OVERVIEW

Communities around the world are responding to the Earth Summit challenge that they produce Local Agenda 21 plans to help them reach consensus on a more sustainable future for their people, environment and economy. A key problem facing communities grappling with this task is how to define, and understand, their current levels of sustainability, and having done so, how best to measure progress as they begin to implement sustainable development goals. Increasingly, attention is turning to the use of local level sustainability indicators as a way of monitoring both conditions and goals.

Obviously, such indicators have to be designed so they provide clear measurements of local conditions and trends. This means, of course, that the indicators must take the pulse of all aspects of sustainability. Traditionally, attempts have tended to over-concentrate on the environment, to the detriment of equally crucial economic, social equity and quality of life aspects. More critical, perhaps, is the fact that the linkages which exist between different indicators are frequently overlooked. Identifying these will help communities get under the skin of local sustainability issues and allow them to gain a more genuine awareness of the steps needed to reverse adverse trends. It will also help cement a much firmer understanding of the inter-dependence of the environment, social conditions and aspirations and the activities of business and the market. In this way, indicator measurements have the potential to become powerful drivers of sustainability change, binding sectors together in a shared understanding of their relationship with each other, and their individual place in the total picture.

For all of this to bite, it is even more important to ensure that indicator monitoring is taken forward as part of a well-thought through planning process and delivery system. In particular, it is vital to construct mechanisms for fostering community ownership of the process. Engaging stakeholders in the design and measurement of indicators, and the implementation of follow up action, are key areas, often missing from Local Agenda 21 exercises.

The community of Lancashire, in the North West of England, has a long tradition of excellence in the field of sustainable development planning and implementation. Lancashire’s attempts to devise a community-based strategy, focused around a core set of sustainability indicators, forms the basis for presenting a model for integrating the environmental, social and economic aspects of planning for a more sustainable future.

The paper outlines briefly the international and national context for Local Agenda 21 planning and the role of sustainability indicators in such planning, before looking at the background to the Lancashire experience. It then explores and presents, in more depth, the technical and procedural aspects of that experience. In particular, the following areas are covered.

Firstly, the methodologies employed since 1990 to involve citizens, stakeholder interests and institutions, business and the voluntary sector in a concerted Local Agenda 21 planning process are considered. The use of these methodologies to construct, measure, analyze and present a suite of community based sustainability indicators forms the core of the paper. Special attention is given to the ways in which environmental, social and economic indicator suites have been integrated to illuminate deep-seated relationships at work beneath the surface of conventional analysis, producing insights which are forging new alliances for co-operative change. How the indicator results are being used to redefine and redirect policy and action programmes is dealt with in the concluding sections. The scope for harnessing indicator results to influence behaviour patterns and responsibilities for driving sustainability change is also considered.

THE AUTHOR
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INTRODUCTION

This paper is organized into five sections. The first outlines the national and international context within which local government in the UK is tackling Local Agenda 21 strategies, which are, in turn, the structural framework for local sustainability indicators. Part II explores the background to the development of such indicators internationally, and in the UK. Part III describes how one British local authority, Lancashire County Council, has been developing its Local Agenda 21 framework by using a specific sustainable development planning methodology, while Part IV looks specifically at the role that sustainability indicators are playing in this process, and Part V at how the results are being used to promote sustainability in the locality.

PART I: THE CONTEXT FOR LOCAL SUSTAINABILITY INDICATORS

“Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and co-operation of local authorities will be a determining factor in fulfilling its objectives. Local authorities construct, operate and maintain economic, social and
environmental infrastructures, oversee planning processes, establish local environmental policies and regulations, and assist in implementing national and sub-national environmental policies. As the level of government closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development”.

(UNCED 1992)

“Five years ago, the Rio Summit launched Agenda 21. Since then, 70% of our local authorities have been inspired to ‘think global, act local’ through Local Agenda 21. I want all local authorities in the UK to adopt Local Agenda 21 strategies by the year 2000”.

(Blair T 1997)

International Context

1.01 As the democratically elected representatives of their communities, local authorities are best placed to play the dominant role in co-ordinating local action on sustainability. They can act for, inform and engage citizens in ways that the business, voluntary and other sectors cannot. Wide-ranging powers for planning, regulation, stewardship and intervention ranging through core aspects of the sustainability equation like the environment, public health, social welfare, education, the economy and land use strengthen this influence considerably. Local authorities who are in tune with these obligations and opportunities will have established good working links with their electorates and with key actors from the business and voluntary communities. Combined with local government’s democratic, information and educational roles, open-ended partnerships like these are vital to any municipality wishing to succeed with the new sustainability agenda.

1.02 In many ways, Local Agenda 21, and the development of associated tools like sustainability indicators, are logical progresses of the functions and processes exercised by local authorities to deliver their statutory duties, policies and services. But these new techniques go much further than this. They reflect the growing realization that local authorities have a much wider responsibility to their communities as enablers and leaders on sustainable development (Stewart J & Hams T 1991; Taylor D et.al. 1994). This pro-active, community-based role is increasingly seen as fulfilling the more specific goals of improving the sustainability performance of the authority and the area it administers (Taylor D & Lusser H 1998), and of engaging key stakeholders in the task of achieving these goals. As the level of government closest to most of the issues, local authorities are committed to their localities and should be aware of local diversity, strengths, weaknesses and opportunities. Social, economic and environmental subsidiarity lies most effectively in our city and county halls (Taylor D 1996).

1.03 The significance of local government in spearheading the drive towards a more sustainable future was given international endorsement, focus and a rationale at the United Nations Conference on the Environment and Development (the Earth Summit) held in Rio de Janeiro in 1992. Agenda 21, the main output from Rio, lists the actions expected from world governments and key sectors for the achievement of sustainable development (UNCED 1992). The resulting 500 plus page document contains many hundreds of actions and commitments, over two thirds of which cannot be implemented without municipal commitment and co-operation (Local Government Management Board 1992). Chapter 28 of Agenda 21 calls upon municipalities everywhere to create a dialogue with their communities to produce Local Agenda 21 strategies; at a stroke locking local government into a global network for sustainability change.

1.04 Agenda 21 makes it clear that these local strategies must meet a number of basic requirements:

- The community in its widest sense must be involved in all aspects and stages of the process;
- There must be a role for women and youth in decision-making;
- The strategy and programme must be founded on a thorough understanding of local conditions;
- There must be an action plan which sets targets for improvements and time-scales for achieving them;
- Indicators must be established so that progress can be judged.

1.05 This global framework was augmented for UK local authorities by the European Commission in its Fifth Environmental Action Programme, which appeared at the same time as the Earth Summit (CEC 1992). This also proposes a central sustainable development role for local councils, emphasized by the fact that forty percent of its recommendations are targeted at this tier of government (Local Government Management Board 1993a). The Fifth Action programme is based on shifting emphasis away from end-of-pipe regulation towards prevention, based on the principle of
shared responsibility. Specifically, local and regional authorities are seen to have a decisive role in monitoring local sustainability - “Administrations need to critically analyze their own operations and (communicate) information to the public”. Local authorities are also charged with furnishing their communities with improved, regular access to information about local sustainability conditions.

UK Context

1.06 In the UK, central government has also recognized the value of local government action. The national sustainable development strategy endorses and encourages the role in policy terms (HMSO 1994), and the support is re-stated in the new government’s recent consultation paper for reviewing the strategy (Department of the Environment, Transport and the Regions 1998). The prime minister’s personal pledge on Local Agenda 21, made to the UN General Assembly held to consider progress with Agenda 21, quoted at the head of this paper cemented this support in place.

1.07 In a more practical sense, national and local government have co-operated since the Earth Summit to produce a range of policy and action guidance on tools and techniques to help local authorities deliver sustainability. Much of this has been provided by the Local Government Management Board (LGMB) who co-ordinate the UK Local Agenda 21 campaign. LGMB also employs a national co-ordinator to promote the campaign. Approaches to the production of Local Agenda strategies and to the design and use of sustainability indicators have featured prominently and regularly in the documentation (see LGMB 1993b, 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1997, 1997 & 1998). In particular, advice has been issued outlining how to approach strategy preparation (Box A), and identifying what the key components of a strategy should be (Box B). Guidance has also been offered on Local Agenda 21 objectives and strategy content (DETR, LGA and LGMB 1998) in the UK, with the primary goal being to ensure a better quality of life for everyone now, and for generations to come, through:

- Social progress which recognizes the needs of everyone;
- Effective protection of the environment;
- Prudent use of natural resources;
- Maintenance of high and stable levels of economic growth and employment.

**BOX A: THE SIX STEP APPROACH TO LOCAL AGENDA 21**

**INSIDE THE LOCAL AUTHORITY**

- Managing and improving the council’s sustainability performance;
- Integrating sustainability issues into council policies and activities.

**OUTSIDE THE LOCAL AUTHORITY**

- Awareness-raising and education;
- Consulting and involving the wider community and the general public;
- Working in partnership with others;
- Measuring, monitoring and reporting.

Source: Local Government Management Board (1994)

**BOX B: CORE ELEMENTS OF A DYNAMIC LOCAL AGENDA 21**

A vision statement to:

- Identify the main sustainability issues and aims for the area;
- Set explicit objectives for both the state of the environment, including biodiversity, and for indicators of the quality of life in the area.

An action plan, showing which organizations or sectors will take what actions (and by when) to work towards these objectives. Actions should be:
Concrete, explicit and challenging;
Realistic and practical;
Firmly ranked in priority.

Implementation mechanisms, covering:

- How the actions will be made to happen;
- How performance and achievements will be assessed;
- How the strategy will be reviewed and up-dated.

Source: DETR, LGA and LGMB (1998)

1.08 The abundance and range of support and practical advice is one of the main reasons why UK councils are developing sustainability practices. Surveys show that of nearly 500 councils, over 70% are committed to Local Agenda 21 preparation, with many well-advanced in the process (Tuxworth B 1996). Box C provides a summary of practice with regard to some of the individual components (Tuxworth B and Thomas E 1996). The picture revealed is noteworthy, because the survey was conducted only a little over three years after the Rio conference. Like municipalities the world over, UK local government is pressed to deliver its statutory competences, never mind voluntary actions like Local Agenda 21. Funding and staff levels have both fallen during the eighties and nineties, yet the challenge is still being taken-up.

BOX C: LOCAL AGENDA 21 IN THE UK

OF THE 266 LOCAL AUTHORITIES WHO RESPONDED:

- 90% were committed to Local Agenda 21;
- 76% were intending to produce a strategy;
- 40% were due to do so by the end of 1996;
- 60% had held internal awareness-raising events;
- 33% had appointed new staff to work on the process;
- 44% had approved a corporate policy;
- 42% had integrated sustainability principles into corporate policy and activity;
- 70% had instituted a public awareness/education programme;
- 45% were collaborating in a community forum;
- 64% had monitored environmental indicators;
- 37% were developing sustainability indicators with their communities.


PART II: THE ROLE AND USE OF LOCAL SUSTAINABILITY INDICATORS

"Indicators are a measurement tool that can be used cost-effectively to permit any interested stakeholder to evaluate, on an on-going basis, the performance of a community relative to its established performance targets and commitments. (They are) measures of conditions that are accepted by a community as valid criteria for evaluating change".

(ILCEI 1996)

"Indicators are bits of information that highlight what is happening in a large system. They are small windows that provide a glimpse of the ‘big picture’. They tell us which direction a critical aspect of our community, economy or environment is going: forward or backward, increasing or decreasing, improving or deteriorating, or staying the same".
The Development of Sustainability Indicators

2.01 Using indicators to monitor sustainability is a relatively recent phenomenon, though efforts to measure the individual components of the environment and economy have a longer pedigree. At the international level, notable examples of indicator development include the urban indicators project of the UN Conference on Human Settlements (UNCHS 1996), the UN Development Programme’s human development reports (UNDP 1996), plus the various global indicator up-dates from bodies like the World Resources Institute (1994), Worldwatch Institute (Brown L et. al. 1997), World Bank (1996) and the OECD (1994). Important work has also been developing in parallel to understand and quantify the ecological footprint made by national activity on the sustainability resources of the earth (e.g. Wackernagel M & Rees W 1996; Wackernagel M, Onisto L et. al. 1997; Wackernagel M 1998).

Municipal attempts to monitor sustainability trends were stimulated by work in a number of countries to assess the state of the national environment (e.g. Environment Canada 1991; Department of the Environment 1992). In the UK, the first analyses to monitor environmental indicators appeared at about the same time (Elkin T 1989; Lancashire County Council 1991), and it was these pioneering efforts that were more influential in leading to the rapid spread of the technique by local councils.

2.02 It has been claimed that these early attempts were characterized by the use of indicators for “multiple and sometimes vague or contradictory objectives” (Brugmann J 1997). This absence of a clear framework, and lack of clarity in use and purpose, resulted in confusion about the nature of sustainability in council and community alike. No matter how well developed, collected and analyzed they are, indicators will not deliver their full benefit unless harnessed to a methodical planning process, rooted in the community ethic of Local Agenda 21. In this context, it can be argued that sustainability indicators at the local level are best employed to track performance following an action plan, and as a guide to positive change, rather than for technical assessment during plan preparation and to raise public awareness. However, it can also be argued that it is actually best to promote these roles within a coherent planning framework. In the Lancashire case dealt with below, for example, indicators have been used successfully in this way to perform four key roles (Pinfield G 1997):

- Technical and managerial;
- Political objective setting;
- Public communication and participation;
- Monitoring the action plan once it is being implemented.

2.03 As a core element in the developmental stages of sustainability planning, it has been found in Lancashire that indicators have been instrumental in binding initially suspicious stakeholders and members of the public into a productive, long-term process, in maintaining momentum and in rendering complicated issues and relationships more easily understood and handled. Consensus is also firming up in the UK on a number of key themes regarding the value of sustainability indicators (Taylor D 1997). Firstly, indicators are essential to planning for, and delivering, a more sustainable future at every level, from the community to the planet. But they must encompass the social and quality of life aspects of sustainability, as well as the more traditional environmental areas. The trick is to fix upon the right indicators - meaning they have to be relevant for the purpose, and the data have to be available, collectable and capable of conversion into structured information. That is, information which is understandable, useful and readily convertible into policy and improvement targets. The comparison of indicator results with target, reference or threshold values is also imperative.

2.04 Ideally, a raft of indicators should combine simple, ‘resonant’ ones, capable of grabbing and holding public imagination, with the more technically detailed variants which are necessary to unlock particularly intricate policy issues. Linkage is a further point on which there is wide agreement. Indicator measurements are not a great deal of use on their own. To get the most from what are otherwise just interesting facts, it is necessary to integrate different indicators so as to untangle the interactions which characterize the complexities of the sustainability equation. As one commentator has put it “It’s rare for a single indicator to say much on its own. Meaning comes from the pattern indicators make with each other, just as a word or chord has little meaning without the rest of the sentence or musical passage” (Levett R 1996). Tackling each of these themes formed an important part of the Lancashire experience which features in Parts III and IV of this paper.

The UK Sustainability Indicators Research Project
2.05 In order to assist local authorities promote LA21 strategies with their communities, the LGMB commissioned a research project in 1993 to identify and test sustainability indicators for local use (Local Government Management Board 1995a & 1995b). The project was divided into three phases:

- Research into best practice internationally and nationally, development of a menu of preliminary indicators, selection of councils to pilot the menu, initial report and guidance;
- Piloting of the preliminary indicators, refinement and feed-back;
- Production of the final report and guidance, national launch.

2.06 For the first phase, a framework for developing local indicators was defined. This took as its starting point the UN Environmental Programme definition of sustainable development, namely "Improving the quality of life while living within the carrying capacity of supporting eco-systems". This emphasizes two of the key components of sustainability; the importance of quality of life for the human condition and the need to protect the ability of the earth to support and provide a critical level of natural resources to support all life and the overall health of global systems. These two concepts became the dominant themes for the definition of more detailed sub-themes under which indicators could be developed. In turn, the sub-themes became the sustainability goals which indicators grouped under them would be seeking to measure and monitor.

2.07 The sub-themes, of which there were thirteen, themselves can be said to characterize the nature of a sustainable local community (see Box D). As such, they have also come to stand as key objectives for UK Local Agenda 21 strategies. A total of 101 indicators were identified under the sub-themes, and these were presented to the pilot authorities for testing. Lancashire County Council was a pilot authority, and used the opportunity to work with its stakeholders and community to progress its own activity on sustainability (Part IV). As a result of the piloting phase, the indicators were refined, new ones were added and some replaced.

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**BOX D: CHARACTERISTICS OF A SUSTAINABLE COMMUNITY**

- Resources are used efficiently, waste is minimized, materials are recycled and cycles are closed;
- Pollution is limited to levels which do not cause damage to natural systems and public health;
- The diversity of nature is valued and protected;
- Everyone has access to adequate food, water, shelter and fuel at reasonable cost;
- Everyone has the opportunity to undertake satisfying work in a diverse local economy;
- The value of unpaid work is recognized and payment for work is both fair and fairly distributed;
- Health is protected by services which emphasize the prevention of illness as well as care for the sick;
- Access to facilities, services, goods and other people is not achieved at the expense of the environment or limited to those with cars;
- People live without fear of crime or persecution on account of their race, gender, sexuality or beliefs;
- Everyone has access to the skills, knowledge and information needed to play a full part in society;
- All sections of the community are empowered to participate in decision-making;
- Opportunities to participate in culture, leisure and recreation are readily available to all;
- Buildings, open spaces and artifacts combine meaning with beauty and utility, settlements are human in scale and form, and diversity and distinctive local features are valued and protected.

Source: after Local Government Management Board (1995a)

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**PART III: SUSTAINABLE DEVELOPMENT PLANNING IN LANCASHIRE COUNTY, UK - A FRAMEWORK FOR SUSTAINABILITY INDICATORS**

"At open meetings in communities… I have found that voters are willing to go much further to meet the crisis than most politicians assume is possible - but they are waiting for leadership. Indeed, I am convinced they are hungry to hear hard truths and are nearly ready to make the all-out effort necessary for an effective response".

(Gore A 1992)

"In Lancashire we have created a dialogue with our citizens and a partnership with their representative organizations. We have established the facts about the environmental conditions that prevail in our area. We have discussed and debated and arrived at a consensus for action…If this programme is to succeed we must all play a part. As citizens we can change the way we live our lives if we are given the impetus to do so. The Lancashire Environment Forum will provide that impetus".

(Lancashire Environment Forum 1993)
Lancashire - A Snapshot

3.01 Lancashire is one of 39 English county councils. It lies in north west England, covering just over 300,000 hectares, with a population of 1.4 million. Because it is situated at the junction of highland and lowland Britain, and runs from the coast to the central Pennine watershed, the county has a diverse environment. Lancashire’s former prosperity was based on textiles, coal mining, engineering and pastoral farming. Apart from the latter, the heavy industries that established Lancashire as a cradle of the Industrial Revolution have largely disappeared. So, too, has much of the extensive legacy of visibly polluted and degraded land it left behind. However, much that is less visible remains in the form of contaminated sites, a nineteenth century infrastructure for water supply and waste water disposal, and a residue of derelict land and buildings constituting a storehouse of problems awaiting solution.

3.02 Since 1945, primary and heavy manufacturing activity has been replaced by precision and light engineering (especially in the military, defence and vehicle sectors), service industries and tourism. As far as major processing industry is concerned, Lancashire has only one large chemical plant, two nuclear power stations and a cement manufacturer. In common with other regions, the recession of the 1980s bit hard, but recovery is underway. Unemployment is around the national average, though there are significant pockets where it makes-up a fifth of the work-force. These coincide with areas of social deprivation and poor health, where 7% of the county’s population live (Lancashire County Planning Department 1994).

3.03 Local government services are provided by two tiers. For Lancashire as a whole, the county council is responsible for strategic services like education, social services, transportation and land use planning, waste licensing, strategic recreation and libraries. Local services like municipal housing, environmental health, waste collection, litter control, local planning, the control of most development and open space maintenance are the province of twelve district councils.

Origins of the Lancashire Initiative

3.04 Lancashire County Council launched its initiative to respond to the environmental challenges referred to above in 1989, prompted by five main factors. Firstly, environmental concerns were high on the public agenda in the UK at the end of the 1980s. The council not only shared these concerns, but saw that as the democratically elected body for over a million citizens it had a responsibility to respond to public opinion and to explore the scope for action with, and on behalf of, its community. Secondly, the council is the largest employer in Lancashire, with a work-force of 30,000 and an annual turnover of £1 billion. The environmental impact of this expenditure, of the services being provided and the policies being implemented by the council, were considerable. It was clear the council ‘had to put its own house in order’.

3.05 Related to this, was the question of how the council was managing its environmental responsibilities, and the extent to which issues were being addressed corporately, and consistently. A review revealed that this was not the case. Fourthly, the same position applied outside county hall. No single agency, or alliance, had regard for the overall environment, or was taking a strategic view of its many elements and connectivities. Different agencies and sectors were looking after their own interests and responsibilities, coming together only when a specific need arose, usually when a problem had got out of hand. Nobody was saying, ‘Here is a total environment and we need to work together to protect and sustain it for the future’. Instead, there was often conflict. This was best illustrated by a long-running battle during the second half of the 1980s where the council and local communities campaigned against the water and sewage company for more stringent treatment of the waste-water being discharged into the bathing waters off Blackpool, Fleetwood and Morecambe (House of Commons Environment Committee 1990; Taylor D. 1995). This episode more than any other convinced the then leader of the council of the need for change and new mechanisms, though she was also influenced by the political advantage that can accrue from championing local sustainability causes.

Sustainable Development Planning - A Basis for Local Agenda 21

3.06 Thus it was decided that a well-planned and co-ordinated initiative was needed and that this must be based on a strategic planning approach, founded in turn on a solid, well-analyzed, information base. This is outlined below, though the elements are described in greater detail in the Local Agenda 21 Planning Guide launched by the International Council for Local Environmental Initiatives at the 1996 Habitat II conference in Istanbul (ICLEI 1996). The guide incorporates the
experience of fourteen municipalities around the world (Lancashire included), who took part in the ICLEI Model Communities Programme (MCP), between 1993 and 1997.

3.07 The sustainable development planning mechanism which arose from the MCP combines the principles and methods of corporate, community planning into a strategic planning methodology. It calls for pro-active partnership between local authority and stakeholders in harnessing the intellectual, social and economic resources of local people to define a vision for the future and a way of achieving it. There are five strategic components in the approach, summarized below and in Box E:

I. **Partnerships** - Establishing an organizational structure for sustainable development planning to involve key stakeholders, and the public, is fundamental to developing a Local Agenda 21 strategy. The first thing the partnership has to do is define a shared vision of the kind of future it wants to see. This involves the council in deciding who its key partners are, in discussions about the best way to involve them and in broader sustainability visioning. Techniques in common use for the latter, include future search conferencing and, guided visualization.

II. **Community-Based Issue Analysis** - Identifying the issues that have to be addressed if the vision is to be realized is the next step. This is an information gathering and analysis process. However, the assessment is not just a technical exercise handled by experts and officials. For it to meet the community ethic of Local Agenda 21, it must stem from an understanding of local perceptions and prevailing conditions, trends and concerns. Technical analysis is made only when these are established, understood and consensus has emerged. Focus group research is a particularly effective tool for gaining this knowledge.

III. **Action Planning** - Though the heart of the whole process, this is a means to an end, not the end itself. Consensus is required again, this time on the goals, measurable targets, triggers and time-scales for implementing the specific measures needed to meet the vision and the analysis. It is also essential that resources are identified and responsibilities are allocated.

IV. **Implementation and Monitoring** - This is a vital stage requiring careful thought as to the mechanisms for implementing and monitoring action plan measures. New partnerships and alliances may be required, accompanied by institutional reform. Internal management systems may need re-engineering to maximize the council’s ability to play its part more effectively. Areas like co-ordination with existing policies, recasting corporate objectives, changing budget priorities, staff and politician training will be particularly important.

V. **Evaluation and Feedback** - This phase provides information for the stakeholder partnerships and the public about progress, calling for target-based indicators and periodic reports. These can help groups and individuals to refocus action and behaviour. At the end of a suitable period, there is a feed-back loop to stage 2, so that new issues can be considered and any need for change to the existing vision can be identified.

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**BOX E: THE ELEMENTS OF SUSTAINABLE DEVELOPMENT PLANNING**

<table>
<thead>
<tr>
<th>PARTNERSHIPS</th>
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<tbody>
<tr>
<td>Establish an organizational structure for LA21 planning involving partners. Define a shared vision.</td>
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</table>

<table>
<thead>
<tr>
<th>COMMUNITY-BASED ISSUE ANALYSIS</th>
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<tbody>
<tr>
<td>Identify issues to be addressed to achieve the vision. Do detailed assessments of priority problems and issues.</td>
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<table>
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<tr>
<th>ACTION PLANNING</th>
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<tbody>
<tr>
<td>Agree goals, set targets &amp; triggers and create strategies &amp; commitments to achieve them. Formalize into action plan.</td>
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<table>
<thead>
<tr>
<th>IMPLEMENTATION AND MONITORING</th>
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<tbody>
<tr>
<td>Create partnership structures for implementation &amp; internal systems for compliance. Monitor activities and changes.</td>
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<table>
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<tr>
<th>EVALUATION AND FEEDBACK</th>
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<tbody>
<tr>
<td>Periodic performance evaluations using target-based indicators. Repeat issue analysis and/or action planning at specified trigger thresholds.</td>
</tr>
</tbody>
</table>
Periodic performance evaluations using target-based indicators. Repeat issue analysis and/or action planning at specified trigger thresholds

Source: ICLEI (1996)

Partnerships

3.08 In Lancashire, it was recognized that building consensus through partnership had to lie at the core of the whole approach. To construct this from the outset, a meeting was called to assess support for a consensual approach to sustainable development. Sixty-five stakeholder groups attended from all sectors of the community and formed the Lancashire Environment Forum (LEF), based on the terms of reference set out in Box F. Membership today stands at nearly a hundred organizations, drawn from central and local government, business, commerce and trades unions, academic establishments and youth services, health, welfare and social bodies, and voluntary and community groups. The LEF meets once or twice a year, but has appointed a twenty-strong steering group to ensure progress during intervening periods.

3.09 The forum is a multi-sectoral round-table, encompassing many interests and points of view. This has assisted a move away from narrow, sometimes entrenched positions, towards a better understanding of the views of all stakeholders, the issues involved and how collaboration might help to deal with them. Linkage with the council’s formal decision-making processes is achieved by having the council leader chair the LEF, and by regular reports form the forum to the council’s central policy committee. About a third of the forum’s members represent specific interest groups, while citizen and community group participation has been handled via general publicity, schools liaison, a Young People’s Forum, an Anti-Poverty Forum, access to LEF member networks, public events, focus groups and exhibitions. Recently, it has been acknowledged that women and youth are under-represented, and steps are in hand to rectify this, as well as to strengthen participation at the neighbourhood level.

BOX F: TERMS OF REFERENCE OF THE LANCASHIRE ENVIRONMENT FORUM

1. To provide a forum for the discussion and dissemination of all matters concerning the state of Lancashire’s Environment.
2. To secure co-operation, co-ordination and action between appropriate agencies and organizations on initiatives aimed at protecting and improving the county’s environment.
3. To give assistance and guidance to the preparation of a state of the environment report and an environmental action programme and to ensure the widest possible support for subsequent implementation and monitoring.
4. To establish links with, and the co-operation of, other agencies, organizations and authorities on issues which affect the overall quality of Lancashire’s environment in a regional and national context.
5. To increase the awareness of government, the EC, industry, commerce and the public and private sector agencies and the public of Lancashire, to the environment of the county and of the need for its protection and improvement.


Community-Based Issue Analysis

3.10 At the heart of the LEF process, lies the completion of regular, and comprehensive, audits of sustainability conditions in the county. Their purpose is two-fold:

- To help raise the awareness of Lancastrians about environmental, social and economic conditions where they live;
- To provide information for policy and action for sustainable development.

3.11 The first audit (Lancashire County Council 1991), reported on the state of several hundred largely environmental indicators (see Box G). It identified and assessed the quality of natural and man-made resources and analyzed how these were being influenced by human activity and natural processes. The analysis concluded with an identification of the issues that had to be addressed to protect the resources in question for future generations. Data were taken from existing, publicly-available sources, providing scientifically accurate material. The audit was entered into a Geographical Information System (Taylor D 1992) and published in three versions:

- A technical report for informed readers, policy and decision-makers, colleges and secondary schools;
- A summary for the public and junior schools;
• A leaflet of the key findings and issues for the community in general.

3.12 Public access to the information became a core prerogative of the programme. The rationale for this was to publicize the initiative, gain public confidence and enable people to make more informed choices and decisions. A major aim of the public awareness campaign was to gather views on the issues. These were used to help select priority actions and targets. The process involved:

• Circulation of the audit documents and leaflets (40,000) to libraries, schools, information centres and voluntary networks;
• A road-show during national environment week in all main town centres;
• A media campaign, tailored to each locality;
• A work-pack for every school;
• Creating a publicly available GIS database of green audit material.

BOX G: TYPOLOGY OF INDICATORS REPORTED IN THE FIRST LANCASHIRE AUDIT

<table>
<thead>
<tr>
<th>Structure</th>
<th>Typology of Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology, soils, relief, climate, population.</td>
<td>STRUCTURE - Geology, soils, relief, climate, population.</td>
</tr>
<tr>
<td>Emissions and levels of smoke, SO2, NOx, lead-in-air, radiation, ozone, acidity, vehicular emissions, industrial processes, odour complaints.</td>
<td>AIR - Emissions and levels of smoke, SO2, NOx, lead-in-air, radiation, ozone, acidity, vehicular emissions, industrial processes, odour complaints.</td>
</tr>
<tr>
<td>Quality of rivers and estuaries, bathing and coastal waters, ground-water and drinking water supplies, location and nature of pollution sources.</td>
<td>WATER - Quality of rivers and estuaries, bathing and coastal waters, ground-water and drinking water supplies, location and nature of pollution sources.</td>
</tr>
<tr>
<td>Arisings by type, source and location, disposal and treatment, litter.</td>
<td>WASTE - Arisings by type, source and location, disposal and treatment, litter.</td>
</tr>
<tr>
<td>Sources, types, number and distribution of complaints.</td>
<td>NOISE - Sources, types, number and distribution of complaints.</td>
</tr>
<tr>
<td>Primary non-renewable and renewable sources in the county, levels and trends of energy use by type.</td>
<td>ENERGY - Primary non-renewable and renewable sources in the county, levels and trends of energy use by type.</td>
</tr>
<tr>
<td>Satellite analysis of land cover, farm type and production, pollution incidents, fishery exploitation.</td>
<td>LAND &amp; AGRICULTURE - Satellite analysis of land cover, farm type and production, pollution incidents, fishery exploitation.</td>
</tr>
<tr>
<td>Main habitats and species, incidence and distribution, threats and trends, protection measures.</td>
<td>WILDLIFE - Main habitats and species, incidence and distribution, threats and trends, protection measures.</td>
</tr>
<tr>
<td>Scenic quality, landscape protection, degradation and enhancement, townscape quality, archaeological and heritage resources, urban enhancement measures.</td>
<td>LANDSCAPE &amp; TOWNSCAPE - Scenic quality, landscape protection, degradation and enhancement, townscape quality, archaeological and heritage resources, urban enhancement measures.</td>
</tr>
<tr>
<td>Extent and use in urban and rural areas, management regimes and protection, threats and impacts.</td>
<td>OPEN SPACE - Extent and use in urban and rural areas, management regimes and protection, threats and impacts.</td>
</tr>
<tr>
<td>Extent and use of the network by mode, trends and impacts.</td>
<td>TRANSPORT - Extent and use of the network by mode, trends and impacts.</td>
</tr>
</tbody>
</table>

Source: Lancashire County Council (1991)

Action Planning

3.13 To ensure that all stakeholders had an opportunity to influence the action plan, the LEF established specialist working groups. These operated under the overall control of the forum as multi-sector round-tables, with a mix of people, including experts and lay people. Each group had a detailed brief to prepare proposals for its topic areas, and these were allocated on the basis of audit issues of concern that were most closely related. The four working groups were:

• SWG 1 - air, energy, transport, noise;
• SWG 2 - water, waste, land & agriculture;
• SWG 3 - wildlife, landscape, townscape, open-space;
• SWG 4 - education & public awareness.

3.14 Over a hundred individuals participated over a nine month period. This culminated in a joint inter-active day when all groups presented, and defended, their proposals. A draft action plan containing some two hundred measures (Box H) emerged which was subsequently endorsed by the LEF, after a further round of general consultation. Plan measures are based on the goal of continuous improvement in environmental performance, and each identifies a time-scale for compliance, a target for achievement and, where possible, quantified levels for improvements.

BOX H: ACTION PLAN STRATEGIC MEASURES
PARTNERSHIP FOR ACTION - contains general proposals and targets concerning the implementation and administration of the programme and for keeping it under review.
GLOBAL WARMING - contains proposals and targets for action to help reduce Lancashire’s greenhouse gas contribution.
REVIVING TOWNS - contains proposals and targets to improve the structure and function of principal towns and settlements as a contribution towards urban sustainability.
CLEANER AIR - contains proposals and targets to reduce pollution levels from homes, industry, transport and other sources.
CLEANER WATER - contains proposals and targets to reduce demand and improve quality.
PROTECTING LAND - contains proposals and targets to conserve and make the most efficient use of land and tackle pollution problems affecting land.
REDUCING WASTE - contains proposals and targets to minimize waste production and increase reclamation, reuse and recycling.
CONSERVING WILDLIFE & COUNTRYSIDE - contains proposals and targets to safeguard critical natural capital, important landscapes and biodiversity.
RAISING AWARENESS - contains proposals and targets to enable the whole community to participate in the programme via information, education and practical activities.

Source: Lancashire Environment Forum (1993)

Implementation and Monitoring

3.15 The action plan specified implementing agencies and all LEF members were encouraged to formally adopt the plan and address the measures targetted at them. This was to be done by members incorporating the measures into their own policy mechanisms and delivery programmes. In addition, a range of corporate programme measures were carried forward by the forum in general (see Box J). Priorities included publicizing and promoting the action plan, lobbying for resources and drawing as many people and organizations into the exercise to help implement its proposals.

3.16 After launching the action plan, the LEF established an implementation working group to oversee and review its progress. A detailed analysis was commissioned to assess the degree of implementation and suggest ways to improve this. The review revealed that a number of members were making good progress, but about half were failing to meet their obligations. Action has been put in hand to improve performance, and this is beginning to make a difference, though given that the LEF cannot enforce compliance, it is not surprising that engagement is patchy.

BOX J: CORPORATE ACTION PLAN MEASURES IMPLEMENTED BY THE LEF

- LEAP VIDEO - to outline the action plan in a visual format, aimed at a general audience and potential sponsors. Copies were circulated to all schools and public libraries.
- GO GREEN FOR GOOD - a personal action programme similar to the Global Action plan aimed at every Lancastrians. The plan was mailed to half a million households, asking them to make their own contribution to reducing resource consumption, energy use, travel by car, waste production etc.
- CENTRES OF EXCELLENCE - Nine centres were set up around the county, each backed by LEF partnerships. Each centre promotes the action plan generally, and a specific aspect like business, wildlife, heritage, permaculture, tourism, energy, agriculture and community action in more depth.
- LANCASHIRE-GULU (UGANDA) LINK - a north-south link with a community in northern Uganda, aimed at examining how two different communities can learn from, and share each other’s experience of, Local Agenda 21.
- GOING FOR GREEN - a citizen’s environmental awareness campaign promoted by the UK government. It funds in-depth, pilot neighbourhood level planning and action projects in two contrasting areas, a highly deprived inner city estate and an affluent commuter village.
- LEAF - a fund to stimulate community-based initiatives like LETS, community gardens, parish maps, food co-operatives, car sharing schemes, etc.

Source: Original (1998)

Evaluation and Feedback
The LEF process from 1989 to 1993 was environmentally focussed. While the action plan was being drawn up, the Earth Summit was taking place in Rio. What the Earth Summit identified, and Agenda 21 articulates, is the principle that environmental problems cannot be solved without addressing their root causes and their linkage with economic and social policy. The action plan did not explore these interactions to any significant extent, because it was based on the analysis of environmental indicators in the first audit.

The emergence of Local Agenda 21 decided the LEF to upgrade and customize its programme to embrace all aspects of sustainability. Firstly, the role and perspective of the county council has been widened to bring sustainability into the heart of its policy and operations. This was triggered by the formal adoption of a corporate sustainable development charter (see Box K). Involvement in the ICLEI Model Communities Programme also requires the council to develop ways of designing and providing its services on sustainable development principles. Secondly, the LEF has been extended to embrace all the sectors identified in Agenda 21, particularly the socially and economically disadvantaged, women and young people. Thirdly, more meaningful and permanent ways of engaging and involving the public are being explored and trialled. Finally, attention has shifted to the definition and monitoring of a new raft of sustainability indicators, to further develop the LEF’s perspective and understanding of sustainability. This is dealt with in Part IV.

<table>
<thead>
<tr>
<th>BOX K: LANCASHIRE’S SUSTAINABILITY CHARTER</th>
</tr>
</thead>
</table>

**Commitment:**

- “Lancashire County Council is committed to delivering environmental, social and economic services to all people in the county in ways which will enhance their quality of life whilst protecting the local and global environment”.

- The county council adopts the principles of sustainable development and is committed to working towards sustainable development goals by:

  - Continuing to develop partnerships and to work with the local, national and international community to encourage further action;
  - Monitoring and reporting on progress towards sustainable development goals using indicators in the green audit of Lancashire;
  - Developing a new approach to service planning involving the public and organizations. This will be carried out initially through an international research project in conjunction with ICLEI;
  - Improving the authority’s own performance, within the limits of available resources, in terms of energy and water consumption, use of transport, purchasing and consumption of materials, waste management and raising the awareness of staff”.

Source: Lancashire County Council (1996)

**PART IV: DEVELOPING SUSTAINABILITY INDICATORS IN LANCASHIRE COUNTY, UK**

“Because there is scepticism about whether local government information would, in practice, be unbiased, the indicators most likely to command public confidence would probably need to be understood as independent, meaningful at a local level and reflective of communities’ own knowledge of the issues being addressed. Developing indicators that speak credibly to people’s lives may require new patterns of consultation and negotiation with the public on a genuinely open-ended basis”.

(MacNaghten P et. al. 1995)

“It comes back to local knowledge. People have said that the beaches are more polluted than what they’ve been for years. I could have told you that. Because I’ve seen from upstairs for thirty years and looked out the window every day and seen the colour of the sand change colour. Whereas it used to be like everybody imagines sand, it’s now a browny colour”.

(Focus group member quoted in MacNaghten P et. al. 1995)

**Source Material for Indicators**

4.01 Developing indicators for up-dating the first audit was influenced by four technical sources. A dominant factor was the UK local government project for defining indicators for use in the LA21 process referred to earlier (paras. 2.05 to 2.07). The other two indicator-related influences were research studies commissioned from the University of Lancaster (also a member of the LEF) and a national study carried out by an alliance of environmental pressure groups. The first of these,
conducted by the University’s Environmental Epidemiology Research Unit, reviewed the type of indicators which could be monitored locally to provide a picture of public health, which recommended twenty-one indicators for further investigation (Alexander L 1994). This work also established the availability and accessibility of health-related data and advised on the technical nature of the subject. The work of a group of UK non-governmental organizations who published forty-six environmentally significant indicators which had particular resonance with the public was also taken into account (MacGillivray A & Kayes R 1995).

4.02 But the most influential piece of research was carried out to involve the public in indicator selection by ascertaining their views and perceptions of sustainability issues. With the further assistance of Lancaster University (this time, the Centre for the Study of Environmental Change), a specific study was undertaken into quality of life issues, public concerns and the role that indicators might play in encouraging action to deal with these (MacNaghten P 1995). Focus group methodology was employed, with eight sectors of society being selected. The groups were chosen from different geographical locations and met over two two-hour sessions. Sessions were moderated by an independent university researcher, and all discussion recorded, transcribed and analyzed. Groups comprised:

- Young men on employment training schemes from a suburban estate;
- Suburban mothers with young children living in a medium sized town;
- Long-term unemployed men from an inner-city housing estate;
- Asian women from a predominantly ethnic urban area;
- Retired people living in the countryside and village communities;
- Professional people living in village communities;
- Middle-aged working class women living on urban estates;
- Young professionals from suburban residential areas.

4.03 The results were wide-ranging and had a profound effect on the way that the work of the LEF developed (for a full discussion, see Pinfield G 1995). Indeed, the study has become a standard work of reference for UK activity on local sustainability policy and practice. In general, the exercise was well received by participants and there was a high degree of consensus on the most significant issues to be confronted, irrespective of social class, age or gender. This consensus, plus the strength with which it was articulated, suggests that it was representative of the people of Lancashire as a whole. Box L summarizes the principal findings of the research, while Box M gives a flavour of individual views expressed.

**BOX L: SUMMARY OF FINDINGS OF FOCUS GROUP RESEARCH INTO PUBLIC PERCEPTIONS OF SUSTAINABILITY ISSUES IN LANCASHIRE**

- **IDENTITY WITH PLACE:** People identified strongly with their local place to the scale of their immediate community, sub-community and personal circumstances (the latter particularly in the lower income groups). People talked about the sense of community in their areas, their relationships with others, characteristics of the local area and local environmental issues.

- **CURRENT CONCERNS:** Primary concerns were about jobs, job security, crime, drugs, social cohesion, local environment and amenity. Many spoke fondly of the past, contrasting this with current adverse trends which they could only see getting worse.

- **QUALITY OF LIFE:** Most didn’t use this term but when they talked about their own ‘quality of life’ they highlighted local, personal and non-materialistic issues. For example, having more time to do things, live life at a slower pace, have a more local job, a nicer community and less anxiety. Young and unemployed men found the phrase insulting.

- **RESPONSIBILITY AND AGENCY:** People generally felt responsible for their quality of life but ineffective, particularly in the face of global problems. Wider change from political actions was seen as an unrealistic expectation. There was a deep mistrust of central government and business which were seen as corrupt, out of touch, short-term and biased towards their own, not the public, interest. By extension, local government was subject to the same criticisms. Questions about the genuine commitment of government to sustainability initiatives were raised. There was a strong desire amongst some groups (especially the unemployed) to organize themselves to create change.
• SUSTAINABILITY - Only two out of eighty were familiar with the term ‘sustainability’, but when appraised of its meaning most people identified with its values and priorities, particularly its ‘long-termness’. There was anxiety, but a feeling of powerlessness, in the face of global problems. People felt pessimistic about the future and mistrusted the commitment of institutions to the future.

• INDICATORS: Quality of life could be difficult to measure because many people’s concerns are personal and non-material. However, the main feeling here was that people, especially the lower socio-economic groups, are not being told the truth by government. This relates to their feelings of distrust about the institutions themselves and leads, inevitably, to distrust of the information that they produce.

Source: MacNaghten P et. al. (1995)

BOX M: VIEWS EXPRESSED ON SUSTAINABILITY BY LANCASHIRE PEOPLE

• SUSTAINABILITY - “They keep you in the dark and then come up with terms like sustainability”.
  (Long-term unemployed man)

• INDICATORS - “They only tell us what they want us to know. And that’s the end of that, so you’re left with a fog in your brain, so you just think - what do I have to worry about?”
  (Working class woman)

• QUALITY OF LIFE - What is quality of life? We haven’t got one. All we are is rock bottom. It can’t get any worse”.
  (Unemployed man)

• THE FUTURE - “I can’t see further than another two years, let alone thirty”.
  (Young professional woman)

• JOB SECURITY - “You can’t say your job is secure, can you? You don’t know what is going to happen the day after, the week after”.
  (Working class woman)

• CRIME - “If I go out, its either me or my missus has to stay in. If you both go out there’s a 99% chance of getting robbed. They stand on the corner and watch you”.
  (Unemployed man)

• LOCAL DEMOCRACY - “Most people are bored by local politics. It’s the most boring subject on earth. That’s why councillors get away with what they do, they are not kept in check by the electorate”.
  (Young professional man)

Source: MacNaghten P et. al. (1995)

Selecting and Refining Indicators

4.04 A LEF working group was established to progress the selection and refinement of indicators. It drew up criteria, discussed indicator themes and sources and agreed the format and time-scale for producing the second audit. The selection process is summarized in Box N. Over a hundred indicators had been identified in the UK indicators project. Analysis of the focus group research revealed about seventy issues of public concern. These data, together with the health indicators from the Lancaster EERU and the UK NGO studies were fed into a matrix to ascertain commonalities and linkages. A list of fifty-one indicators was produced, which were then assessed against the following criteria for effectiveness and applicability:

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>THE INDICATOR SHOULD BE…</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPORTANCE</td>
<td>Something important or significant in terms of sustainability at the local level and in Lancashire.</td>
</tr>
<tr>
<td>RELEVANCE &amp; USEFULNESS</td>
<td>Relevant to the concerns and needs of Lancastrians and should help in planning for local sustainability.</td>
</tr>
<tr>
<td>AVAILABILITY</td>
<td>Based on data which is readily available, or capable of being acquired easily through surveys, or the like.</td>
</tr>
<tr>
<td>TRENDS &amp; COMPARISONS</td>
<td>Able to show data over time and space so that trends and/or spatial comparisons can be made.</td>
</tr>
<tr>
<td>RESONANCE</td>
<td>Easily understood by, and communicable to, non-specialists.</td>
</tr>
<tr>
<td>TARGET/ACTION BASED</td>
<td>Able to lead to the setting of targets, or other action to promote local sustainability.</td>
</tr>
</tbody>
</table>
 Forty eight indicators emerged from the assessment meeting all, or most, of the criteria. The next stage was to discuss the draft list with the LEF and several workshops were held to agree a core set. Workshop discussions led to refinement of the indicator sub-themes (see Box O), and forty-three indicators grouped under them.

**4.05**

**BOX O: SUSTAINABILITY INDICATOR SUB-THEMES**

- **More efficient use of resources and less waste:** illustrating household waste management, energy consumption, urbanization rates and the extent of unused land.
- **Lower levels of pollution:** covering levels of nitrogen dioxide in air and water pollution trends.
- **A more diverse natural environment:** areas protected for biodiversity and species diversity.
- **Basic needs for everyone that are met more locally:** availability and accessibility of local services, jobs and clean water.
- **More opportunities for work in a diverse economy:** poverty, employment and income distribution.
- **Improvements in health:** morbidity rates, birth and death rates.
- **Access to facilities, goods, services and people whilst protecting the environment:** transport use, management and provision.
- **Less fear of crime and persecution:** property crime and offences against the person.
- **Access to education, training and information:** school pupils’ performance.
- **People having a say in decision-making:** community and electoral engagement.
- **People valuing the neighbourhoods and communities in which they live:** community satisfaction and individual well-being.

**After Lancashire County Council (1997)**

**Measuring and Presenting Indicators**
4.06 Data gathering and analysis took six months, commencing with a rigorous assessment of data availability and suitability. In the few cases where data proved inadequate, other indicators were substituted. Some indicators were amalgamated, and the result was a final list of thirty-nine (see Box P). A draft version of the resulting sustainability report went for consultation, following which the LEF endorsed and promoted the Green Audit 2 update as a basis for converting the existing action plan from its environmental focus to a Local Agenda 21 strategy based on sustainability principles.

4.07 The indicator report had the following objectives:

- To provide a factual account of the conditions that exist in Lancashire with regard to sustainable development, showing how these vary geographically, have been changing over time and may change in the future;
- To provide an explanation of the inter-relationships and inter-dependencies of the indicators so these can be taken into account in policy-making;
- To help raise the awareness of policy-makers and Lancastrians to sustainability and what it might mean locally;
- To assist in the elaboration of goals for a sustainability action plan for the county and to use the indicators to measure progress in achieving the goals;
- To stimulate action by stakeholders and individuals in pursuit of the goals.

4.08 In order to introduce consistency into the action planning process, indicator results were collated and presented in a standard, policy-directed format. Each of the eleven themes has a general introduction explaining why it is important and relevant to sustainability, and an overview of the indicators selected to monitor it. Every individual indicator analysis then explains why the specific indicator is important, what the analysis of it reveals, how trends have changed, and will change, over time and how it links with other indicators in the green audit update. Maximum use was made in the presentation of the analysis of visual aids like maps (GIS-derived), graphs and diagrams, whilst much of the data has been presented at a very detailed geographical level (census wards in most cases).

---

**BOX P: SUSTAINABILITY INDICATORS FOR LANCASHIRE’S SECOND AUDIT**

<table>
<thead>
<tr>
<th>RESOURCES &amp; WASTE</th>
<th>BASIC NEEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household waste production</td>
<td>Basic services within walking distance</td>
</tr>
<tr>
<td>Household waste recycling</td>
<td>Distance travelled to work</td>
</tr>
<tr>
<td>Household electricity consumption</td>
<td>Homelessness</td>
</tr>
<tr>
<td>Town growth</td>
<td>Prosperity &amp; deprivation</td>
</tr>
<tr>
<td>Derelict land</td>
<td>House prices</td>
</tr>
</tbody>
</table>

**POLUTION LEVELS**

<table>
<thead>
<tr>
<th>POLLUTION LEVELS</th>
<th>HEALTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air quality</td>
<td>Low birth weight</td>
</tr>
<tr>
<td>River quality</td>
<td>Death rates</td>
</tr>
<tr>
<td>Bathing water quality</td>
<td>Years of life lost</td>
</tr>
</tbody>
</table>

**NATURAL ENVIRONMENT**

<table>
<thead>
<tr>
<th>NATURAL ENVIRONMENT</th>
<th>HEALTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected wildlife areas</td>
<td>Long-term illness</td>
</tr>
<tr>
<td>Wildlife diversity</td>
<td>ACCESS TO FACILITIES ETC</td>
</tr>
</tbody>
</table>

**OPPORTUNITIES FOR WORK**

<table>
<thead>
<tr>
<th>OPPORTUNITIES FOR WORK</th>
<th>CRIME &amp; PERSECUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment</td>
<td>School-leavers’ exam results</td>
</tr>
<tr>
<td>Long working hours</td>
<td>Violent crime</td>
</tr>
<tr>
<td>Earnings gap</td>
<td>SCHOOL-LEAVERS’ LITERACY</td>
</tr>
</tbody>
</table>

**DECISION-MAKING**

<table>
<thead>
<tr>
<th>DECISION-MAKING</th>
<th>EDUCATION, TRAINING &amp; INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voter participation</td>
<td>School-leavers’ destinations</td>
</tr>
<tr>
<td>Community group involvement</td>
<td>SCHOOL-LEAVERS’ LITERACY</td>
</tr>
</tbody>
</table>

**VALUING COMMUNITIES**

<table>
<thead>
<tr>
<th>VALUING COMMUNITIES</th>
<th>Source: Lancashire County Council (1997)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community cohesion</td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td></td>
</tr>
</tbody>
</table>
Indicator Results

4.09 The main findings from the indicator analysis for theme 1 (more efficient use of resources and less waste) are:

- Household waste production is rising;
- Only 11.4% of household waste is recycled, half the national target;
- Electricity consumption has stabilized, but at a high level - recent reductions will need to be greater if Lancashire is to make a worthwhile contribution to combatting global warming;
- Urban expansion is continuing;
- Overall, derelict land has declined, though it is increasing in some towns.

4.10 The main findings from the indicator analysis for theme 2 (lower levels of pollution) are:

- Nitrogen dioxide levels exceeded European Union limits at three locations and more monitoring sites are needed;
- River quality is improving and most waters are of good, or fair, quality;
- Six out of the county’s eleven bathing waters failed the European Directive.

4.11 The main findings from the indicator analysis for theme 3 (a more diverse natural environment) are:

- The number of statutory protected sites increased in the last decade to 61;
- Two protected sites were damaged over this period;
- Lancashire has examples of over half the flowering plant, fern, moss and liverwort species recorded in the UK;
- Most of the county’s snail, butterfly, grasshopper and cricket species are under threat.

4.12 The main findings from the indicator analysis for theme 4 (basic needs for everyone that are met more locally) are:

- Most urban-dwellers live within 1 km. of a food store, post office, primary school, bus stop and doctor's surgery;
- Many rural areas are poorly served and the trend is worsening;
- Though many workers live and work in the same district, over a fifth of commuters travel more than 10kms. to their workplace;
- Only a fraction of the rising number of homeless people applying for accommodation were successful;
- The incidence of inner city deprivation has not changed during the last decade;
- House prices are lower than national and regional averages and rose relative to income in 1990, but have now fallen back to previous levels;
- About a fifth of families are managing on limited resources and claim benefit, with claims increasing in recent years;
- In some urban areas, a quarter of all children are growing up in households where there is no adult earner;
- Lead levels in drinking water are well above European health standards in many parts of Lancashire.

4.13 The main findings from the indicator analysis for theme 5 (more opportunities for work in a diverse economy) are:

- In some areas, unemployment is over 15%, and 35% of these people are long-term unemployed;
- However, the overall trend is downwards;
- Since 1974, the gap between the top and bottom 10% of earners has widened considerably and the trend is exacerbating;
- Though Lancashire has a reasonably diverse employment range, a third of the workforce are in manufacturing and construction, which are declining employers - however, the service sector is expanding;
- The number of those whose income is below half the national average has risen dramatically;
- Day-care provision varies widely geographically but is reasonably available.

4.14 The main findings from the indicator analysis for theme 6 (improvements in health) are:
• In some inner urban areas more than a tenth of births are low weight, though overall trends are improving;
• Death rates are slightly higher than the national average, but are improving;
• Early deaths are commoner than in the UK as a whole;
• The trend is upwards, especially among younger age groups.

4.15 The main findings from the indicator analysis for theme 7 (access to facilities, goods, services and people whilst protecting the environment) are:
• Three-quarters of people travel to work by private car (14% walk, 9% ride the bus and 1% the train), and the gap between private and public transport modes is widening;
• For every £1 spent on pedestrians and bus provision, nearly £7 is spent on facilities for the motorist.

4.16 The main findings from the indicator analysis for theme 8 (less fear of crime and persecution) are:
• Burglary rates are high (up to 85 per 1,000 population), though starting to decline;
• Violent crimes against the person have increased since 1991, especially involving young people.

4.17 The main findings from the indicator analysis for theme 9 (access to education, training and information) are:
• Exam results are above the national average and getting better;
• Most school leavers (86%) go on to higher education, with 9% going straight into jobs, and 5% becoming unemployed;
• In many inner urban areas, between 20% and 30% of pupils fail GCSE English.

4.18 The main findings from the indicator analysis for theme 10 (people having a say in decision-making) are:
• Voter participation in local elections is extremely poor, rarely rising above 40%;
• The number of voluntary groups in the county has trebled in the last 25 years.

4.19 The main findings from the indicator analysis for theme 11 (people valuing the neighbourhoods and communities in which they live) are:
• There is a widespread feeling that the once strong community spirit is rapidly disappearing;
• People’s perception is that quality of life is declining, though this conflicts with the evidence.

Analyzing the Indicators

4.20 The information and trends in the Green Audit up-date provide material for the preparation of a revised Local Agenda 21 strategy for Lancashire. Following publication of the sustainability report, the LEF has commenced converting the results into the new strategy. To better inform this process, a more detailed examination of the indicator analysis was undertaken. This involved four aspects:

• A sustainability assessment of individual indicators;
• An assessment of the extent to which indicator trends are contributing towards sustainability overall;
• An assessment of the linkages between indicators;
• A geographical analysis of selected indicators to reveal areas with significant sustainability problems.

4.21 The first of these is based on an analysis of the contribution which each indicator trend is making to sustainability, on the evidence of the data collected for it. Data for every indicator sets out wherever possible how it relates to thresholds set by UK or European legislation, regulators or advisory bodies. It also includes information about geographical or demographic variations and temporal trends. How well an indicator performs against each of these parameters was then assessed against each of the core principles of sustainability (see Box Q for examples). The resulting analysis was then used to produce an overall assessment of the degree to which individual indicators are contributing towards sustainability.
4.22 A second assessment was carried out by conducting a consultation with LEF members, and considering the results at a series of interactive days. The resulting consensus shows that a quarter of indicators are moving in a positive direction, whilst 40% are moving in a negative direction. Remaining indicators either show a neutral trend, or the indicator results were not clear enough for a consensus to be reached on the direction of the trend. Box R gives the results.

The third analysis was an objective statistical evaluation of the linkages between all the indicators, using the Jacquard coefficient of similarity technique. This took every pair of indicators in turn (approximately 1,600 pairings), and assessed:

- The number of separate links each individual indicator in each pair had with all other indicators; and
- The number of links the indicators in each pair share in common with all other indicators.

Source: Original

Source: Lancashire County Council (1997)
Looking like this at multiple linkage allows the significance of the ‘multiplier-effect’ associated with each indicator to be taken into account. It also avoids the subjectivity which is unavoidable in stakeholder round-table discussions. The beneficial impact on sustainability of pursuing action on indicators which demonstrate a high number of linkages, is considerable while the prospect of hitting the most deserving targets is greatly enhanced.

4.24 Some distinct patterns emerged from the linkage matrix which resulted from the Jacquard analysis. Not unexpectedly, the Resource and Pollution themes are shown to have a strong association with each other. They both have strong synergy with Natural Environment and the transport related indicators of the Basic Needs theme. Powerful connections were also identified between the Basic Needs theme and all of the economy-related indicators. In turn, the latter group (especially those associated with poverty, unemployment and income) have a strong relationship with health indicators. Accessibility indicators demonstrate close links with the indicators for town growth, air and river pollution, services within walking distance and distance travelled to work. Voter participation has a significant connection with homelessness, prosperity and deprivation, income distribution and the indicators monitoring health, crime and education. Among the more specific correlations of particular importance for policy development (Mullaney A 1997) were:

- Poverty is shown to be a strong predictor of educational attainment;
- Low birth weight and premature deaths are linked to unemployment rates;
- Areas with high rates of unemployment also experience high burglary rates;
- Low voter participation is associated with areas of high unemployment.

4.25 The linkage exercise revealed that the following indicator topics are priorities for policy intervention. Taking action on each of these is likely to be the most efficient course, because the high degree of linkage will provide the maximum return for the least effort and investment.

- Town growth
- Homelessness
- Prosperity and deprivation
- Income distribution
- Low birth weight
- Property crime
- Violent crime
- Poverty
- Children in poverty
- Unemployment
- Long standing illness
- School-leavers’ literacy
- Voter participation

4.26 A more general linkage analysis was undertaken of the degree of connectivity between the principal indicator themes. The results (see Box S) provide further information for selecting aspects for priority attention in the forthcoming action plan.

BOX S: LINKS BETWEEN SUSTAINABILITY THEMES IDENTIFIED BY THE LANCASHIRE ENVIRONMENT FORUM
4.27 The final analysis also helps the LEF to target its action, by highlighting the geographical incidence of clusters of selected indicators. The indicators concerned, chosen by consensus because they were seen as illuminating particularly important aspects of the sustainability equation, were:

- Unemployment
- Long working hours
- Long standing illness
- Low birth weight
- Travel to work
- Property crime
- School-leavers’ exam results
- Homelessness
- Children in poverty
- Day care for under-fives
- Death rates
- Years of life lost
- Voter participation

4.28 The analysis involved overlaying data mapped at census ward level for each of the selected indicators. This was facilitated by GIS. The results highlighted wards experiencing the most consistently poor performance for the selected indicators. In this way, twenty-eight wards are revealed as having the most disadvantaged sustainability profiles. Understandably, they are clustered in the inner-urban areas of Lancashire’s principal towns. Such areas provide the LEF with obvious priority targets for the detailed application of Local Agenda 21 policies geared towards the reversal of unsustainable community trends.

PART V: USING SUSTAINABILITY INDICATORS IN LANCASHIRE COUNTY, UK

“Many of the solutions can only be found by organizations working together over the long-term and we must all play in bringing about change. I hope that every company, politician, community group, trade union or individual in the county will study the information and consider what action can be taken to improve the situation. Lancashire County Council and the members of the Lancashire Environment Forum, together with the Anti-Poverty Forum, will be working together over the next few years to bring about the change…necessary. We invite you to join us and play a part in the process”.

(Louise Ellman, chair of LEF, in Lancashire County Council 1997)

“Everything’s within walking distance, and it’s more friendly for children…around and about there’s people that you make friends with…Everyone will help if you are ill…They’ll pick up your kids from school…Cars won’t be allowed into town centres”.

(Lancastrian’s visions for the future in MacNaghten P et. al. 1995)

The Sustainable Development Planning Cycle Begins Again

5.01 The LEF and its members are now engaged in the preparation of a Local Agenda 21 strategy informed by the analytical results just outlined. In terms of the model approach to sustainable development planning proposed in Section III, the Lancashire process has entered a second cycle, and is currently moving from the community-based issues analysis phase into a further round of action planning. As part of the process of adjusting to the new priorities which emerged from the sustainability indicator work, changes have been introduced into the partnership arrangements overseen by the forum. Perhaps the most significant of these has been the expansion of the forum’s environmental remit to incorporate the social and economic components which did not feature as strongly in the first cycle. Rather than recast the LEF altogether, and so as not to lose the excellent base of stakeholder collaboration, this has been achieved by forming a close working alliance with an Anti-Poverty Forum, which was already active in the county. Joint meetings are now held to drive forward the planning phase, with representatives from both fora participating fully in each others activity. The County Council provides an integrated secretarial service and a single chair person for both bodies. In addition, the LEF has attracted new involvement from women’s and young persons groups.

5.02 In terms of detailed working arrangements, changes have also been made in the form of additional task groups. One such group is exploring the structure and operation of the LEF to see if there are better models, such as independent trusts, for achieving its objectives. One aspect of the
LEF programme has already seen structural realignment. The Local Agenda 21 link with Gulu (Box J), is now an arms-length, independent, not-for-profit company, with a membership open to all, administered by a board of directors drawn from business, community and voluntary groups.

5.03 Another new task group is addressing the development of the new action strategy and the factors that need to be incorporated. An interactive day of LEF and Anti-Poverty Forum members was held to define the new vision for the plan. There was agreement that the strategy needs to be informed by, and seek to support and facilitate local level activity. Consensus also emerged that the strategy must:

- Create vertical links between local activity (at community, neighbourhood and district levels) and strategic activity at regional, national and international levels;
- Link directly and explicitly into existing statutory plans and programmes across a wide range of disciplines, to improve its chances of being implemented;
- Lock-in key sectors missing from, or under-represented during, the previous cycle - e.g. business, youth, the general public;
- Be communicated in a way that is accessible to, and exciting for, people.

5.04 A third group is exploring ways of supporting practical activity for delivering sustainability. It has identified the potential for empowering local groups to define and carry out small-scale projects, establishing networks and databases of practical projects and facilitating the exchange of experience between networks, and adding-value with technical advice and funding from the LEF membership. A final task group is looking at how to engage with the general public, the majority of whom are not attached to particular stakeholder organization. Here, techniques like citizens’ juries, community profiling, parish maps, planning for real, future search conferencing, guided visualization and further use of focus group research are being considered. Recommendations from all task groups are currently being finalized and will be considered by the LEF steering group before going to the full forum later in 1998.

5.05 However, the indicator results themselves have already stimulated action in a number of areas. For example, a single regeneration budget bid developed targeting Lancashire’s twenty-four most disadvantaged wards to deal with poverty and improve social inclusion (Lancashire Forum on Poverty and Economic Disadvantage 1998). Collaboration with the police service on crime prevention is using audit analysis to better understand the underlying causes of crime so that policing and related activity can be more effectively focussed. The county’s youth and community service is also using indicator information to produce community profiles so it can harness resources to assist the most vulnerable groups. Finally, the computerized database collated for both the first and second audits has been made accessible to the public via a GIS facility located in the county’s central library (Foster G 1996). Citizens with access to the internet can also access the database via the ‘Environet’ service <http://www.lancashire.com/lcc/pl/envir.htm>.

Conclusion

5.06 Around the world, Local Agenda 21 has caught the imagination of local governments and the communities they represent. Of the many commitments to come out of the Rio Earth Summit, it has been the one which has made the most effective progress so far. Local Agenda 21 presents huge challenges, yet offers the genuine hope of a route to a more sustainable future for local people. To help identify the quickest and best pathways and chart a way along them, municipal government is experimenting with innovative sustainability tools and techniques. Of these, the use of sustainability indicators to bench-mark local trends, inform the process of visioning and articulate a course towards sustainability, and monitor progress in meeting the goals, is proving to be a critical part of the tool-kit.

5.07 In Lancashire, the use of indicators has been institutionalized into a mature Local Agenda 21 process. Mechanisms are in place for constructive dialogue with stakeholder organizations and the public. A comprehensive, strategic programme has been produced, founded on an open and accountable planning methodology. This comprizes long-term partnerships, community-based issue analysis, action planning, implementation and monitoring and evaluation and feedback. The process has been completed once, and is now well-advanced into a second cycle. Municipal government has set a strong lead, politically, technically and with resources, but has neither dominated proceedings, nor dictated their outcome. The commitment is as permanent as it can be, and has been taken into the organizational cultures and delivery mechanisms of a number of key actors. Turning policy into action, and installing real, lasting change, is the hardest part and the truest test. Capturing and holding the hearts and minds of the majority of Lancastrians is the ultimate target. Sustainability indicators will continue to play a central role in meeting the test, and hitting the target.
REFERENCES


Taylor D (1996) “Working with the Local Community to Produce a Local Agenda 21 Programme for a Sustainable Environment” in ‘Environmental Ethics,’ Centre for Business and Public Sector Ethics,


