tool. It was however suggested that rules and codes may be used when other methods of conflict management had failed. Acknowledged within this framework were three progressive stages of development incorporated within Codes of Practice: support, publicity and dissemination, all to be taken into consideration in a review of indicators.

The development of meaningful indicators of Estuary Management Partnership success.



5.3 The Analysis of Rank With Criteria Weighting

With reference to the summary chart (Appendix 2.3), indicators are ranked with criteria weighting assigned by workshop attendees. The following relative weighting was agreed:

- **Meaningful:** 31%.
- **Useful:** 43%.
- **Measurable:** 26%

These are illustrated in Graph 21. Table 2 demonstrates how these weighted ranks vary from the rank without criteria weighting (section 5.2.1): whether these are sensitive to an increase or decrease in their order.

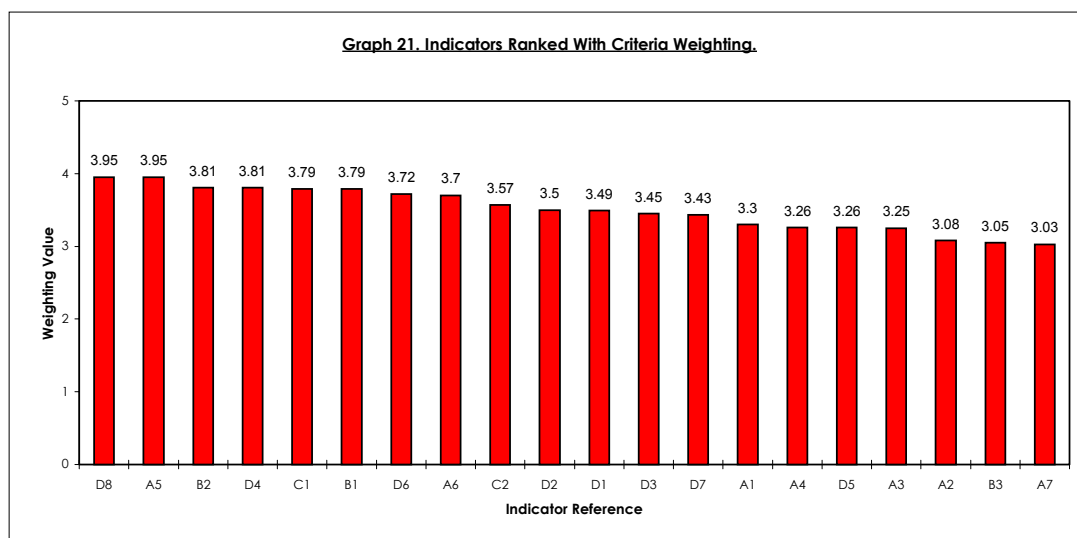


Table 3: Indicators of EMP Success According to their Criteria Weighting.

1) D8: Codes of practice developed through the EMP? (3.95) $\uparrow 1^{\dagger}$
2) A5: Number of consultation responses from those mailed? (3.95) $\downarrow 1$
3) B2: Who are the EMP funders and how long has each been funding? (3.81) $\uparrow 1$
4) D4: How has the EMP facilitated LEAPs? (3.81) $\uparrow 3$
5) C1: Members of the EMP steering group? (3.79) =
6) B1: Amount of EMP core financial support for the year? (3.79) $\downarrow 3$
7) D6: How has the EMP facilitated LBAP processes? (3.72) $\uparrow 1$
8) A6: Is an EMP website up and running? (3.7) $\downarrow 2$
9) C2: Seniority of representation on the EMP steering group? (3.57) =
10) D2: How has the EMP acted as a platform for LDPs? (3.5) $\uparrow 1$
11) D1: How has the EMP facilitated co-operation between LPAs? (3.49) $\uparrow 2$
12) D3: How has the EMP acted as a platform for EMS processes? (3.45) =
13) D7: Industry related initiatives mobilised by the EMP? (3.43) $\uparrow 1$
14) A1: Total number of action groups? (3.3) $\downarrow 4$
15) A4: Number of expressions of interest received from newsletters? (3.26) $\uparrow 1$
16) D5: How has the EMP acted as a platform for SMPs? (3.26) $\uparrow 1$
17) A3: Number of people on the partnership's mailing list? (3.25) $\downarrow 2$
18) A2: Number of consultation workshops and attendance figures? (3.08) =
19) B3: Former EMP funders? (3.05) $\uparrow 1$
20) A7: Contribution by PO to environmental education programmes? (3.03) $\downarrow 1$

[†] Represents the extent to which the rank with criteria weighting deviates from the rank without criteria weighting (some changes are revealed by figures beyond 2 decimal places)

The indicators are not notably sensitive to the weighting applied. The majority of indicators increase or decrease in rank by only 1 or 2 positions when compared with ranking without criteria weighting, (table 2.) Four indicators remain equal both with and without weighting.

Indicators A1, B1 and D4 alter from the rank without weighting by more than 2 positions. Discussed in section 5.2 is the considerably high value assigned to the *measurable* criteria for both A1 and B1. With only 26% weighting for this criteria, a drop in rank, by 4 and 3 positions is justified. In contrast to this, D4 is given a considerably high score for the *meaningful* criteria. It's position is strengthened with the applied weighting so that it rises 3 places in rank.

5.4 The Analysis of Rank, With Criteria Weighting, Within Categories

The same criteria weighting has been applied to indicators within categories. The qualitative analysis of values are illustrated in graph 22 and table 4.

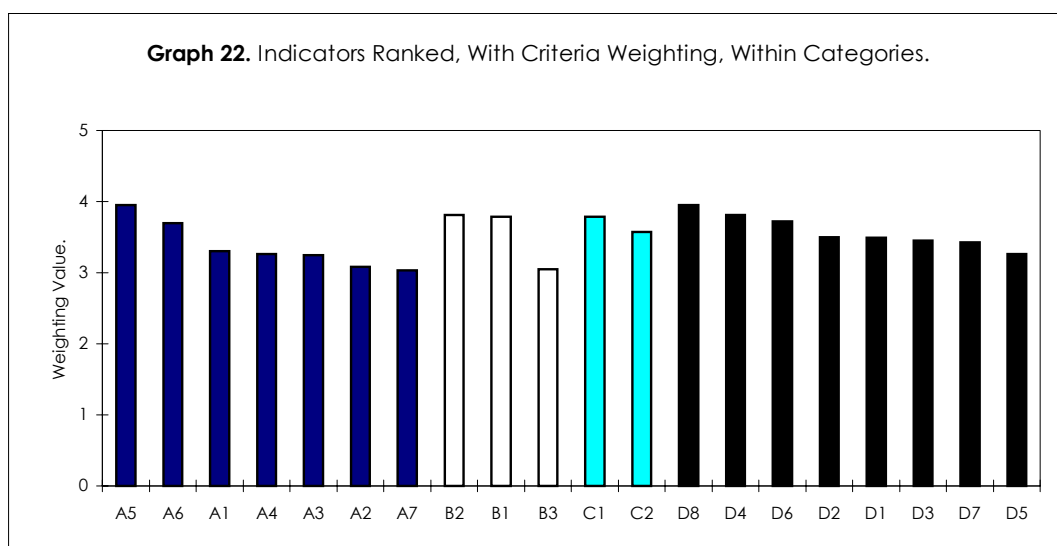


Table 4: Indicators of EMP Success According to their Criteria Weighting within Categories.

A. Stakeholder Participation.

A5: Number of consultation responses from those mailed? (3.95)
A6: Is an EMP website up and running? (3.7)
A1: Total number of action groups? (3.3)
A4: Number of expressions of interest received from newsletters? (3.26)
A3: Number of people on the partnership's mailing list? (3.25)
A2: Number of consultation workshops and attendance figures? (3.08)
A7: Contribution by PO to environmental education programmes? (3.03)

B. Leverage.

B2: Who are the EMP funders and how long has each been funding? (3.81)
B1: Amount of EMP core financial support for the year? (3.79)
B3: Former EMP funders? (3.05)

C. Steering Group Participation.

C1: Members of the EMP steering group? (3.79)
C2: Seniority of representation on the EMP steering group? (3.57)

D. Involvement in other Strategic Initiatives.

D8: Codes of practice developed through the EMP? (3.95)
D4: How has the EMP facilitated LEAPs? (3.81)
D6: How has the EMP facilitated LBAP processes? (3.72)
D2: How has the EMP acted as a platform for LDPs? (3.5)
D1: How has the EMP facilitated co-operation between LPAs? (3.49)
D3: How has the EMP acted as a platform for EMS processes? (3.45)
D7: Industry related initiatives mobilised by the EMP? (3.43)
D5: How has the EMP acted as a platform for SMPs? (3.26)

Categories A and B appear to have a larger divide between the highest and lowest ranking indicators compared to categories C and D. This is taken from the visual assessment of graph 22 and the supporting detail of table 4. Evidence suggests that the views of respondents on categories concerning:-

- Leverage and
- Involvement in other Strategic Initiatives,

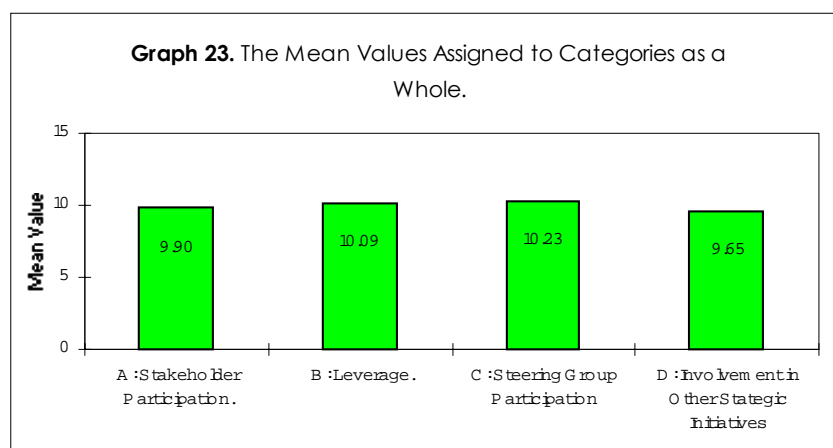
:-are more consistent than those concerning:-

- Stakeholder participation and
- Steering group participation.

5.5 A Comparison of the Values Given to Each Category of Indicators

Variation has been identified between individual indicators. The question remains: Does a similar level of variation exist between categories A-D? Qualitative analysis of the original values recorded in Appendix 2.1, are studied for between category variation. The results are shown in graph 23:

- Stakeholder Participation.
- Leverage.
- Steering Group Participation.
- Involvement in Other Strategic Initiatives.



Through qualitative assessment, there is little to suggest that the mean value varies significantly between categories A - D. It is concluded that the opinions of the POs and members of RAs were, in general, consistent between categories.

5.6 The Analysis of Time Spent by Different POs.

Section 5 of the questionnaire was not completed by all respondents. There were too few pie charts to analyse quantitatively. However, for the purpose of qualitative analysis, two have been recorded. Chart 1 is annotated as follows:

A = Time spent in discussion with *existing* partners.

B = Time spent dealing with *potential* partners and funders.

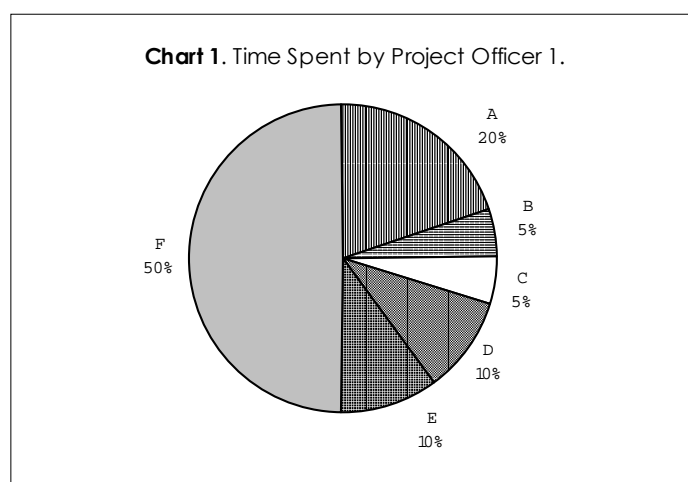
C = Time spent involved in localised management plans relating specifically to biodiversity.

D = Time spent involved in localised management plans relating specifically to other initiatives.

E = Time spent dedicated to education and the development of public awareness.

F = Time spent pursuing funding to maintain initiative.

A to E are provided in the questionnaire. F is an addition made by PO1.



In chart 2, the PO provides two additional activities which feature in their duties: F and G.

A = Time spent in discussion with *existing* partners.

B = Time spent dealing with *potential* partners and funders.

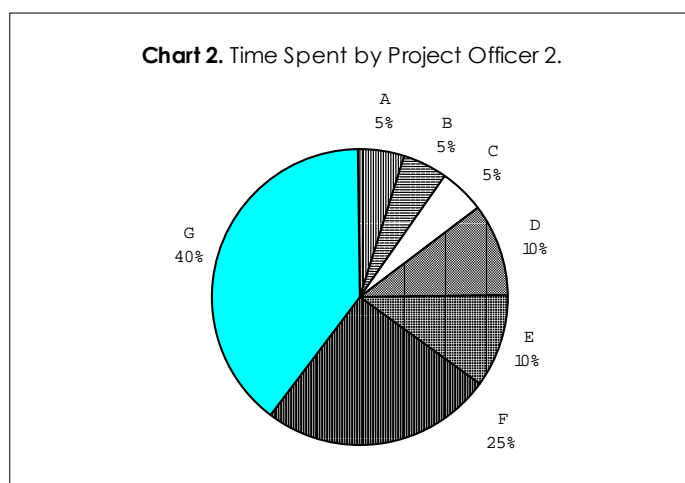
C = Time spent involved in localised management plans relating specifically to biodiversity.

D = Time spent involved in localised management plans relating specifically to other initiatives.

E = Time spent dedicated to education and the development of public awareness.

F = Time spent co-ordinating meetings - steering group/ forum group.

G = Time spent on plan production and associated documents *eg.* technical information.



The relative time spent by PO1 and 2 on different duties are comparable. PO1 estimates spending a considerable percentage (50%) of their time pursuing funding in order to maintain the EMP. In contrast, PO2 review their time spent with 40% allocated to plan production and the forming of associated papers. PO2 also gives ~25% of their time to the co-ordination of meetings with the EMP steering and forum groups.

This demonstrates that POs work within the same field in different EMPs maintaining comparable priorities. Depending on how far into the planning/ implementation stage, time spent by the PO can vary. If a PO is not immediately concerned by the need for raising funds, priorities will steer towards more pressing issues and vice versa.

The function and objectives of each partnership are comparable. Time spent by POs on different duties echoes the needs of the partnership for any given time. The purpose of this section is not to account for the actions of each PO, but to monitor the time spent in relation to the successes and deliverables achieved. An ongoing record of project management would also be indicative of progress from stages of consultation/planning to implementation.

Section 6

Revised Indicators and Future Recommendations

6.1 Revised Indicators of EMP success

Indicators are revised on the basis of the aforementioned written feedback and workshop discussion.

It is first of particular importance to place a time to the process of evaluating indicators. Referring to definitions, certified by the DETR for Regeneration Partnerships (2000), indicators of EMP success are recommended assessment by

‘rolling evaluation; including performance assessment annually through periodic review.’

Each of the indicators are mutually compatible with this approach.

Secondly, but of equal importance, is the need to introduce a mechanism allowing indicators to be tailored to unique and diverse EMP objectives. Many of these indicators are now phrased so that two varying degrees of PO participation are considered. The intention is therefore to circle the most relevant definition. Also installed within this revision, is the opportunity to now respond ‘Not Applicable’ where appropriate.

A. STAKEHOLDER PARTICIPATION.

8. The total n of topic groups that are currently active/ n of forum members?
9. The n of consultation workshops and their corresponding attendance figures?
10. The n of addresses on the partnership’s mailing list/s? Comments on target audience?
11. The n of expressions of interest received from newsletters *eg.* return card/slip?
12. The % of consultation responses from those mailed?
13. Is an EMP website up and running?
14. The n of days spent by the PO providing resources for community education on estuarine management issues?

B. LEVERAGE and LONG TERM FUNDING.

6. The amount of core financial support obtained for the year?
7. What long term funding commitments have been made to the EMP?
8. The length of the Project Officer’s contract?
9. The EMP funders and length of time each has been funding?
10. A summary of the former EMP funders and reasons for their support terminating?

C. STEERING GROUP PARTICIPATION.

5. The n of representatives on the EMP steering group?
6. Seniority of representation on the EMP steering group?
7. Frequency of steering group meetings and the corresponding level of attendance from members?

8. The degree of representation on the steering group within and between sectors for estuary interest groups?

D. INVOLVEMENT IN OTHER STRATEGIC INITIATIVES.

13. Has the EMP facilitated co-operation between LPAs?
14. Has the EMP acted as an influence, support *or* platform for EMS processes?
15. Has the EMP developed *or* facilitated LA21 strategies?
16. Has the EMP been involved in the development of local sustainability indicators?
17. Depending on Environment Agency policy, has the EMP strategy been integrated with the LEAP?
18. Has the partnership played a part in the wider consultation of SMPs?
19. Has the EMP facilitated the development of LBAP processes? What are the key functions?
20. Industry related initiatives initiated *or* supported *and/or* delivered by the EMP?
21. Has the EMP supported *or* facilitated local regeneration schemes?
22. Has the EMP developed *and/or* maintained relationships with Tourism Development Partnerships?
23. Codes of Practice developed *or* supported/publicised by the EMP?
24. Time spent by the PO lobbying *and/or* responding to regional, national and international issues and estuary related initiatives?

6.2 Future Recommendations

If indicators of success are to be fully integrated and applied at the early stages of EMP strategies, then a 'Good Practice Guide' which is consistent with proposed indicators would benefit both the POs and RAs. In order for the rolling evaluation of EMPs to become an integral part of the strategy, there must be no shock element to the exercise.

It was clear that the qualitatively *measurable* indicator is perceived as difficult to apply. Methods for best accumulating and collating resources, directly relevant to an indicator of success, would doubtlessly be of value. The indicators could also be qualitatively reported on by adapting them as standard headings in an EMP reporting format.

Benefits to the PO and RAs should derive from the application of indicators both in guiding the development of EMP functions and providing support for EMP fund-raising initiatives. Comparability would be introduced and so a parameter for success would evolve. Only from the active application of these indicators, by all EMP POs and RAs, will an effective 'Good Practice Guide' unfold.

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Appendix 2.1 Feedback Summary on Proposed Indicators.															
Individual.	A.		B.		C.		D.		E.		F.		G.		H.
A1: M	4		1		4		3		3		3		1		1
U	3		1		4		3		3		4		1		1
M	4		4		4				5		1		5		5
		11	3	9	3	15	4	10	5	16	5	13	3	10	2
A2: M	3		1		3		3		1		5		1		1
U	2		1		3		2		1		4		1		1
M	4	9	1	3	2	8	4	9	5	7	5	14	5	7	1
A3: M	1		5		2		3		5		2		2		2
U	1		4		1		4		5		2		3		2
M		2	3	12	4	7	4	11	5	15	4	8	5	10	5
A4: M	3		2		3		3		1		3		1		1
U	3		4		2		3		1		4		1		1
M	4	10	4	10	4	9	2	8	5	7	4	11	1	3	5
A5: M	3		5		3		4		1		3		3		1
U	4		5		3		4		1		3		3		1
M	4	11	5	15	4	10	4	12	5	7	4	10	5	11	5
A6: M					3		2		3		2		4		3
U					3		3		3		3		4		3
M					3	9	5	10	5	11	2	7	2	10	3
A7: M	4		4		2		4		1		3		2		1
U	3		4		2		3		1		3		4		1
M	4	11	4	12	3	7	3	10	3	5	4	10	5	11	2
B1: M	4		5		4		1		5		5		1		1
U	4		5		3		2		5		4		2		1
M	4	12	5	15	3	10	3	6	5	15	5	14	5	8	2
B2: M			4		4		3		5		3		2		3
U			2		3		3		5		3		1		3
M			4	10	4	11	3	9	5	15	2	8	2	5	4
B3: M			2		4		3		2		2		1		2
U			1		4		3		5		1		1		3
M			1	4	3	11	4	10	5	12	4	7	5	7	1
C1: M	5		5		3				5		3		1		4
U	4		5		3				5		3		1		5
M	4	13	3	13	3	9			5	15	4	10	5	7	3
C2: M	4		4		4		2		5		4		1		3
U	2		4		3		2		5		4		1		3
M	0	6	4	12	3	10	4	8	5	15	3	11	5	7	4
D1: M	3		4		3		3		5		2		4		3
U	2		3		3		3		5		2		5		3
M		5	2	9	3	9	1	7	5	15	2	6	2	11	1
D2: M	4		3		3		3		5		1		3		1
U	3		2		3		3		5		1		3		1
M		7	2	7	3	9	2	8	5	15	3	5	2	8	2
D3: M			1		2				5		4				1
U			1		1				5		4				1
M			1	3	2	5			5	15	3	11			2
D4: M	3		4		4		3		5		4		5		2
U	2		4		4		4		5		4		5		2
M		5	2	10	3	11	4	11	5	15	4	12	5	15	1
D5: M	4		5		2		3		5		4		1		2
U	2		5		2		3		5		4		1		2
M		6	2	12	2	6	3	9	5	15	2	10	1	3	4
D6: M	4		3		3		4		5		4		3		2
U	2		3		2		4		5		4		3		2
M		6	2	8	3	8	4	12	5	15	3	11	4	10	4
D7: M			1		3		3		5		4		4		1
U			1		3		2		5		4		3		1
M			1	3	3	9	2	7	5	15	3	11	4	11	2
D8: M	3		5		2		4		5		4		2		1
U	3		5		2		4		5		4		3		1
M		6	5	15	2	6	4	12	5	15	3	11	5	10	2
Total:	120		185		179		173		260		200		164		118
%:	39%		61%		59%		57%		85%		66%		54%		39%

Individual.		I.		J.		K.		L.		M.		N.		O.		P.	
A1:	M	4		3		4		2		3		4		3		4	
	U	4		3		4		2		3		3		3		4	
	M	3		3		5		4		2		5		5		5	
		3	14	4	13		13		8	1	9	1	13	3	14	5	18
A2:	M	3		4		3		2		4		2		3		5	
	U	3		3		4		4		2		3		3		5	
	M	3	9	4	11	4	11	4	10	2	8	2	7	5	11	5	15
A3:	M	3		3		4		1		2		2		2		3	
	U	3		4		4		1		1		3		2		3	
	M	3	9	4	11	4	12	3	5	4	7	4	9	5	9	5	11
A4:	M	4		5		5		1		3		4		4		2	
	U	4		4		5		1		2		4		4		2	
	M	4	12	4	13	3	13	4	6	4	9	2	10	5	13	5	9
A5:	M	4		5		4		4		4		4		3		3	
	U	4		5		5		4		4		3		4		3	
	M	4	12	4	14	5	14	4	12	4	12	4	11	5	12	5	11
A6:	M	3				2		3		2		4		4		2	
	U	2				3		3		3		3		4		2	
	M	2	7			4	9	5	11	4	9	3	10	5	13	5	9
A7:	M			3		4		2		2		2		2		2	
	U			2		5		2		2		3		3		2	
	M			4	9	4	13	2	6	3	7	2	7	4	9	5	9
B1:	M	4		4		5		1		4		3		3		4	
	U	4		3		5		1		4		3		4		4	
	M	4	12	4	11	5	15	4	6	4	12	4	10	5	12	3	11
B2:	M	3		4		5		4		4		4		3		5	
	U	3		4		5		4		4		4		2		5	
	M	3	9	4	12	5	15	4	12	4	12	3	11	2	7	5	15
B3:	M	1		3				4		4		1		3		4	
	U	1		3				4		4		1		4		4	
	M	1	3	4	10			4	12	4	12	1	3	3	10	5	13
C1:	M	3		3		5		2		4		4		3		3	
	U	3		2		4		2		4		4		4		3	
	M	3	9	3	8	5	14	2	6	1	9	4	12	5	12	5	11
C2:	M	3		3		4		4		4		4		4		3	
	U	3		2		4		3		4		4		3		3	
	M	3	9	3	8	3	11	2	9	1	9	4	12	4	11	3	9
D1:	M	5		4		4		5		3		4		4		3	
	U	5		4		5		5		3		2		3		3	
	M	5	15	3	11	3	12	3	13	1	7	1	7	2	9	2	8
D2:	M	5		4		5		5		3		5		3		2	
	U	5		4		5		5		3		5		3		2	
	M	5	15	3	11	3	13	5	15	1	7	2	12	4	10	2	6
D3:	M	3		5		5				2		4		3		5	
	U	3		5		5				2		4		2		5	
	M	3	9	4	14	4	14			1	5	2	10	3	8	4	14
D4:	M	5		4		5		2		4		4		4		3	
	U	5		3		5		2		4		4		3		3	
	M	5	15	2	9	4	14	3	7	2	10	2	10	2	9	2	8
D5:	M	3		4		4		4		3		4		2		3	
	U	3		3		4		4		3		4		3		3	
	M	3	9	3	10	3	11	3	11	1	7	2	10	3	8	2	8
D6:	M	5		5		5				3		3		3		3	
	U	5		4		5				4		3		3		3	
	M	5	15	3	12	5	15			2	9	2	8	2	8	2	8
D7:	M	4		5		4		2		4		4		4		3	
	U	4		4		5		2		4		4		4		3	
	M	4	14	3	12	3	12	2	6	2	10	2	10	3	11	3	9
D8:	M	3		4		4		3		4		4		5		5	
	U	3		3		5		4		4		4		4		5	
	M	3	9	3	10	5	14	4	11	3	11	2	10	4	13	5	15
Total:		207		213		245		166		182		192		209		217	
%:		68%		70%		80%		54%		60%		63%		69%		71%	

Appendix 2.2 Summary Statistics for Indicator Values.

Indicato	Evaluation	Mean	Standard
A.1	Meaningfu	3.13	1.12
	Useful	3.07	1.09
	Measurable:	4.27	1.21
	Measurable:	3.50	1.36
2	Meaningfu	2.93	1.34
	Useful	2.80	1.26
	Measurable:	3.73	1.46
	Measurable:	3.73	1.46
3	Meaningfu	2.80	1.20
	Useful	2.87	1.30
	Measurable:	4.43	0.74
	Measurable:	4.43	0.74
4	Meaningfu	3.00	1.38
	Useful	3.00	1.38
	Measurable:	4.00	1.18
	Measurable:	4.00	1.18
5	Meaningfu	3.60	1.15
	Useful	3.73	1.21
	Measurable:	4.73	0.51
	Measurable:	4.73	0.51
6	Meaningfu	3.36	0.80
	Useful	3.55	0.57
	Measurable:	4.36	1.25
	Measurable:	4.36	1.25
7	Meaningfu	2.71	1.06
	Useful	2.86	1.11
	Measurable:	3.71	0.99
	Measurable:	3.71	0.99
B.1	Meaningfu	3.60	1.54
	Useful	3.60	1.31
	Measurable:	4.33	0.93
	Measurable:	4.33	0.93
2	Meaningfu	4.00	0.88
	Useful	3.64	1.18
	Measurable:	3.86	1.06
	Measurable:	3.86	1.06
3	Meaningfu	2.77	1.16
	Useful	3.00	1.48
	Measurable:	3.46	1.58
	Measurable:	3.46	1.58
C.1	Meaningfu	3.79	1.19
	Useful	3.71	1.19
	Measurable:	3.93	1.23
	Measurable:	3.93	1.23
2	Meaningfu	3.73	0.96
	Useful	3.33	1.02
	Measurable:	3.79	1.13
	Measurable:	3.79	1.13
D.1	Meaningfu	3.93	0.87
	Useful	3.73	1.15
	Measurable:	2.57	1.30
	Measurable:	2.57	1.30
2	Meaningfu	3.67	1.36
	Useful	3.53	1.40
	Measurable:	3.23	1.30
	Measurable:	3.23	1.30
3	Meaningfu	3.64	1.56
	Useful	3.46	1.70
	Measurable:	3.20	1.30
	Measurable:	3.20	1.30
4	Meaningfu	4.07	0.98
	Useful	3.93	1.08
	Measurable:	3.29	1.33
	Measurable:	3.29	1.33
5	Meaningfu	3.53	1.14
	Useful	3.40	1.11
	Measurable:	2.69	1.02
	Measurable:	2.69	1.02
6	Meaningfu	3.93	0.98
	Useful	3.71	1.06
	Measurable:	3.50	1.24
	Measurable:	3.50	1.24
7	Meaningfu	3.64	1.24
	Useful	3.50	1.28
	Measurable:	3.08	1.03
	Measurable:	3.08	1.03
8	Meaningfu	3.87	1.20
	Useful	3.93	1.14
	Measurable:	4.07	1.12
	Measurable:	4.07	1.12

Continued:

D1: M	3.93	0.31	1.22
U	3.73	0.43	1.60
M:Qualitative	2.57	0.26	0.67
Indicator's Value:	3.41	1.00	3.49
D2: M	3.67	0.31	1.14
U	3.53	0.43	1.52
M:Qualitative	3.23	0.26	0.84
Indicator's Value:	3.48	1.00	3.50
D3: M	3.64	0.31	1.13
U	3.46	0.43	1.49
M:Qualitative	3.20	0.26	0.83
Indicator's Value:	3.43	1.00	3.45
D4: M	4.07	0.31	1.26
U	3.93	0.43	1.69
M:Qualitative	3.29	0.26	0.86
Indicator's Value:	3.76	1.00	3.81
D5: M	3.53	0.31	1.09
U	3.40	0.43	1.46
M:Qualitative	2.69	0.26	0.70
Indicator's Value:	3.21	1.00	3.26
D6: M	3.93	0.31	1.22
U	3.71	0.43	1.60
M:Qualitative	3.50	0.26	0.91
Indicator's Value:	3.71	1.00	3.72
D7: M	3.64	0.31	1.13
U	3.50	0.43	1.51
M:Qualitative	3.08	0.26	0.80
Indicator's Value:	3.41	1.00	3.43
D8: M	3.87	0.31	1.20
U	3.93	0.43	1.69
M:Qualitative	4.07	0.26	1.06
Indicator's Value:	3.96	1.00	3.95

Appendix 2.3 Weighting Applied to Indicator Values.

	Feedback Mean Value:	Weighting Applied:	Value with Weighting:
A1: M	3.13	0.31	0.97
U	3.07	0.43	1.32
M:Quantitative	4.27	0.13	0.56
M:Qualitative	3.50	0.13	0.46
Indicator's Value:	3.49	1.00	3.30
A2: M	2.93	0.31	0.91
U	2.80	0.43	1.20
M:Quantitative	3.73	0.26	0.97
Indicator's Value:	3.15	1.00	3.08
A3: M	2.80	0.31	0.87
U	2.87	0.43	1.23
M:Quantitative	4.43	0.26	1.15
Indicator's Value:	3.37	1.00	3.25
A4: M	3.00	0.31	0.93
U	3.00	0.43	1.29
M:Quantitative	4.00	0.26	1.04
Indicator's Value:	3.33	1.00	3.26
A5: M	3.60	0.31	1.12
U	3.73	0.43	1.60
M:Quantitative	4.73	0.26	1.23
Indicator's Value:	4.02	1.00	3.95
A6: M	3.36	0.31	1.04
U	3.55	0.43	1.53
M:Qualitative	4.36	0.26	1.13
Indicator's Value:	3.76	1.00	3.70
A7: M	2.71	0.31	0.84
U	2.86	0.43	1.23
M:Quantitative	3.71	0.26	0.96
Indicator's Value:	3.09	1.00	3.03
B1: M	3.60	0.31	1.12
U	3.60	0.43	1.55
M:Quantitative	4.33	0.26	1.13
Indicator's Value:	3.84	1.00	3.79
B2: M	4.00	0.31	1.24
U	3.64	0.43	1.57
M:Qualitative	3.86	0.26	1.00
Indicator's Value:	3.83	1.00	3.81
B3: M	2.77	0.31	0.86
U	3.00	0.43	1.29
M:Qualitative	3.46	0.26	0.90
Indicator's Value:	3.08	1.00	3.05
C1: M	3.79	0.31	1.17
U	3.71	0.43	1.60
M:Qualitative	3.93	0.26	1.02
Indicator's Value:	3.81	1.00	3.79
C2: M	3.73	0.31	1.16
U	3.33	0.43	1.43
M:Qualitative	3.79	0.26	0.99
Indicator's Value:	3.62	1.00	3.57