Sustainable Development Indicators and Local Government

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Abstract

As the level of government closest to the people, local authorities have been credited with a key role in action towards sustainable development (United Nations, 1992). This thesis describes research which addresses mechanisms for evaluating sustainable development practice by local government.

A review of approaches to measuring progress, in economic, social and environmental terms, identified sustainable development indicators as an evaluation framework whose applicability to local government warrented further research. A review of research literature highlighted the need for a dynamic and cyclical research approach which would acknowledge the contested and value-laden nature of both sustainable development and the research endeavour.

The fieldwork is written up in three stages. The first stage explores the scope for transferring experience from public sector quality and performance indicators work. The second stage is a thin and linear description of the process of Fife Regional Council's role as a pilot authority in a Local Government Board Sustainability Indicators project. The third stage uses the wide range of written and experiential data gathered through the role of Project Consultant/Researcher to the Fife project to present a rich description of 'Sustainability Indicators for Fife'. The dialectic and hermeneutic framework adapted for this study enabled a detailed examination of the iterative movement between the sustainable development framing of the whole report and the process of crafting individual indicators.

The study concludes that sustainable development indicators have considerable value as a performance management tool for use in local government, particularly in the context of the Local Agenda 21 and Community Planning initiatives. However, it is the quality and approach to local governance that will have an overiding impact on the achievement of effective action towards sustainable development. Recommendations are made for good practice and for further research.

Dedication

I dedicate this thesis to my friend and mentor Dr Jacqueline Roddick who contributed so much to the genesis of the Commission on Sustainable Development and the promotion of Scotland's participation in the international negotiation processes following the 1992 Earth Summit.

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Thesis Overview

The aim of the research described in this thesis is to address the need for a mechanism for recording and evaluating sustainable development practice by local government.

Chapter 1 presents evidence that there is a need to devise and adopt measures which take much greater account of the ecological and social impacts of human activity. Sustainable development indicators were identified in Agenda 21 as a key tool in achieving a transition to more sustainable patterns of development. Agenda 21 also highlighted the role of local government as one of the key stakeholder groups in implementing a transition towards more sustainable patterns of development. Sustainable development indicators have been promoted as a tool for focusing public awareness around sustainable development issues. For this to be successful there needs to be a clear process by which these findings will be developed into a consensual programme of action and implemented. In the absence of such a process the indicators will not command sufficient political and management support to become the basis of internal and external reporting. They become peripheral to the performance management process and are doomed to have only a limited impact upon behavioural change, individually and institutionally. Using indicators as a feedback mechanism embedded within a process of consensus building, conflict resolution and decision making defines the role each indicator is being used to perform, and the purpose of using indicators in the wider process. It is these issues of governance, and the quality and approach to governance are at the heart of achieving effective action towards sustainable development:

Chapter 2 addresses debates which face researchers in this multi-faceted topic. Research has historically been depicted as polarised between the merits of

positivist versus phenomenological epistemology or quantitative versus qualitative methodology. Developing frameworks of indicators requires these polarities to be bridged and superseded. This chapter concludes by setting out the rational for adopting a dialectical and cyclical approach to presenting the research process.

The form of this PhD submission is unusual in two ways. Firstly because it includes a record of the early influences that shaped my 'pre-understanding' of sustainability indicators work at a community and local government level prior to commencing my substansive 'project'. Secondly because it includes two perspectives on the same cycle of project work. One, which forms Chapter 4 sets out the understanding I had reached at the end of my period as Project Consultant for the Fife Sustainability Indicators Project. This provide a thin description, essentially focused on WHAT was done as part of the pilot process. The second, which forms Chapter 5 re-examines this same piece of work from the perspective of a long period of reflection, writing, reading and rewriting. This second cycle - which forms the substansive part of this dissertation seeks to break new ground by providing a rich description of the pilot process which aims to illuminate WHY the pilot developed in this way . This analysis explores the context of the choices made that shaped the final output. The iterative stages of indicators development are reconstructed from written documents and situated interpretation. This presentation illuminates the way in which formal and informal encounters with members of the SIWG and encounters with others not officially involved with the pilot shaped what became included in the Sustainability Indicators for Fife Report.

Chapter 6 presents the conclusions of the thesis and recommendations for good practice and for further study.

Chapter 1

Framing the Research Inquiry: Sustainable Development, Indicators and Local Government

1.1 Introduction

Few people would now doubt that we face widespread and serious environmental and social problems around the world. There are hundreds of books and reports which present a persuasive case, with supporting evidence, for serious problems of environmental degradation and social inequality. The *Human Development Report*, produced by the United Nations Development Programme (1998), The *State of the World* written by the US Worldwatch Institute (1997), and *The Environmental Data Report* produced by the United Nations Environmental Programme (1997) are key sources of information and are updated annually. O'Riordan (2000) reviews the current evidence and highlights the current symptoms of our global problems:

Box 1.1 The State of the Planet 2000

- World population is 6 billion and increasing by 88 million annually;
- World economic activity has grown by 3% per year since 1950. If this trend continues, total world output will be 5 times larger than it is today by 2050. That would require a second planet to accommodate it, if ecological burdens remain the same;
- About 5000 children per day die because of avoidable lack of food, water, sanitation and basic health care;
- About 900 million people live in circumstances where their established means of producing food and gathering fuelwood and clean water are no longer sufficient to keep them or their families alive above the bare subsistence level;
- About 15 million people have been displaced from their homelands because of the inability to keep alive where they once lived, or because of oppression or military insurrection. About another 10 million people are displaced within their own borders into marginal lands or already highly stressed regions;

- Since 1970, the world's forests have fallen from 11.4 km2 to 7.3 km2 per 1000 inhabitants;
- Loss of protective soil cover and forest cover is now so widespread that erosion of land is beginning to prevent the creation of new food producing areas;
- Wild species are becoming extinct 50 -100 times faster than they would naturally;
- 30% of the population in developing countries lack access to safe drinking water, and 2 million die every year from associated diseases. Over 90% of all waste water in the developing world is untreated;
- Possibly as many as two fifths of the world's peoples live under conditions where small changes to climate, water availability and access to fuelwood will have disproportionate effects on their chances of survival;
- Global consumerism has grown by over 350% since 1990, and is rapidly increasing in developing countries. Already total spending exceeds $1.5 billion per day.
- The share of the global income which goes to the poorest 20% of the world population fell from 2.3% in 1980 to 1.4% in 1996 while the richest 20% increased their share of the wealth from 70% to 88% in the same time period.

(Source O'Riordan, 2000 32-34 and 150)

The research upon which this thesis is based addresses the issues of how we move to living in better balance with our ecological environment whilst also creating more socially just and equitable societies. In particular it focuses on the impact of the 'measures of progress' that are used by key social institutions at a national and international level. This thesis makes a case that we need to devise and apply new measures of progress: indicators of sustainable development. Such indicators are required as a tool to raise awareness of crucial trends and to provide feedback on

policies and actions intended to move to more sustainable patterns of development.

The purpose of this chapter is to present evidence:

- that existing measures of progress are a part of the problem of unsustainable development patterns in Western societies and international economic institutions;
- that the call for new 'measures of progress' is a key part of the debate about how we make a transition to more sustainable patterns of development, internationally and locally; and
- that local government has a key role to play in developing policy initiatives and practical actions tailored to local social and ecological conditions, and that indicators of sustainable development are of particular relevance at a local government level.

Section 1.2 looks at the way in which national income accounting measures have come to be used as measures of welfare, and of the ecological impact of economic activity, although they were not the purposes for which they were devised. This section sets out examples of arguments against the use of Gross National Product (GNP) and other such measures as ways of identifying social and ecological 'progress'.

Section 1.3 puts the application of national income accounting measures in the context of the prevailing positivist worldview. At the foundations of public policy in the industrialised countries of Western Europe and North America is a view of human nature informed by a positivist philosophy in which neoclassical economics plays a central part. This section explores the limitations of a rational

and individualistic philosophy which has become reliant upon economic valuation as a universal tool applied to measuring social and environmental impacts.

Section 1.4 looks at the interwoven environment and development debate. It explores linkages between the focus on economic growth as a measure of increasing welfare, concerns about damage to global ecosystems, and evidence of serious and increasing inequalities in the quality of life between and within nations. The experience of the 1970s and early 1980s was that 'good science' was not enough to secure changes in human behaviour necessary to reduce man's environmental impact - broadbased popular support would be necessary to mobilise change. The debate also shifted from one of apparently having to choose between environmental protection and human development to recognition, at least in principle, that care of the natural environment is an important aspect of development.

Section 1.5 identifies a range of possible alternatives to conventional national accounting measures. These include adjusted national accounts which aim to correct some of the recognised deficiencies of Gross National Product (GNP)/ Gross Domestic Product (GDP) as measures of welfare; alternative indices which would replace national income measures with a series of weighted social and environmental indicators aggregated into a single index figure; and, frameworks of individual social and environmental indicators which are not aggregated. The methodological limitations inherent in both adjusted national accounts and alternative, nonmonetary, indices have led to a growing interest in the approach which is least reliant on 'heroic assumptions': that of devising frameworks of individual indicators. The recognition that environmental protection and human development need to be mutually inclusive rather than competing objectives has emphasised the need to develop alternative measures of progress that were not

just 'social', 'environmental' or 'economic' but offer a more integrated perspective on progress.

Section 1.6 looks at the impact of the Earth Summit and 'The Agenda for Action in the 21st Century' (Agenda 21) which arose from it. Chapters 8 and Chapter 40 of Agenda 21 contain specific objectives regarding the need to develop measurement and reporting processes that are more effective than GNP for reflecting the environmental and social consequences of economic activity and these are reviewed in detail.

Devising a framework of sustainable development indicators is an activity that illuminates the value base that is held by those who decide what is to be included and what is to be disregarded. This overlaps with the definitional debates about what sustainable development 'really means'. Section 1.7 looks at the issues around defining sustainable development and of using definitions to inform policies and practical actions.

Section 1.8 highlights the importance of local authorities if commitments made at the Earth Summit are to be achieved. As the level of government closest to the people local authorities are seen as having a vital role to play in delivering sustainable development and aspects of this role were set out in Chapter 28 of Agenda 21. This included a clear request that each local authority should enter into a dialogue with its citizens, local organisations and private enterprises and adopt 'a local Agenda 21'. There has, however, been considerable inconsistency between rhetoric and practical action and evidence is presented that changes in local governance over the past 20 years has made the implementation of sustainable development initiatives more difficult. There are also onflicting views over the most appropriate role for sustainable development indicators : public awareness raising, analysis of sustainability trends or performance

management. Local authority experience of performance review and of using performance indicators has been a large area of developing practice over a period of more than twenty years, although the quest for improvements in public sector performance can be traced back to the late 19th Century. There are important parallels between the performance measurement and sustainable development indicators debates. 'Public sector performance' means different things to different people. This gives a broad range of practical experience of the practical application of terms such as economy, efficiency and effectiveness indicators. This experience also illustrates different models of how indicators can be used - as 'dials' from which data can be read off, or as 'tin-openers' which present an invitation to investigate a highlighted phenomenon more closely. Experience of a range of behavioural issues suggest that the success of performancemanagement systems depend heavily on organisational and political relationships as much as to increasing the accuracy, relevance and timeliness of the data from which the performance indicators are constructed. This is an equally important lesson in creating frameworks of sustainable development indicators.

1.2 Economic Indicators: Measuring Growth or Measuring Progress?

1.2.1 The Origins of Conventional Economic Indicators

> "Measures of total national income such as GNP and GDP have become such a familiar and widely accepted part of economics that it is easy to forget that they were invented at a specific time for a specific purpose." (Anderson, 1991: 16)

Attempts were made to establish a statistical basis for the discussion of economic issues as far back as the late 17th century. In 1928 the League of Nations held an international conference on economic statistics. However, national income accounting during the 1920s and 1930s was seen as primarily a matter of being more efficient and systematic about collecting statistical information. The first international set of income figures were published just prior to the second world war - these covered partial data on 26 countries. This coincided with the major breakthroughs in 'national income accounting', in its present, detailed form. John Maynard Keynes *General Theory* was published in 1936. This work stimulated work on economic statistics as calculation of figures for national income were essential for any attempt to manage an economy on Keynesian principles. Keynes played an important part in the development of national income accounting for wartime planning and was invited to take part in government work on the UK's 1941 budget, the first to be based on a national income accounting analytical framework.

Present day national income accounting is therefore the result of a combination of the practical need to gather reliable information in wartime with the theoretical framework provided by Keynesian economics. This approach was shaped by the two main concerns of economists during the period in which it was created:

government finance and unemployment. National income measurements such as GNP and GDP (see Box 1.2) were not intended by those who devised them to be measures of total welfare or total impact. Yet over the years they have come to be used in both these roles. At the heart of the debate about the role and application of national income statistics is the concept of 'progress'. During the twentieth century the discipline of economics was framed as a 'developing quantitative science' and the production of gross national product statistics seemed to offer a much more precise way of talking about economic progress. However, the focus on precision of 'measuring progress' using GNP has been argued to have become separated from the larger human and ecological context of our world:

> "The smaller, more focused, more precise part of the discourse about economic progress - national income accounting - has become a very respectable part of economics. The issues about how this form of progress is related to Progress in a much larger sense - moral, human and social - are not much debated in the economic journals." (Anderson, 1991: 19)

Box 1.2 Definitions

Gross Domestic Product (GDP) is the total value in money terms of all the production in a country in one year. It is measured in three different ways (which should all come up with the same total): through adding the value of the goods and services produced, through adding the expenditure on them, and through adding the incomes received from producing them. Production where no money changes hands - such as unpaid domestic work - is therefore excluded from GDP. Money changing hands where there is no production - such as gifts, or social security payments - are also excluded.

Gross National Product (GNP) is GDP plus rents, interest, profits and dividends flowing into a country from abroad, minus rents, interests, profits and dividends paid out to people in other countries. GNP therefore measures the total income received by the inhabitants of a country. GNP depends on where the owners are located; GDP depends on where the economic activity is located. In a country with a lot of foreign

investment in it but very little by its inhabitants in other countries, there will be a net outflow of 'property income' (rents, interest, profits, and dividends this will result in a GNP much lower than its GDP.

GDP or GNP per capita i.e. per head or per person, is GDP or GNP divided by the total population of the country. This gives a figure often described as measuring the average standard of living.

National income accounting is the accounting activities, carried out according to various rules (e.g. to avoid counting the same production twice over the course of arriving at a particular total), which generates figures for GDP and GNP and their component parts.

(Anderson, 1991: 19-20)

1.2.2 Is GNP a Good Indicator of Welfare?

The issue of whether GNP is a good indicator of welfare has provoked considerable debate for almost 30 years. Schumacher in *Small is Beautiful* (1973) focused on the fragmentary nature of economic judgments and their methodological narrowness. He argued that they give vastly more weight to the short term. They are also based on a definition of cost which excludes all free goods:

> "that is to say the entire God-given environment, except for those parts of it that have been privately appropriated." (Schumacher, 1993: 29)

This has the effect that an activity can be 'economic' although it despoils the environment, yet a competing activity, if at some cost it protects and conserves the environment, is 'uneconomic'. Schumacher argued that economics deals with goods and service from the point of view of the market, where willing buyer meets the willing seller. The buyer is essentially a bargain hunter. His or her sole concern is to obtain the best value for his money. He or she is not concerned with the origin of the goods or the conditions under which they have been produced.

> "The market therefore represents only the surface of society and its significance relates to the momentary situation as it exists there and then. There is no probing into the depths of things, into the natural or social facts that lie behind them. In a sense, the market is the institutionalisation of individualism and non-responsibility. Neither buyer nor seller is responsible for anything but himself. It would be 'uneconomic' for a wealthy seller to reduce his prices to poor customers merely because they are in need, or for a wealthy buyer to pay an extra price merely because the supplier is poor. Equally it would be 'uneconomic' for a buyer to give preference to home-produced goods if imported goods are cheaper. He does not, and is not expected to, accept responsibility for the countries balance of payments."
>
> (Schumacher, 1993: 29-30)

Schumacher argues that it is crucial to be aware of the limits of the usefulness of market economics. This awareness is important for economists and for ordinary citizens. A failure to recognise that there are boundaries to the applicability of economic calculus means:

> "he is likely to fall into a similar kind of error to that of certain mediaeval theologians who tried to settle questions of physics by means of biblical quotations. Every science is beneficial within its proper limits, but becomes evil and destructive as soon as it transgresses them." (Schumacher, 1993: 32)

Anderson and Schumacher's points suggest that while gross national product statistics may offer a much more precise way of talking about economic progress, economic progress is not the same as social or ecological progress and there are considerable hazards in treating the terms as interchangeable. Ekins built on Schumacher's work in producing *The Living Economy* (1986). In presenting a case for a 'new economics' he highlighted the negative role of the use of growth of GNP as an indicator of increasing welfare:

> "Most current economic policy, indeed the very orientation of economic theory, boils down to the pursuit of economic growth as indicated by an increasing Gross National Product (GNP). An economy that is growing at 3 per cent per annum is thought to be adequate, more growth is splendid, less growth is worrying, no growth or negative growth indicates widespread economic failure. The assumption is that growth is good

> and more is better. It is as if economists had never heard of cancer. It is extraordinary that an entire social science, and the dominant discipline in today's world at that, can have effectively come to be based on such a simplistic assumption." (Ekins, 1986: 8)

Ekins rejects the assumption that growth is good and more is better on three main grounds. Firstly that it confuses means with ends. The end purpose of economic activity is to increase human welfare. One way of doing this may be through some form of economic growth. But a *growth equals welfare* equation has no logical validity at all. It begs three vital questions: growth of what? growth for whom? growth with what side effects? Ekins emphasises that conventional economic thinking makes little or no attempt to make this assessment, nor has it developed the conceptual or political tools for such a task.

Ekins argues that the second flaw in the growth assumption lies in its failure to appreciate the reality of a finite planet. A 3% growth rate implies a doubling of production and consumption every 25 years. Although the recent decline in the resource base and global environmental degradation that are the result of growth economics have been very well documented, growth economists and the politicians they advise still assume that economic growth on an indefinite basis is both possible and desirable (Ekins, 1986). An analysis carried out by Hueting shows that 70 per cent of GNP growth is generated by 30 per cent of the activities making up GNP.

> "Unfortunately, these are mainly the activities which, by their use of space of by the pollution they generate, in production or consumption, most harm the environment: notably the oil and petrochemical industries, agriculture, public utilities, road building and mining." (Hueting, 1992: 259)

A shift in human activities to reduce the burden on the environment and resources may improve environmental (and social) welfare but tend also to reduce growth in GNP. Hueting explains that this is because in terms of the national accounts

environmentally benign activities represent a smaller volume of activity included in the national accounts than environmentally burdensome activities:

> "Thus a bicycle-kilometre, a sweater, and extra blanket, beans and a holiday by train represent a smaller volume than respectively a car-kilometre, a hot room, heating the whole house, meat and holiday flights. This is mainly because the exhaustion of the environment and resources is not charged to national income as costs. If it were, the differences would be much smaller or nil." (Hueting, 1992: 259)

Ekins' third main ground for rejecting economic growth as the over-riding policy objective is that its pursuit is actually likely to intensify the very economic problems which it is meant to solve. Chief amongst them are inflation and unemployment. This is because the pattern of resource allocation to which the pursuit of economic growth inevitably seems to give rise (Ekins, 1986). Anderson (1991) presents a detailed analysis of the limitation of GNP in terms of measuring welfare an abridged version of which is set out in Box 1.3.

The debate about national income accounting measures, and what they mean in terms of human welfare, may seem rather abstract and academic. However the separation of man and nature exemplified within economic calculus can be argued to be a key feature of the prevailing Western philosophical view worldwide. The

Box 1.3 Problems of National Income Accounting

PROBLEMS OF INCOME AND OUTPUT

- Unpaid domestic labour is not reflected in measurements of income
- Non-money transactions outside the household are not reflected in measurements of income

PROBLEMS OF OUTPUT AND WELFARE

Problems of Averaging and Comparisons

- Inequalities in distribution of income can mean 'mean income' is very misleading
- Differences in needs and circumstances are ignored
- Exchange rates make international comparisons unstable

Problems of Stocks and Depreciation
People derive benefits from both stocks and flows, whereas GNP measures only flows. this gives rise to a number of problems.

- People's existing possessions are not valued or the benefits they offer.
- 'Environmental wealth' and its depreciation is not valued
- Human beings and their depreciation are not recognised
- Positional goods are not treated as different from other goods

Problems of Other Sources of Welfare
A further set of reasons why total output does not give an accurate measure of welfare derives from the source of welfare other than output and stocks. These include some sources which national income measures have little or no bearing on, such as peace of mind, happiness in personal relationships, etc. There are two other sources which do, however, have some connection with national income accounting: leisure time and the quality of life at work.

- Leisure time is valued only if it is used for extra productivity
- Quality of life at work is not recognised

Problems of Inefficiency in Providing Welfare
Where welfare is derived from goods and services, the money value of these goods and services is often a poor indication of the amount of welfare derived, for a variety of reasons.

- Inefficient private provision
- 'Inefficient' consumer decisions
- 'Inefficiency' in production
- Valuation of output reflects the distribution of income
- The diminishing marginal utility of money

Abridged from Anderson, 1991: 22-31

practical impacts of this philosophy have led to a growing pressure to examine the nature and intensity of human impacts on our planet and the equity of distribution of resources and services both between and within nations. GNP is not an example of one discipline 'going astray'. The separation of man and nature and the way in which the measurement of progress has become focused on economic valuation are features of the prevailing positivist worldview.

1.3 Positivism and the Planet

> "Human societies seek to construct their view of 'nature' to reflect the problems of the human predicament. They invest the environmental discourse with their concerns: our view of what lies outside us, is governed by the view we take of ourselves.... The underlying assumptions about our relationship with the environment, that support the view of 'progress' in advanced industrial societies, have tended to become normative impositions, and environmental policy is increasingly the battleground on which conflicting views of human possibilities are fought out." (Redclift, 1992a: 38)

Auguste Comte invented the term positivist philosophy. In the early nineteenth century Comte first expressed the three principal doctrines of Positivism. First was the conviction that empirical science was not just a form of knowledge but the only source of positive knowledge of the world. Second, was the intention to cleanse men's minds of mysticism, superstition, and other forms of pseudo-knowledge. And finally, there was the programme of extending scientific knowledge and technical control to human society to make technology, as Comte said:

> "no longer exclusively geometrical, mechanical or chemical, but also and primarily political and moral" (quoted in Habermas, 1968).

In Comte's scheme of positive philosophy, the natural and social sciences taken together formed a hierarchy of decreasing generality, and increasing complexity, beginning with mathematics, then physics, chemistry and biology, and then moving into sociology, the science of human conduct. As with natural phenomena, it was argued that social phenomena are subject to general laws, which will become apparent through scientific study. The essence of positivism is that the social world exists externally and that its properties should be measured through objective methods, rather than being inferred subjectively through

sensation, reflection or intuition (Easterby-Smith et al., 1991: 22). As Cassell and Symon observe:

> "the assumption behind the positivist paradigm is that there is an objective truth existing in the world which can be revealed through the scientific method where the focus is on measuring relationships between variables systematically and statistically" (1994: 2).

Easterby-Smith et al. (1991) summarise a collection of points which have come to be associated with the positivist's philosophical stance (Box 1.4), however, they do emphasis that these 8 points do not represent the view of a single positivist philosopher, and as Kolakowski has observed:

> "one would be obliged in discussing each thinker, to single out those elements in positivism that are not to his taste, at the same time pointing out how much of the rest of it he none the less subscribes to." (1993: 1)

The positivist philosophical perspective is not simply an academic debate about how to look at the world. Schon argues that a positivist docterine has had a considerable impact on the development of professions such as engineering and medicine:

> "In the late nineteenth and early twentieth centuries, the professions of engineering and medicine achieved dramatic successes in reliably adjusting means to ends and became models of instrumental practice. The engineer's design and analysis of materials and artifacts, the physician's diagnosis and treatment of disease, became prototypes of the science-based, technical practice which was destined to supplant craft and artistry. For according to the Positivist epistemology of practice, craft and artistry had no lasting place in rigorous practical knowledge." (1982, 34)

Box 1.4 Views associated with the positivist's philosophical stance

independence : the observer is independent of what is being observed;

value-freedom : the choice of what to study, and how to study it, can be determined by objective criteria rather than by human beliefs and interests;

causality : the aim of social sciences should be to identify causal explanations and fundamental laws that explain regularities in human social science research;

hypothetico-deductive : science proceeds through a process of hypothesizing fundamental laws and then deducing what kinds of observations will demonstrate the truth or falsity of these hypotheses;

operationalisation : concepts need to be operationalized in a way which enable facts to be measured quantitatively;

reductionism : problems as a whole are better understood if they are reduced to the simplest possible elements;

generalisation : in order to be able to generalise about regularities in human and social behaviour it is necessary to select samples of sufficient size;

cross-sectional analysis : such regularities can most easily be identified by making comparisons of variations across samples.

(Easterby-Smith et al., 1991: 23)

Schon traces how the positivist epistemology influenced both the structure of academic institutions and the role of professions across the 'Western' world. The positivist epistemology of practice was given additional impetus by World War II. The new discipline of Operations Research grew out of the American and British efforts to use applied mathematics for bomb tracking and the use of depth charges. The Manhattan atomic bomb project was treated as a symbol of the successful use of science-based technology for national ends. Government

spending on research increased. Research institutions proliferated and were largely promoted on the basis that production of new scientific knowledge could be used to create wealth, achieve national goals, improve human life, and solve social problems. Medicine became the role model that other professions aspired to, with its linkage of research and teaching institutions, its hierarchy of research and clinical roles, and its system of connecting basic and applied research to practice. In fields such as education, social work, planning and policy making, social scientists attempted to do research, to apply it, and to educate practitioners, all in accordance with their perceptions of the models of medicine and engineering. Schon points out that the very language of social scientists is rich in references to measurement, controlled experiment, applied science, laboratories and clinics and is striking in its reverence for these models.

From the positivist approach a quantitative social science developed which attempted to model how large numbers of people behaved using the assumptions that the people's behaviour was 'rational' and that scientists empirical observations could be used to make generalisations. Carley and Christie (1992) raise several concerns about this approach. Firstly, that the abstractions made from the scientist's observations will be simplified pictures of a complex reality and that quantitative models generated from them cannot capture the 'multi-dimensionality of human existence'.

> "Problems of quantitative modelling have been discussed at length and are familiar to most social scientists (Carley, 1980). The main objection is not that tools such as statistical modelling are not useful, but that they can be misused or over-valued, in that their simplification of reality is conveniently taken for reality itself." (1992: 74)

Carley and Christie (1992) go on to point out that quantitative techniques are often based on simplistic methodological assumptions which often cannot withstand either methodological or political scrutiny, and which represent value

judgements although these are not explicitly stated. This divergence between the stated intention of particular modelling methodologies and how they are used in practice relates to another concern which arises when rationalist decision techniques are purported to be politically neutral or 'value-free'. All such techniques are open to being used to reflect the priorities of a dominant social group. If they are co-opted in this way they fail to reflect consideration of the values of less powerful social groups. These less-powerful groups may be affected to a considerable extent by the decisions which are claimed to be determined by these politically neutral and rational techniques. The very claim that the techniques are beyond politics and vested interests can make them very difficult to oppose on social or environ-mental grounds and can require considerable level of technical expertise to question them on their own methodological terms and the assumptions contained within the models used.

This debate over the use of quantiative models is intertwined with a debate over the application of monetary values to aspects of the environment and to people. An example of the reasons given by economists for applying economic valuations, in this case to environmental services, is set out in Box 1.5. This argument is used to support techniques such as Cost-Benefit Analysis (CBA) which use money as a single measuring rod for valuing costs and benefits.

Box 1.5 Implication of Placing Monetary Values on the Environment

(i) By at least trying to put money values on some aspects of environmental quality we are underlining the fact that environmental services are *not* free. They do have values in the same sense as marketed goods and services have values. The absence of markets should not be allowed to disguise this important fact.

(ii) By trying to value environmental service we are forced into a rational decision-making frame of mind. Quite simply we are forced to think about the gains and losses, the benefits and costs of what we do. If nothing else, economic valuation has made a great advance in that respect.

(iii) Many things *cannot* be valued in money terms. That is altogether different from saying they are "priceless" in the sense of having infinite values.

(iv) The fact that we find *positive* values for so many environmental functions means that in an economic system which allocates resources according to economic values (i.e. consumer preferences) *must* take account of the positive economic values for environmental quality. Yet the actual values (as opposed to the values imputed by the techniques discussed [such as CBA]) are zero in many cases.

(Pearce, et al., 1989: 80-81)

This approach has however provoked controversy, and its opponents have argued that it can result in social, environmental and spiritual values being swept aside:

"To press non-economic values into the framework of the economic calculus, economists use the method of cost/benefit analysis. This is generally thought to be an enlightened and progressive development, as it is at least an attempt to take account of costs and benefits which might otherwise be disregarded altogether. In fact, however, it is a procedure by which the higher is reduced to the lower and the priceless is given a price. It can therefore never serve to clarify the situation and lead to an enlightened decision. All it can do is to lead to self deception or the deception of others; for to undertake to measure the immeasurable is absurd and constitutes but an elaborate method of moving from preconceived notions to forgone conclusions; all one has to do to obtain the desired results is to impute suitable values to the immeasurable costs and benefits. The logical absurdity, however, is not the greatest fault of the undertaking: what is worse, and destructive of civilisation, is the pretence that everything has a price, or in other words, that money is the highest of all values."

(Schumacher, 1973: 31)

The counter argument to this point is that without CBA non-monetary values end up being ignored completely and natural resources and services are treated in economic calculus as free (Pearce, 1989). Although this hazard exists expressly because natural resources and services are being forced into an economic framework for decision making purposes.

The controversy over the application of quantitative models and the adoption of monetary valuations within them can be seen as part of a wider concern about the impacts of the Western worldview on the ecology of our planet and our societies.

1.4 Environmentalism and the Development Debate

1.4.1 Man's Impact on the Planet

Concern about man's impact on the environment is not just a recent phenomenon. Thoreau and Emerson were writing prolifically in the 19th century on the impact of the American way of life on nature and man (for example Thoreau 1854, Emerson, 1848). Leopold's land ethic (Leopold, 1949), Carson's *Silent Spring* (Carson, 1965) and, closer to home, Frazer Darling's ecological work on the Western Highlands of Scotland (Darling, 1955) were very influential in highlighting the importance of the environment at a time where social and economic issues were the focus of 'progressive' institutions at national and international level.

During the early 1970s the environmental debate focused on the threat posed by the prevailing patterns of industrial productions and resource extraction on the natural resource base. In 1971 UNESCO launched a Man and the Biosphere

Programme which attempted to chart human impacts on natural ecosystems and issued warnings about the neglect of these impacts. The United Nations Conference on the Human Environment in Stockholm in 1972 drew attention to the dangers of ignoring environmental problems but its cautions about the negative effects of economic growth were contentious (Redclift , 1992a). This mirrored the reaction to the publication of *The Limits to Growth* by Meadows et al in 1972, which received considerable attention but was rejected by academics, public officials and business elites (on methodological grounds as well as conceptual grounds). Part of the hostility to the report was that the policy prescriptions contained in it, especially the steady-state economy, were seen as threatening a wide range of private business interests who in turn exercised considerable influence with politicians (Buttle et al., 1990).

Two years after the Stockholm conference another meeting was held in Bucharest. This event broke new ground by suggesting a need for an integrated approach which attempted to take into account the inter-relationships between population, resources, environment and economic development (Moffatt, 1996). The Stockholm and Bucharest events, and the *Man and the Biosphere* project led by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 1981 which studied the inter-relationships between natural ecosystems and socioeconomic processes, led to the emergence of a concept described as 'eco-development'. Moffatt (1996) makes a case that many of the ideas expressed within the eco-development framework were precursors of sustainable development.

> "individuals should follow the ideal of eco-development action.., with its emphasis upon economic quality, social harmony and environmental balance in the local pursuit of individual fulfillment, household self-sufficiency and community self-reliance." (Riddell, 1981 quoted in Moffatt, 1996: 10)

Eco-development, however, failed to secure the commitment of politicians and industrialists and it did not achieve results in practice. It did, however, play a useful role, both in seeding later activity such as the *World Conservation Strategy* and the *Brundtland Report* and in offering a warning of the risks of only including a limited range of stakeholders in crucial international discussions. If you cannot involve both ordinary people and 'big players' such as governments and large companies then the process is likely to fail. The failure of eco-development was an influential factor in the adoption of a stakeholder approach to the implementation of Agenda 21 at the 1992 Earth Summit. The World Conservation Strategy, published by the International Union for Conservation and the World Wildlife Fund in 1980 illustrated the risks of excluding ordinary people from the process. When the strategy was released it was aimed at government policy makers, conservationists and developers, it failed to produce a transformation of public attitudes - which in turn left "the destructively exploitative relationship of mainstream economies to the land, or more generally the biosphere, unchallenged" (Moffatt, 1996: 12).

This experience from the early 1980s is very important because it emphasises that getting the 'natural science' right is not enough to engage broadbased support. An interdisciplinary approach which draws on the 'process' experience of social science to value the perspective of people other than academic 'experts' is necessary if political will is to be engaged and maintained in long-term environment issues in the face of the short-term political survival agendas of democratic politicians. This need for interdisciplinarity was at the same time emphasised by the growing recognition that the environment and development debates could not be treated as separate and conflicting, but rather are inextricably interwoven.

1.4.2 Development: An International Debate

The Brandt Commission report *North - South: A Programme for Survival* was also published in 1980. It looked particularly at economic and social development in the 'South' or 'developing countries'. In the (relatively short) sections of the report devoted to the environment there was an explicit recognition of serious misgivings about the impact of economic development on the environment, for example:

> "It can no longer be argued that the protection of the environment is an obstacle to development. On the contrary, the care of the natural environment is an aspect of development." (1980: 114, cited in Redclift, 1992a: 34)

The most significant development of the 1980s was the Brundtland Report. The Brundtland Commission was established in 1983 to inquire into a global agenda for change focused on four major areas:

- to propose long-term environmental strategies for achieving sustainable development by the year 2000 and beyond;

- to recommend ways concern for the environment may be translated into greater co-operation among developing countries and between countries at different stages of economic and social development and lead to the achievement of common and mutually supportive objectives that take account of the inter-relationships between people, resources, environment, and development;

- to consider ways and means by which the international community can deal more effectively with environmental concerns; and

- to help define shared perceptions of the long-term environmental issues needed to deal successfully with the problems of protecting and enhancing the environment, a long-term agenda for action during the coming decades, and aspirational goals for the world community.

(WCED, 1987: ix)

The publication of *Our Common Future* the report of World Commission on Environment and Development (WCED, otherwise known as the Brundtland Commission) is seen as a watershed by many writers, although the rational for granting this status varies. Redclift ascribes its importance to:

> "its expression of an agenda of issues specifically designed to counteract the sectoral bias and compartmentalism which had dogged so much work on the environment. It also raised other issues of concern, notably the belief that considerations of intergenerational equity needed to be addressed from a global perspective." (1992a: 33).

Anderson by contrast focuses its role in elaborating a compromise position in the debate between the advocates of continued growth and the advocates of non-growth.

> "The growth debate has been an unsatisfactory one, because the 'growth' which the 'anti-growthists' have attacked is not usually the same thing as the 'growth' which the 'pro-growthists' have rushed to defend. This is mainly because the chief influence of the anti-growthists has been ecology, whilst the main influence of the defenders of growth has been economics.
>
> In economics, 'economic growth' is defined as an increase in gross national product (GNP) or gross domestic product (GDP). The figure for the rate of growth leaves unanswered a whole series of questions about the composition of output between industry, agriculture, services etc.; between polluting and non-polluting sectors; between resource depleting and conserving activities; and so on. The GNP total and its rate of growth are seen by economists as important figures, but what they can tell us is strictly limited.
>
> In ecology, the paradigm case of growth is growth in the population of a species. The normal pattern is that populations grow until some feature of their environment, perhaps a predator or a limited food supply, brings that growth to a halt, or pushes it into reverse. The anti-growthists imagine that economic growth is a similar process. But clearly the size of the human population doesn't by itself determine the degree of environmental impact, because human beings consume different goods and services, use different technologies to produce them, and are organised in different sorts of societies." (Anderson 1991:13-14)

It could be argued that by rejecting the idea that economic growth is inherently and necessarily bad or unsustainable, and calling for a form of growth "that is ...socially and environmentally sustainable" the main influence of the Brundtland Report was to carry the popular debate beyond the pro-growth/anti-growth dichotomy into an exploration of other ways of assessing human welfare and environmental impact. This can be viewed as a key precursor to serious consideration of the need to develop other means of measuring 'Progress'.

1.4.3 Global Climate Change

By the end of the 1980s the basis of some of the central environmental arguments had shifted from a focus on potential resource scarcity, and the scope for substitution of one resource for another, to an increasing concern about the absorptive capacities of nature as a limiting factor on industrial activity. The discovery of substantial thinning over the ozone layer over the Antarctic in 1985, followed by increasing evidence that the climate was changing under the influence of rapidly increasing emissions of 'greenhouse' gases, predominantly resulting from fossil fuel consumption, led to a new sense of urgency among industrialised countries to discuss more sustainable approaches to development. The issue of 'global climate change' has become, in the public mind at least, synonymous with the 'sustainable development' debate.

The Intergovernmental Panel on Climate Change (IPCC) was convened in 1988 to carry out a major scientific assessment of the state of knowledge about global warming. The Panel, comprising the world's leading climatologists felt able to state that they were certain that some global warming would occur due to human activities should existing emissions trends continue (Houghton et al., 1990: xi). Considerable uncertainty remained over whether there is a causal link between increasing concentrations of 'greenhouse gases' (principally: water vapour, carbon dioxide, chloroflourocarbons, methane and nitrous oxide) but the inclusion of an

approximate correlation between increasing concentrations and observed warming underpins a growing belief that they may well be linked. Paterson (1996) observes that "the relevant point here is simply that the implications were sufficient to generate some action from the world's governments." Unlike the earlier 'limits to growth' / eco-development debate the concept of global climate change has "enjoyed growing endorsement by many groups" Buttle et al (1990: 59).

> "Indeed, for a notion that challenges the basis of modern industrial civilisation, global change has gained extraordinary respectability." Buttle et al (1990: 60)

Despite this apparent consensus, and the important role that physical scientists are playing as the 'bearers of the message' of the decline in our natural environment, it has been argued that the physical scientists were not well placed to suggest policy interventions that could prevent climate change from happening. Redclift (1992a) proposes that the complexity of the processes involved in global climate change "does not merely stretch the predictive powers of the natural sciences - it also calls for a much larger contribution from the social sciences":

> "From a social science perspective, global environmental change is a complex process in which the human actor is the source, as well as the object, of change. Human actions affect global environmental change through social institutions in every sector of the economy: energy, transport, industry, agriculture and recreation. At the same time environmental changes do not in themselves determine economic and social outcomes. Social institutions, including those of the economy, mediate between the environment and social and economic outcomes. It follows that we need to be aware of both the adaptive capacities of human societies, and their ability to formulate alternative policies to meet new policy challenges. These lines of thought were largely unexplored by the scientists interested in global environmental change, while to many social scientists the environment remained an obscure area, in which their expertise was neither desired nor particularly desirable."
>
> (Redclift, 1992a: 34)

Redclift presents an example of the complexity and political nature of the global climate change debate in reviewing the role of 'the South' in the deliberations of the IPCC and in arguments over which nations are the most to blame for greenhouse emissions. He traces a transition from a debate about the reliability of science, through a policy debate which was confined almost entirely to the industrialised world, to a "truly 'global' debate" in which the concerns of the developing countries are uppermost.

> "The climate discussions, it was contended, were about trade and development, investment and debt, and.... that reaching an agreement about global warming meant renegotiating the terms under which the South 'developed'. The environment debate had become, in fact a development debate." (Redclift, 1992b: 91)

The publication of the World Resources Institute's (WRI) 1990-91 Annual Report was a further catalyst for this environment/development debate. It contained a Greenhouse Index of the 50 countries with the highest net emissions of gases in 1987. Three of the six countries that were said to be the largest contributors had heavily industrialised economies the United States, the USSR, and Japan; and three did not: Brazil, China, India . Other WRI publications carry a similar message of the need for urgency, but the weight of responsibility for initiating agreement is placed on the industrialised world.

Anil Agarwal and Sunita Narain of the Centre for Science and the Environment in New Delhi made a case that the WRI 1990-91 report is biased and methodologically unsound (Agarwal and Narain, 1991). Although, it can also be argued that in their attempt to restore structural development issues to the forefront of the argument about global warming Agarwal and Narain only make oblique reference to the role of population increase, their general case is backed up by the *Nairobi Declaration on Climate Change* (African Centre for Technology Studies, 1990) and *Our Own Agenda*, the Latin American response to the

Brundtland Commission (Inter-American Development Bank and United nations Development Programme, 1990). The effects of global climate change in many African countries are likely to be severe, more droughts and floods are expected; major export crops are likely to be put in jeopardy; and economic vulnerability is likely to increase. In the case of Latin America a failure to write off much of the debt will lead to people acting less sustainably, whether they are rich or poor (Redclift, 1992b: 92).

At a global level there is some consensus over solutions to global climate change. On energy use in particular many authors, including the IPCC, have set out a case that a demand-reduction approach that focuses on providing energy services (lighting, heating, cooking), produces much lower environmental (and economic) costs than the supply-led approach currently followed in the North which focuses on expensive ways of producing energy instead of ways of using it more effectively. Redclift draws attention to the need to "explore the prior commitments of our societies":

> "It is not difficult to identify areas of human behaviour and social organisation which correspond to these unwritten commitments, and which carry cumulative social commitments which are largely unexplored. For example, increased use of motor cars helps to increase air pollution, vehicular congestion, and personal injuries. The use of nuclear power is attended by risks of radioactive fuels and problems of hazardous waste disposal. Lung cancer and heart disease can be labeled 'illnesses of affluence' and military technology does not effectively control many conflicts within and among states.
>
> These are all examples of the way in which environmental externalities (to employ the neoclassical jargon) reach into social organisation and behaviour, becoming, in the process 'internalised'. Where one chooses to set the parameters of this process depends on the range of social commitments that are identified, and the resources dedicated to meeting our 'wants'. The essential point is that environmental problems, including global problems, are the outcome of a series of choices, many of which we make collectively, as a society. The epicentre of these choices is the developed world, and most of these choices are so culturally grounded that few

> people in the North recognise them as choices at all: they are routinely depicted as 'needs' rather than 'wants'." (Redclift, 1992a: 10)

The evidence that man's approach to development is damaging the global ecology of our planet without successfully addressing the basic needs of billions of its human inhabitants has led to a call for alternative ways of measuring progress that focus less on the movement of monetary units and more on the social and ecological outcomes that are being achieved.

1.5 Alternative Measures of Progress

1.5.1 'Adjustments' to GNP

A variety of solutions have been proposed to the deficiencies of GNP and GDP as measures of social and environmental welfare. One area of study has been to attempt to reform GNP by making a range of adjustments with a view to correcting some of the recognised deficiencies (Anderson, 1991, Ekins and Max-Neef, 1992).

Possible additions to GNP addressing the problem of unpaid domestic labour by including an adjustment to take account of economic activity internal to households. Additions have also been proposed to recognise the value of leisure time and of quality of life at work. Proposed subtractions from GNP have also been proposed to take into account capital depreciation, environmental depreciation, the cost of accidents and dangers to health. The sum of all these adjustments can be described as an 'Adjusted National Product'. However, considerable methodological and practical problems arise. Anderson argues that adjusted national product figures calculated on this basis would be a more sensible foundation for decision making than existing GNP figures. However, he simultaneously acknowledges they would still be ineffective at measuring

economic welfare because of the inherent limitations of GNP on which adjusted accounts are still based. In addition there is a further limitation inherent in reformed national accounts which is that they would move further and further away from any observable real prices to an increasingly abstract theoretical construction by economists. This would generate widely differing results for adjusted national product depending on different definitions and assumptions selected as the basis for calculating them. Anderson still expresses a view that approaches such as adjusted national product should be encouraged since they represent improvements but feels that:

> "Looked at historically.., current attempts to calculate various forms of adjusted national product may well be looked on primarily as a symptom of the decline of the dominance of GNP. In his classic discussion of paradigms in science Thomas Kuhn made the point that elaborate arrays of adjustments and provisions for large numbers of exceptional cases are signs that a particular paradigm has lost its usefulness and is on the way out." (Anderson, 1991: 41)

There have been several other attempts to adjust GNP/GDP to take account of some of its worst shortcomings. For example Repeto et al (1987) prepared detailed natural resource accounts for Indonesia and used these to present an adjusted 'Net Domestic Product'. While GDP increased at an average annual rate of 7.1% from 1974 to 1984 the researchers estimated that the 'net' domestic product, based on adjustments to take account of extraction of crude oil, timber and the exploitation of soils for crop production, rose by only 4% per year. Attempts have also been made to adjust national income accounting to include the real ecological costs of wealth production in France, Norway, and Australia (Moffatt, 1996). However, several authors have expressed their reservation about the usefulness of this approach. A major stumbling block is the problem of attempting to put a market value on parts of the ecosystem that have no monetary value(this is very similar to the problems experienced in the application of Cost-Benefit Analysis discussed earlier). Issues raised have included:

- that putting non-marketable environmental assets into monetary units will probably ignore many of the ecological functions which are crucial to the operation of any ecosystem but have no value to humans;
- placing all data into a monetary measure may ignore or seriously undervalue non-monetary aspects of the value of a feature to humans - for example the spiritual significance of a landscape feature;
- many natural resource accounting proposals are atheoretical as they lack any explicitly articulated understanding of economy-environment interactions;
- many of these approaches are static in their structure and they rarely examine the dynamics of environmental systems.

(Adapted from Moffatt, 1996: 64)

The potential strength of alternative economic indicators is that they offer the option of ameliorating at least some of the worse pitfalls of national income accounting applied as a measure of welfare, and in this sense can be seen as better than continuing with an unreformed GNP-growth focus. As so much national and international political attention focuses on national accounting measures some academics, especially economists, argue that the only acceptable solution will be to adopt an approach that adjusts rather than does away with GNP.

The weakness of adjusted national product approaches is that they incorporate some of the fundamental weaknesses of monetary valuation of social and environmental qualities, and then add in a range of further complications which can rather easily be used to discredit the alternative indicators in the eyes of mainstream economists without winning effective political support from environmentalists and social policy makers.

1.5.2 Alternative Indices of Welfare

An alternative to starting with national accounting measures and making adjustments is to seek to construct an explicit index of welfare to replace the use of GNP in this role.

A prototype quality of life index was developed in the late 1960s using a system of sliding weights for variables such as nutrition, shelter, health, leisure security, education and surplus income (Drenowski and Scott, 1968). This index was applied to twenty nations. A value of zero was taken to represent conditions under which human beings were just able to survive and a value of 100 represents full satisfaction of basic, physical, and cultural needs. Using this scale and 1960 data Uganda had an index of 37 and the USA 171. One useful aspect of this type of multivariate scale approach is that can it illustrate that there is not a linear correlation between a particular level of GNP per capita and 'quality of life'.

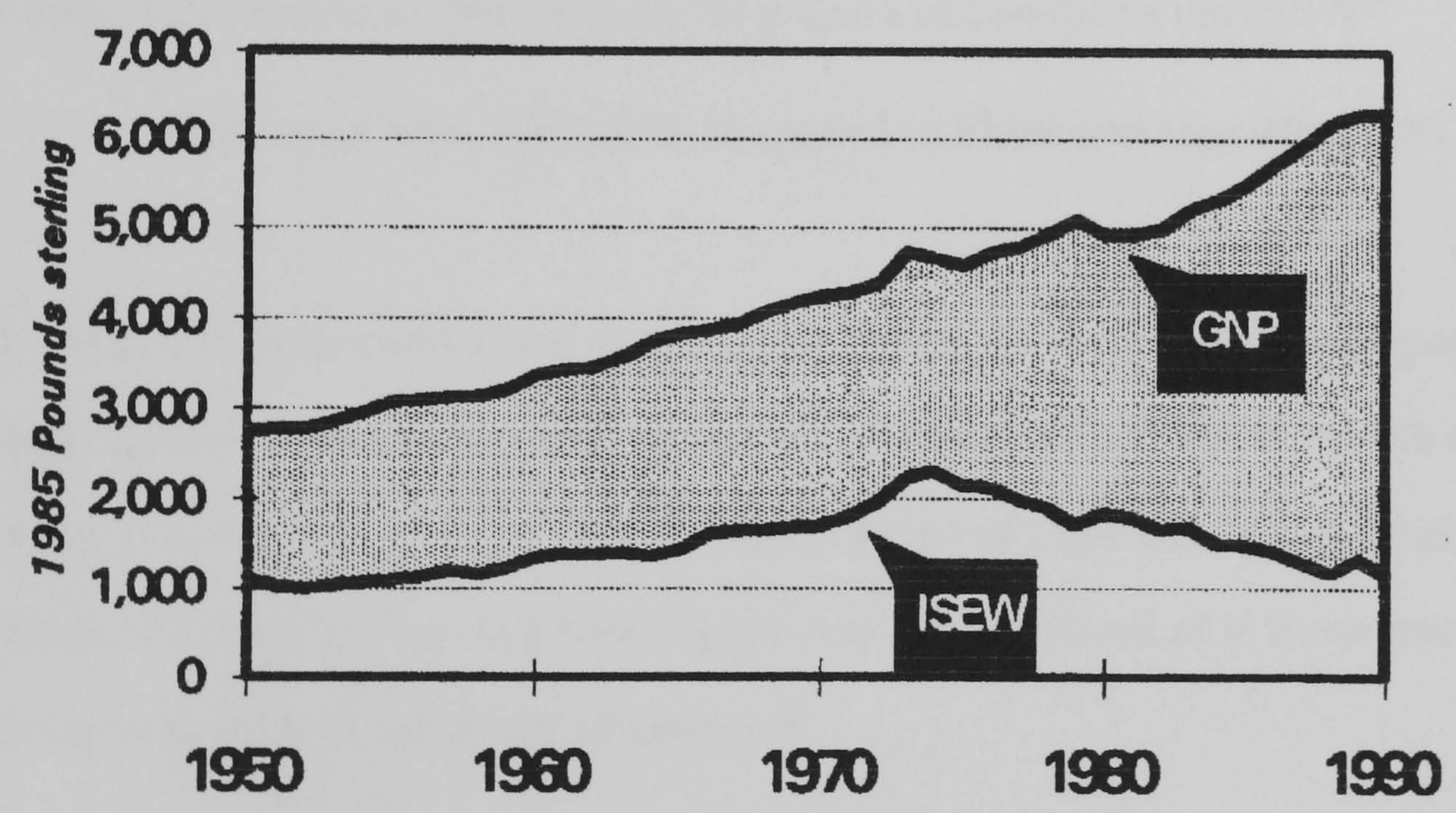
This approach has the advantage that it does not rely solely on monetary measures, indeed it helps to highlight that monetary measures alone can provide a poor assessment of quality of life. In Drenowski and Scott's (1968) approach the data can also be disaggregated so that regional patterns of quality of life can be identified. This is useful for exploring issues of equity within as well as between countries. A disadvantage of this early indicator was that it was a static snapshot rather than a dynamic process, although the methodology could have been reapplied on a year on year basis to create a timeseries for each nation provided the data was available.

A more recent multivariate indicator is the Index of Sustainable Economic Welfare (ISEW) developed by Daly and Cobb (see Daly & Cobb, 1989). The purpose of this indicator is to include costs of resource use and pollution, in this way it is similar

to some of the approaches to adjusted national product mentioned in 1.4.1 above. The formula for calculating ISEW is:

ISEW = Personal consumption
+ non-defensive expenditure
- defence expenditure
+ capital formation
- costs of environmental damage
- depreciation of natural capital

Figure 1.1 Index of Sustainable Economic Welfare and Gross National Product in the UK 1950-1990



(Macgillivray & Zadek, 1995)

An ISEW calculated for the UK 1950-1990 shows that whilst per capita GNP, measured in 1985 pounds sterling increases, the ISEW decreases from the mid-1970s (see Figure 1.1) This could be interpreted as the UK having entered an unsustainable trajectory, but such interpretations should be treated with caution. Any index of this kind is sensitive to the assumptions that underpin each

calculation. For example changing the base year gives a different pattern of relationship of ISEW to GNP. The weighting given to individual components also has a big impact, for example if unpaid domestic labour is omitted from the index there is a big change. But a dramatic shift on this issue could be considered to have a disproportionate impact on the index compared with, for example the component reflecting non-renewable resource depletion.

This is a perennial, and, arguably, insurmountable problem of aggregated indices. The whole index is sensitive to changes in the weighting and assumptions used to calculate each and every one of the elements comprised within it. Daly and Cobb freely admit the intractable nature of their task:

> "Nothing is better calculated to make one realise the difficulty of estimating economic welfare over time than the effort to devise an index.... We have been forced to make some heroic assumptions in the process of compiling the ISEW."
>
> (Daly and Cobb, 1990: 415-16 quoted in Ekins and Max-Neef, 1992: 232)

As the index is presented as an aggregated figure for each year the impact of the dynamic interplay of the various weighted elements is hidden from the casual observer. It is necessary to go into the small print of the calculations that underpin it in order to be clear how the final figure has been arrived at if these assumptions are to be understood, let alone challenged.

While ISEW may be said to include components that make it inherently a better measure of sustainability than GNP, in practice it may be no more effective at mobilising public interest or public support as it will only be accessible to a relatively limited number of educationally confident people within a community. In that sense it fails the test of the 1980s experience with eco-development. While publicising the contrasting trajectory of ISEW and GNP for a particular nation

state can be useful in highlighting the failings of GNP as an indicator of welfare to a wider non-specialist audience this approach does assume that people will trust the basis on which ISEW has been calculated at least as much if not more than the government data for GNP. This mitigates against securing the kind of broadbased cross-sectoral sense of ownership of problem and solutions that have been identified as a requirement to moving beyond the 1980s eco-development experience.

The alternative to the hazards inherent in aggregating many different kinds of data to produce a single figure is to abandon the idea of a single indicator in favour of a framework of indicators which show the various components under scrutiny individually. This approach presents fewer inherent methodological problems as it removes the need to weight the indicators in terms of their relative importance.

1.5.3 Indicators of Social and Environmental Progress

Measuring social progress

Indicators of poverty, inequality, housing quality and human health have been in use as a part of social policy discourse since Victorian times in the UK. However it was not until the mid-1960s that formal research into social indicators was inaugurated in the US. Between the 1960s and the 1980s there was a vigorous debate within the 'social indicators movement'. In the 1970s this debate began to be absorbed into the mainstream of social science with governments producing social statistics. The annual *Social Trends* (1976) in Britain is an example of the fruits of this social indicators movement. Typically such reports present statistics on major areas of social life - population change, economic issues, work and unemployment, education, health, social service, crime and so on. This material is presented in the form of tables, charts and graphs. Over a period of thirty years social reports have become institutionalised by the official statisticians of many countries.

By the late 1980s organisations such as the South Commission and the New Economics Foundation began to explore "new ways to measure development" (New Economics Foundation, 1989). At an international level UNICEF (1989) drew up a basic list of social indicators, omitting the environmental dimension of welfare. They present indicators for under-5 and under-1 infant mortality rates, male and female literacy rates, life expectancy at birth, income shares of the lowest 40 per cent and highest 20 per cent of the population, as well as GNP per capita. In 1993 the World Bank produced *Social Indicators of Development* which it describes as "the latest most reliable survey of social progress around the globe".

A wide range of thematic indicators have emerged from a diverse set of international and national agencies, research institutes and organisations involved in social accounting. Miles (1992) points out that certain types of statistic have cropped up repeatedly in discussion of quality of life and welfare issues:

> "education levels, health, housing, income and expenditure, leisure time and activities (sometimes including cultural and voluntary sector activities), nutrition, political participation, quality of working life, social security (both financial and in terms of security from threats of crime and other violence)" (1992: 292)

Measuring Environmental Progress

Prototype environmental indicators can be found in North America and Europe in the 1970s although they are said to have received mixed reviews and results (Macgillivary & Zadek, 1995). During the 1980s 'state of the environment' reports began to be produced drawing together a range of environmental statistics these focused either on whole countries or on regions based on administrative boundaries.

In 1991 the Organisation for Economic Co-operation and Development (OECD) pioneered the production of a comprehensive set of environmental indicators by producing *Environmental Indicators: a preliminary set* (OECD, 1991a) and *Environmental indicators: a progress report* (OECD, 1991b). This work formed the

basis of the *OECD Core Set of Indicators for Environmental Performance Reviews* (OECD, 1993 and 1994). Although the problem of weighting did not have to be addressed the OECD indicators illustrate that there are plenty of other methodological challenges in collecting and presenting a balanced framework of indicators. The indicators in these reports are systematically laid out, first assessing the state of the environment (air, water, land and living resources), then pressures on it (for example from energy, industry and agriculture) and finally a range of societal responses to the situation from the household, administration, enterprise and international perspective. The Canadian Government also had a pioneering role in the development of environment indicators and in 1991 produced *A Report on Canada's Progress Towards a National Set of Environmental Indicators.*

Much of the early work on environment indicators concentrated on human pressures - such as atmospheric emissions of pollutants, although over time the focus has broadened as the range of organisation types producing environment indicators reports has diversified. There were examples of individual companies, industry bodies and local authorities publishing environment reports by the early 1990s. Few obvious 'headline' environment indicators have emerged from this range of indicators reports. This may be because the attempt to identify a comprehensive range of appropriate environment indicators brings the researcher up against the difficulties of 'breaking into' the complex web of interconnected systems. Moffatt (1996) makes a case that although preserving the ecological integrity of ecosystems is a major message from the world conservation strategy and the Brundtland report (IUCN, 1980; WCED, 1987) there is currently quite a limited understanding of the ways in which many ecosystems function. Measures of specific pollutants on species have improved, but the critical thresholds that individual species can tolerate are not well understood. Moffatt sees this as an

important barrier to the development of effective environmental indicators, and to the modelling of ecological-economic interactions.

Social systems are equally complex, Miles for example states that:

> "Instead of trying to combine indicators together into one new summary measure, it is accepted that social life is so multidimensional, so rich, that it can only be illuminated (and even then only partly illuminated) by presenting different statistics alongside each other)." (Miles 1992: 289)

These comments illuminates one of the principal benefits of adopting an indicators approach rather than an adjusted national product or indices approach; that there is more scope for highlighting the limits to our current understanding within the body of the material being presented. Adjusted national product and welfare indices tend to draw people's attention to the 'bottom line' and keep the 'heroic assumptions' on which they are based hidden in the small print. Indicators approaches present a range of different issues and do not attempt to make a value judgement regarding the relative importance of one over another. Given the scientific uncertainties and inherent complexities of the issues under study this more transparent approach appears prudent.

1.5.4 Indicators of 'Sustainable Development'

It is only in the past ten years that action has been initiated to promote a more interdisciplinary approach which highlights both human and ecological well being. This delay may be related to the problems inherent in attempting to combine social and environmental indicators: to do so means facing all the problems of complexity within and also between these systems. Devising indicators of sustainable development raises the problem of what framework of 'development' to use in order to reconcile or indeed recognise potential conflict about human wellbeing and ecological wellbeing. The definitional debates around sustainable development are explored in more detail in section 1.7 below.

Prior to the Earth Summit there were few examples of indicators that could reasonably be described as indicators of sustainable development. Anderson (1991) concludes his review of 'Alternative Economic Indicators' by choosing twenty indicators for a 'Global Report'. His choices included secondary school enrolment ratios for boys and girls, hours worked per week and the rate of unemployment, the income of and assets owned by the richest and poorest quintiles, statistics of species loss, deforestation and carbon dioxide emissions and the energy intensity of GNP. In addition there were attempts to develop indices of sustainable economic welfare or of human development. But these were aggregated indices not frameworks of indicators.

It was not until after the Earth Summit that documents bearing the title 'sustainability indicators' or 'indicators of sustainable development' began to appear.

1.6 The Earth Summit, Agenda 21 and the Call for Indicators of Sustainable Development

1.6.1 The Earth Summit

It was against a background of serious environmental and social problems that the United Nations Commission on Environment and Development (UNCED), otherwise known as the Earth Summit, was convened in Rio de Janeiro in 1992. This event, held twenty years on from the Stockholm Conference, brought together the Heads of State and government officials of 179 countries, created a flurry of media attention and was roundly criticised by some for the assumptions that underpinned it, the way in which it was run and for the issues that it did not discuss. The written outputs of the event have, however, provoked considerable interest, not least among academics working on environment and

development issues. There were international agreements on Climate Change and Biodiversity, a statement of principles on Forests, the Rio Declaration of Principles on Environment and Development, and 'An Agenda for action in the 21st Century : a global partnership for sustainable development' (known as Agenda 21).

The impact of UNCED in tackling the horizons of elected politicians has been hotly debated. Two weeks after Rio the heads of the Group of Seven leading industrial countries met in Munich "and did not mention a word about Rio or the environment" (Suzuki, 1995), and there is limited evidence to date that that Rio has influenced international electoral politics. What has been debated at some length is the scope and extent of the impact of the Earth Summit on the process of nurturing sustainable development 'from the bottom up'.

Rich identifies the great paradox of the Earth Summit:

> "that it occurred because of growing popular discontent all over the world with the ecological deterioration of the planet.., UNCED was monstrously unwieldy, and illustrated the inadequacies of attempting to address the ecological aspects of what was now a global industrial civilisation through a convocation of representatives of 172 nation states. Worse, it marginalised thousands of citizens' groups from around the world as a folkloric sideshow..." (1994: 272)

At the Global Forum (the gathering of non-governmental and citizen's organisations, which was held separately 30 miles away from the Heads of State gathering) on the penultimate day of the Earth Summit, there was a discussion of the topic "Who will rule the world after Rio - the Bretton Woods Institutions, the United Nations, or the people?" Rich describes one of the contributions to this debate:

> "an elderly, distinguished gentleman from India rose to the microphone. To loud applause, in a vigorous voice he declared that *the question should not be who will rule, the question should be how will the people rule. It was the people who brought the government to this forum* ." (1994: 273)

Much of the 'nurturing role of UNCED', if it can be said to have one, rests on the content and ethos of (parts of) 'The Agenda for Action in the 21st Century' a title usally shortened to 'Agenda 21' (UNCED, 1992). This was a key output of the Earth Summit. Although Agenda 21 is not legally binding and contains little in the way of definite commitments and targets some commentators (see for example Gordon, 1993) have argued that its strength lies in its emphasis on processes of improvement. It has potential specifically because at least some sections of it focus on local and community based action taking place within an enabling national framework, rather than traditional top down approaches which place the nation state centre stage and ignore or downgrade the role of other institutions and groups.

Agenda 21 identifies the actions and rights to consultation of nine "major groups": women, youth, indigenous peoples, business, trade unions, local authorities, farmers, scientists and professional and campaign groups (non-government organisations - NGOs). Each of the major groups is supposed to make its own contribution, for example campaign groups and voluntary bodies are asked to work in partnership with government and business on experimental efforts to overcome the blockages to change. Scientists are to put their complex understanding of what is happening in the natural world in terms simple enough for both government and the ordinary public to understand (Roddick, 1994).

Every government was to be required to submit an annual report on their overall progress on all the issues outlined in Agenda 21, plus a thematic report covering specific chapters of Agenda 21 which are reviewed on a cyclical basis. Responsibility for monitoring these reports rests with the Commission on Sustainable Development (CSD) which has the power to update all the Earth Summit agreements. NGOs/ major groups have the right to be represented at the CSD (unlike at the Earth Summit) and the CSD will be asking not only for baseline monitoring of reports but aims to

develop permanent relationships with NGOs/major groups and the promotion of international alliances. In addition the political complexion of the negotiations is intended to enhance the profile of NGOs /major groups with governments in the hope that they recognise the NGOs /major groups might be a vehicle for reconciling societies back home to the need for change (Roddick, 1993).

Gordon (1993) cautions that approaches based on partnership and participation can only work if a sufficient number of people from different backgrounds and with different perspectives on the problems are both aware of the opportunity and take the time to make use of it. The importance of focusing "capacity building" (training and empowerment) at a local community level in order to support a community driven approach to sustainability is stressed repeatedly in Agenda 21 and National Sustainability Strategies and national assessments of the need for capacity building are to be worked out in conjunction with the representatives of the "major groups" (Roddick, 1994).

There have been plenty of criticisms of the Earth Summit, both in terms of its process and its outputs. Rich (1994) for example was very critical of the issues that were not discussed, the people who were not allowed to take part (see above) and the pro-growth assumptions underpinning the event:

> "growth is the solution (or, there can be no solution without growth);
>
> global economic integration will contribute to solving global ecological problems;
>
> foreign assistance and investment will make things better"
>
> (Korten, 1992 quoted in Rich, 1994)

Moffatt draws attention to the inconsistencies contained in the outputs of the event:

"Inevitably, such meetings result in compromises agreed over negotiations between different pressure groups and other vested interests. More disturbing, however, is the fact that the principles written as the Rio Declaration, which were announced at the end of the summit, are derived from different paradigms concerning the role of humanity and the natural world. Furthermore, without subjecting these principles to a careful critique they run the risk of offering little real guidance to individuals and groups who wish to make the concept of sustainable development operational and put it into practice in their everyday lives." (Moffatt, 1996: 6)

He also draws attention to the issues that were not discussed, and the lack of legal weight behind Agenda 21. However, with that as a rider, he identifies Agenda 21 in particular as representing a good start in promoting sustainable development at different geographical scales and commends the emphasis on co-operation and a 'bottom-up' approach.

> "The real impact of Agenda 21 will depend upon the extent to which national governments and all the various groups discussed in the document, from local councils to trade unions and scientific groups, business and industry, absorb and pursue the recommendations therein, influenced also by the continued efforts of environmental and development groups." (Moffatt, 1996: 23)

1.6.2 Agenda 21 and the Call for New Measures of Progress

Two Chapters of Agenda 21, Chapter 8 and Chapter 40 contain specific objectives regarding the need to develop measurement and reporting processes that are more effective than GNP for reflecting the environmental and social consequences of economic activity. However, the approaches proposed in these two Chapters are inconsistent focusing on different geographic levels and lacking agreement as to whether existing national accounting approaches need to be complemented or replaced.

Chapter 8 *Integrating Environment and Development in Decision Making* looks primarily at national and international issues and calls for the limitations of

economic accounting approaches to be ameliorated by the production of 'satellite accounts':

> "..As sustainable development encompasses social, economic and environmental dimensions, it is also important that national accounting procedures are not restricted to measuring the production of goods and services that are conventionally remunerated. A common framework needs to be developed whereby the contributions made by all sectors and activities of society, that are not included in the conventional national accounts, are included, to the extent consistent with sound theory and practicability, in satellite accounts. A programme to develop national systems of integrated environmental and economic accounting in all countries is proposed."
>
> (Agenda 21 Chapter 8. 41 (UN, 1992))

Satellite accounts are seen as complementing rather than substituting for traditional national accounting practices for the foreseeable future (Chapter 8.42) however, the issue of how Integrated Environmental and Economic Accounting (IEEA) is supposed to play an integral part in the national development decision making process (8.42) whilst the internationally recognised accounting process continues to be based on GNP is not addressed.

Chapter 8 does, however, recognise the need for dialogue between a diverse range of actors in order to develop effective approaches to environment and development:

> "Prevailing systems for decision making in many countries tend to separate economic, social and environmental factors at the policy, planning and management levels. This influences the actions of all groups in society, including Governments, industry and individuals, and has important implications for the efficiency and sustainability of development. An adjustment or even a fundamental reshaping of decision-making in the light of country-specific conditions may be necessary if environment and development is to be put at the centre of economic and political decision making, in effect achieving a full integration of these factors. ... New forms of dialogue are also being developed for achieving better integration among national and local government, industry, science and environmental groups and the public in the process of developing effective approaches to environment and development. The

responsibility for bringing about changes lies with Governments in partnership with the private sector and local authorities, and in collaboration with national, regional and international organisations, including in particular UNEP, UNDP and the World Bank...." (Agenda 21 Chapter 8.2 (UN, 1992))

Chapter 40 *Information for Decision Making* the focus for action is more individual and local:

"40.1 In sustainable development, everyone is a user and provider of information considered in the broadest sense. That includes data, information, appropriately packaged experience and knowledge. The need for information arises at all levels, from that of senior decision makers at the national and international levels to the grass-roots and individuals levels." (UN, 1992)

Chapter 40 looks primarily at:

- gaps in the availability, quality, coherence, standardisation and accessibility of data between developed and developing countries;
- the lack of capacity for the collection and assessment of data; the need to improve coordination among environmental, demographic, social and developmental data and information activities; and
- the need to develop new indicators of sustainability.

The new measures of progress called for in Chapter 40 are neither limited to national and international geographic levels nor to a separate and parallel process of satellite accounts:

"Commonly used indicators such as the gross national product (GNP) and measurements of individual resource or pollution flows do not provide adequate indications of sustainability. Methods for assessing interactions between different sectoral environmental, demographic, social and developmental parameters are not sufficiently developed or applied. Indicators of sustainable development need to be developed to provide solid bases for decision-making at all levels and to contribute to a self-regulating sustainability of integrated environment and development systems."
(Agenda 21 Chapter 40.4 (UN, 1992))

That two Chapters of Agenda 21 tackle the same issues in different ways can be seen as symptomatic of the way in which Agenda 21 was negotiated and finalised as discussed by Moffatt (1996) above.

The role of local government in making progress towards sustainable development is a key part of this thesis. Local government has a whole chapter in Agenda 21, Chapter 28: *Local Authority Initiatives in Support of Agenda 21,* (which is addressed in detail in section 1.8 of this thesis) however there is no specific mention of sustainability indicators, or IEEA, or of a local dimension or local impacts of proposed changes in measurement and reporting mechanisms. Chapter 40 does mention local communities and resource users under 'Activities to strengthen the capacity for traditional information':

> "Countries, with the co-operation of international organisations should establish supporting mechanisms to provide local communities and resource users with the information and know-how they need to manage their environment and resources sustainably, applying traditional and indigenous knowledge and approaches when appropriate. This is particularly relevant for rural and urban populations and indigenous, women's and youth groups." 40.11 (UN, 1992)

However, elsewhere in Chapter 40 is section 40.7 which contains an innocent enough sounding call for harmonised development of indicators:

> " The organs and organizations of the United Nations system, in co-ordination with other relevant international organizations, could provide recommendations for harmonized development of indicators at the national, regional and global levels, and for the incorporation of a suitable set of these indicators in common, regularly updated and widely accessible reports and databases, for use at the international level, subject to national sovereignty considerations." 40.7 (UN, 1992)

The danger implicit in this call rests on two principal issues. The first problem is that if there are limited resources for collecting and publishing data, then developing indicators for comparison across different regional or states will take

precedence (particularly in the eyes of national funding institutions) over the need to develop indicators for local action. The second danger lies with how these indicators for comparison are used. The Commission for Sustainable Development quickly became embroiled in a debate over the tensions between harmonization of international indicators and subsidiarity and the rights of states to set their own priorities for data collection. The harmonisation-subsidiarity debate took two sessions of the CSD and considerable negotiation to address (Moldan & Billharz, 1997).

In addition to the coverage in Chapters 8 and 40 there are also references to the need for new indicators and processes of decision making in Chapters 4, 10 and 15. Chapter 4: *Changing consumption patterns* calls for changes in national accounts and for other indicators of sustainable development.

> "4.11 Consideration should also be given to the present concepts of economic growth and the need for new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles and are less dependant on the earth's finite resources and more in harmony with the earth's carrying capacity. This should be reflected in the evolution of new systems of national accounts and other indicators of sustainable development." (UN, 1992)

Chapter 10: *Integrated approach to the planning and management of land resources,* and Chapter 15: *Conservation of Biological Diversity* give detailed coverage of the need to involve all sectors of the community in decision making and Chapter 10 also stresses that the needs of both men and women should be taken into account. Of the Chapters in Section 3 of Agenda 21: Strengthening the Role of Major Groups only Chapter 24: *Global action for women towards sustainable and equitable development* specifically mentions the need for new indicators of progress as a part of the process of capacity building:

"24.8 Countries should develop gender-sensitive databases, information systems and participatory action-oriented research and policy analyses with the collaboration of academic institutions and local women researchers of the following:

(b) the impact of structural adjustment programmes on women. In research done on structural adjustment programmes special attention should be given to the differential impact of these programmes on women, especially in terms of the cutbacks in social services, education and health and in the removal of subsidies on food and fuel;

(c) the impact on women of environmental degradation...

(e) the integration of the value of unpaid work including work that is currently designated 'domestic' in resource accounting mechanisms in order to better represent the true value of the contribution of women to the economy, using the revised guidelines for the United Nations System of National Accounts, to be issued in 1993." (UN, 1992)

The purpose of quoting at some length from Agenda 21 is to give a sense of the multitude of different 'agendas' it actually encompasses. By making selective quotations it is possible to use it to support a whole range of different political viewpoints - which is something that can also be said for the UNCED process as a whole. Agenda 21 is interesting however, as an example of the debate and the impetus for local action that can be stimulated through the negotiation, publication and associated media and academic attention to a document which has no legal weight whatsoever.

As far as the development of indicators goes Agenda 21 and the negotiating process around the Earth Summit has succeeded in raising the need for new indicators of sustainable development at local, national and international levels. There has certain been a considerably higher output of indicators work that has a strong relationship with generating feedback on sustainable development issues, even where the work is not labelled up as 'Sustainable Development Indicators'.

1.7 Sustainable Development - Language, Values and Action

1.7.1 Growth, Progress and Sustainable Development

In parallel to the increase in work on new measures of progress which has followed in the wake of the 1992 Earth Summit has been an increase in the number of definitions of the terms 'sustainability' and 'sustainable development'. By 1989 the number of definitions of sustainable development identified in the academic literature ran to 13 pages (Pearce et al, 1989) and after the Earth Summit there were thought to be 153 definitions in circulation (Church, 1994). The unresolved debate over defining 'sustainable development' create obvious hazards for attempts to devise frameworks of 'sustainable development' indicators. For this reason this section will review some of the key debates played out in this definitional circus. It will then address the question of how best to proceed with framing sustainable development indicators in the light of this uncertainty.

The most oft-quoted definition of sustainable development in the social policy literature is the following version of the 'Brundtland definition':

> "Development that ensures the needs of the present without compromising the ability of future generations to meet their own needs."
>
> (WCED, 1987: 42)

This definition focuses primarily on human need. It can be contrasted with the definition which appears most frequently in the nature conservation literature, the 'UNEP' definition which stresses the ecological pressures and limits:

> "..improving the quality of life while living within the carrying capacity of supporting ecosystems." (UNEP, 1991)

Both these definitions were developed by large, interdisciplinary groups, representing the perspectives of high and low-income countries. These groups were wrestling with what could be done to tackle the scale and intensity of environmental and social problems that we are facing. There was a recognition of the need to integrate environmental policies and development strategies. The concept of 'sustainable development' was designed to provide a framework for this process of integration.

The Brundtland report did, however, contribute to the confusion surrounding the process of defining sustainable development at an early stage by offering several different definitions at different points in the text, enabling people to selectively quote their own preferred 'Brundtland definition':

> "Humanity has the ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs." (WCED, 1987: 8)

> "Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future. Far from requiring the cessation of economic growth, it recognises that the problems of poverty and under development cannot be solved unless we have a new era of growth in which developing countries play a large role and reap large benefits." (WCED, 1987: 40)

> "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:
>
> - the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
> - the idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet present and future needs."
>
> (WCED, 1987: 43)

The wish by the Brundtland Commission to promote integration between environment and development was laudable. However the framing of the

process of integration dragged with it critical and unresolved conflicts regarding the role of economic growth in achieving 'development'. A case can be made that it is the lack of common agreement over what development means and what is necessary to achieve it that makes juxtaposing the terms "sustainable" and "development" so difficult (Redclift, 1992a).

Box 1.6 Sustainable Growth and Sustainable Development

Economic growth means that real Gross National Product (GNP) per capita is increasing over time. But observation of such a trend does *not* mean that growth is "sustainable".

Sustainable economic growth means that real GNP per capita is increasing over time *and* the increase is not threatened by "feedback" from either biophysical impacts (pollution, resource problems) or from social impacts (social disruption).

Sustainable development means that per capita utility or well-being is increasing over time.
or
Sustainable development means that a set of "development indicators" is increasing over time.

For both definitions of sustainable development, the same feedback requirements apply. The wider concept of sustainable development - the last one - allows for this by including environmental requirements a condition to be fulfilled before development can be said to be sustainable. The same analysis could be applied to social feedback.

Pearce, Markandya & Barbier, 1989: 33

Sustainable development means *either* that per capita utility or well-being is increasing over time with free exchange or substitution between natural and man-made capital *or* that per capita utility or well being is increasing over time subject to non-declining natural wealth. There are several reasons why the second and more narrow focus is justified, including:

- non-substitutability between environmental assets (the ozone layer cannot be recreated);

- uncertainty (our limited understanding of the life supporting functions of many environmental assets dictates that they be preserved for the future);
- irreversibility (once lost, no species can be recreated); and,
- equity (the poor are usually more affected by bad environments than the rich).

(Holmberg & Sandbrook, 1991: 22)

Box 1.7 The Sustainability Spectrum

	TECHNOCENTRIC		ECOCENTRIC	
	Cornucopian	Accommodating	Communalist	Deep ecology
Green labels	Resource exploitative, growth-orientated position	Resource conservationist and 'managerial' position	Resource preservationist position	Extreme preservationist position
Type of economy	Anti-green economy, unfettered free markets	Green economy, green markets guided by economic incentive instruments [EIs] (eg pollution charges etc)	Deep green economy, steady-state economy regulated by macro-environmental standards and supplemented by EIs	Very deep green economy, heavily regulated to minimise 'resource-take'
Management strategies	Primary economic policy objective, maximise economic growth (Gross National Product [GNP])	Modified economic growth (adjusted green accounting to measure GNP)	Zero economic growth; zero population growth	Reduced scale of economy and population
	Taken as axiomatic that unfettered free markets in conjunction with technical progress will ensure infinite substitution possibilities capable of mitigating all 'scarcity/limits' constraints (environmental sources and sinks)	Decoupling important but infinite substitution rejected. Sustainability rules: constant capital rule	Decoupling plus no increase in scale. 'Systems' perspective – 'health' of whole ecosystems very important; Gaia hypothesis and implications	Scale reduction imperative; at the extreme for some there is a literal interpretation of Gaia as a personalised agent to which moral obligations are owed
Ethics	Support for traditional ethical reasoning: rights and interests of contemporary individual humans; instrumental value (i.e. of recognised value to humans) in nature	Extension of ethical reasoning: 'caring for others' motive – intragenerational and intergenerational equity (ie contemporary poor and future people); instrumental value in nature	Further extension of ethical reasoning: interests of the collective take precedence over those of the individual; primary value of ecosystems and secondary value of component functions and services	Acceptance of bioethics (ie moral rights/ interests conferred on all non-human species and even the abiotic parts of the environment); intrinsic value in nature (ie valuable in its own right regardless of human experience)
		Blueprint view ↙ ↘		
Sustainability labels	Very weak sustainability	**Weak sustainability**	**Strong sustainability**	Very strong sustainability

Pearce et al. 1993: 18-19

In 1989 Pearce et al, in *Blueprint for a Green Economy* set out definitions of some of the terms being used in the development debate. Holmberg & Sandbrook adapted this table in *Policies for a Small Planet* which was published in 1992 just prior to the Earth Summit (see Box 1.6). In their revisions to the table theypointed out that poverty, as well as social disruption should be taken into account as negative "feedback" in relation to economic growth. They also added more detail into the definitions of sustainable development.

This issue of substitutability of man-made and natural capital has become used to create a further definitional divisions: between 'weak sustainability' and 'strong sustainability' and attempts to identify relationships between sustainability definitions and alternative economic/environmental ideologies (see Box 1.7 The Sustainability Spectrum Pearce, 1993: 18-19).

There are hazards in wading too deeply into the semantic morass of a 'growth-versus-sustainability' debate. Several commentators question whether the lack of clarity about the meaning of the term 'sustainable development' is actually a problem in relation to practical action. Holmberg and Sandbrook argue that for the pragmatist the vagueness of the term sustainable development has no real drawbacks.

> "The powerful intuitive idea underlying the concept of sustainable development is one of *intergenerational equity*: our development is sustainable only to the extent that we can meet our needs without prejudice to future generations. This is similar in its intuitive appeal to concepts such as 'freedom' and 'justice'. While there is broad agreement around the world about what such terms mean, the actual achievement of human freedom, justice and sustainable development will be specific to local conditions and possibilities (Holmberg, Bass and Timberlake, 1991: 23)."

Pearce makes a similar point:

"The phrase 'sustainable development' has staying power because most people want to believe in it. It survives because it appears to build bridges between the demands of environmentalists and developers. It is an article of faith, and in that sense almost a religious idea, similar to justice, equality and freedom. Indeed, when it reaches a par with these grand goals, it will have arrived at the first stage in its long journey of transition." (1993: 184)

O'Riordan and Voisey elaborate this idea by posing a view that the ephemeral quality of sustainable development is an inevitable feature of the treacherous terrain of the early phases of this transition:

> "the current approach to sustainable development can only be a chimera, a theoretical position that attracts attention, stimulates debate, and raises awareness about the scope and interconnected complexities of the changes that will have to be made in the transition to a less unsustainable world. This is the phase we are in now. Very little has been achieved to change course, and the institutions of social and economic order have yet to respond in any meaningful way, but a beginning has been made." (1997: 2)

However, leaving sustainable development as an emphemeral notion creates a problem for using the concept as the basis of devising new measures of progress.

1.7.2 Sustainable Development: A Learning Process

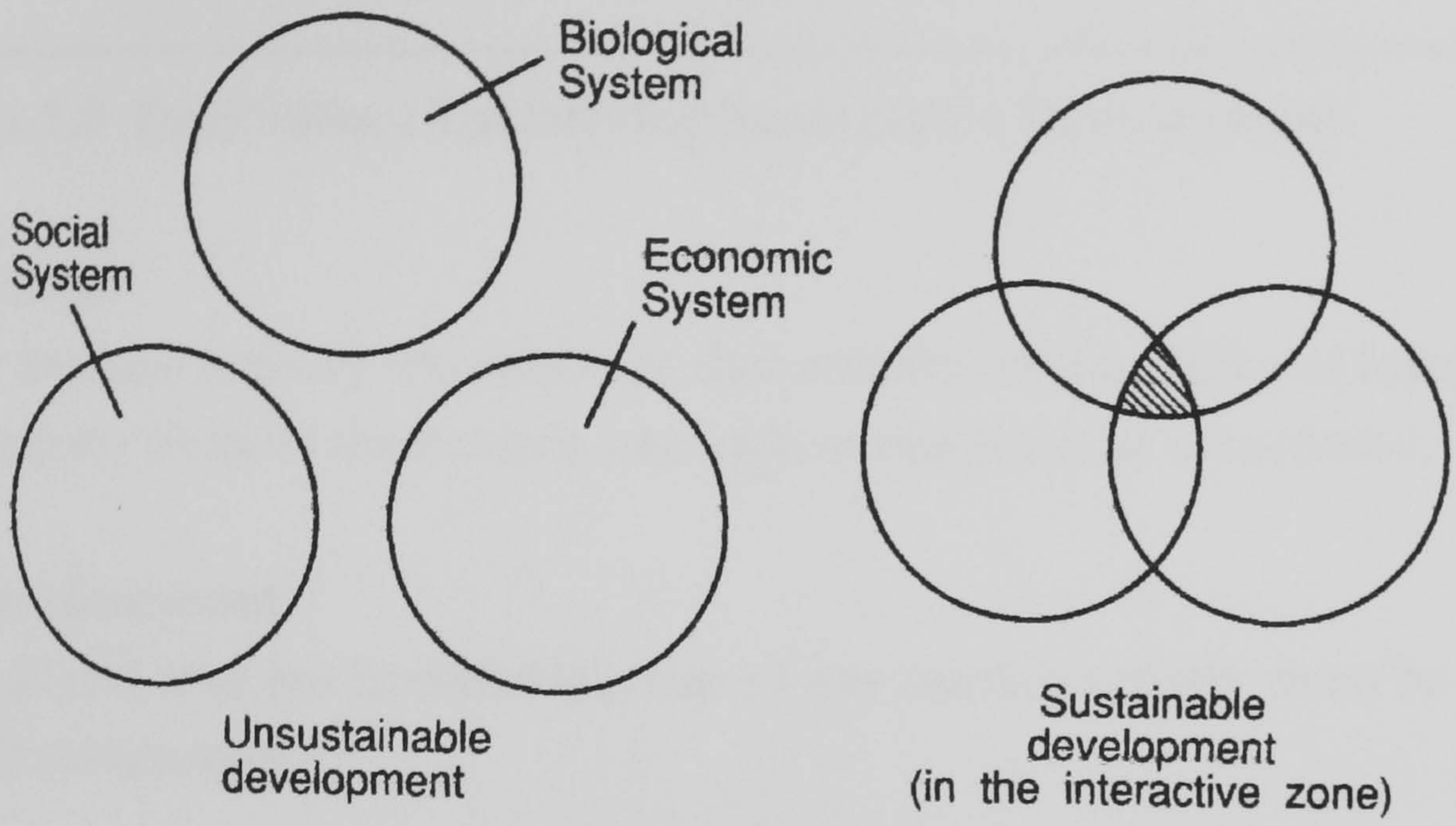
It has been well documented in the literature that a process of timely feedback is important in both individual and organisational learning (for example Kolb, 1984; Senge, 1990). In order for feedback to be useful to learning there needs to be a clear and well-understood frame of reference regarding the current state and the desired direction of progress. For a concept of 'sustainable development' to be used as a feedback mechanism for individual and organisational learning it follows that there needs to be a clear statement of what 'sustainable development' means and the basis upon which activity can be seen as progress towards it. However, it is not necessary to prove this framing of sustainable development to be universally applicable. The ecological and social diversity of

our planet make it very difficult to frame a concept of sustainable development that would apply in all places and at all times. Recognition that sustainable development is contextual, and that the boundaries of describing 'what is', and 'what is not' sustainable development are all about improving our understanding of the social and ecological contexts in which we are seeking to take action.

This way of looking at the definitional debate is a key part of the research process upon which this thesis is based. If the quest for a transition to a more sustainable way of living is to become more than a minority interest - and to make any headway it is essential that there is broad ownership of such an agenda (as illustrated by the failure of the eco-development in the 1980s). For this to happen the debate about the nature of the changes that will have to be made needs to be conducted in language that is accessible to the people who are going to have to act to enable these changes to happen. This is a much much wider population that the linguistic frames of any academic discipline can successfully engage. The language that needs to be used must clarify rather than obscure the nature of the debates and state clearly what sustainable development is taken to mean in the particular context in which the term is being applied. If this approach is taken it creates an opportunity to make explict that there is still a need to learn 'what sustainable development is' in a local context, not just 'how to achieve it'. This makes 'sustainable development' a matter of work in progress rather than another normative imposition that adds to a sense of alienation from the process of change.

Some commentators have adopted this approach already, stating what they believe to be the key conceptual building blocks of a working definition. For example Church proposes that:

Box 1.9 Sustainable Development as a Process of Trade-offs



Barbier (1987)

"however we define it sustainable development means that we need to link Environmental Protection with Increasing Social Equity and Ensuring Economic Security for all." (1994: 5).

This approach has been of value in encouraging environmental groups to acknowledge the social agenda, and groups with a social focus to recognise how their experiences overlap with the environmentalist agenda. A similarly integrationist approach is adopted by Bosworth (1993) who proposes four values upon which sustainable development rests - futurity, environment, equity and participation (see Box 1.8). The first two values deal with the term 'sustainable', and the second two with the term 'development':

Such a framework of principles is still open to a process of redefinition, but, if it serves the purpose of flagging up that **all 4** values - futurity, environment, equity and participation - are an integral part of achieving sustainable development

then it can play a useful role in the development and assessment of policies and action plans.

Box 1.8 Four Values Underlying Sustainable Development

The Future
In any human activity the effects of that activity on the ability of future generations to meet their needs and aspirations must be considered;

The Environment
The full and true environmental costs of any human activity must be taken into account;

Equity
Control over resources must be much more evenly distributed both within and amongst countries;

Participation
Development requires that people can share in decision-making about goals and about the means of development, and that they can also take an active role in pursuing them. This implies a degree of education about the process of development.

Bosworth, 1993

Another way of encouraging people to grasp the underlying concepts is to work with visual models. These can be useful in helping people to hold in their minds the various interrelated aspects of sustainable development. For example, Barbier (1987) used three circles to denote the three systems that he identified as basic to any process of development: the biological or ecological resource system, the economic system and the social system. He used a circle to represent each system (Box 1.9). Barbier proposes that human society applies a set of goals to each system, each with its own hierarchy of sub-goals and targets. The objective

of sustainable development will then be to maximise goal achievement across these three systems at the same time through an adaptive system of trade-offs. It will not be possible to maximise all goals all the time, and there may be conflict among -system goals; choices must therefore be made as to which goals should receive greater priority as different development strategies will assign different priorities.

Barbier's illustrative system goals are:

Biological system goals	~ genetic diversity ~ resilience ~ biological productivity
Economic system goals	~ increasing the production of goods and services ~ satisfying basic needs of reducing poverty ~ improving equity
Social system goals	~ cultural diversity ~ social justice ~ gender equality ~ participation

In unsustainable development processes the three systems are treated as though they are separate and goals are maximised with no regard for the trade offs involved. This is illustrated in the left-hand diagram in Box 1.9. An example of this is the current practice of attempting maximum production of goods and services with no regard to biological resilience, genetic diversity, social justice or participation. Another example is the protection of wildlife habitats to preserve genetic diversity by forcibly keeping away poor people and without providing them with alternative livelihood opportunities. The right-hand diagram in Box 1.9 illustrates an improvement in the sustainability of development as an increase in the amount of overlap by the 3 'system circles': as development becomes increasingly sustainable the system goals overlap. For system goals to overlap either considerable integration of goals must be achieved or serious trade-offs must be made.

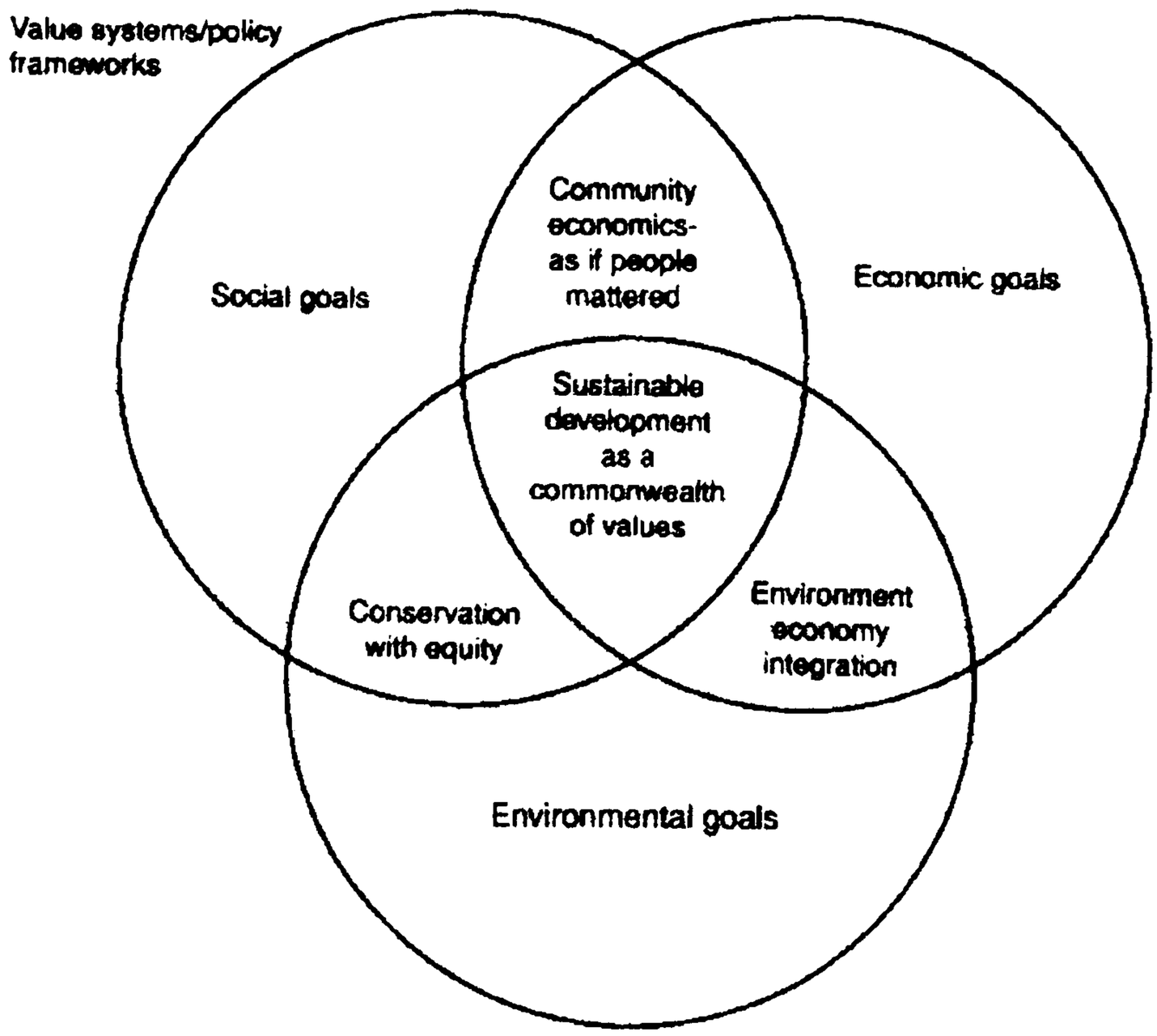


Figure 1.2 A systems perspective on sustainable development Reed and Webber 1995

The three circles system model for describing sustainable development cannot, of course, be applied in a universal fashion because the interactions among the different system goals change with changes in the scale at which issues are looked at: from the local to the regional, the national or even the global level. The choice of sustainable development goals to be pursued at, say, national level may therefore differ from those advocated at the local level (Holmberg and Sandbrook, 1992). However as a simple, intuitive and visual model the 'three circles', can be a much more effective tool than seeking to apply a complexly worded definition to everyday practice. This three-circles visual model has been adopted by several other authors although a wide range of different labels are applied to the overlaps between the circles. Examples include Reed and Webber (1995) (Figure 1.2) and Macnaughten et al 1995 (Figure 1.3) which uses this model for the present situation and identifies a process for getting from this

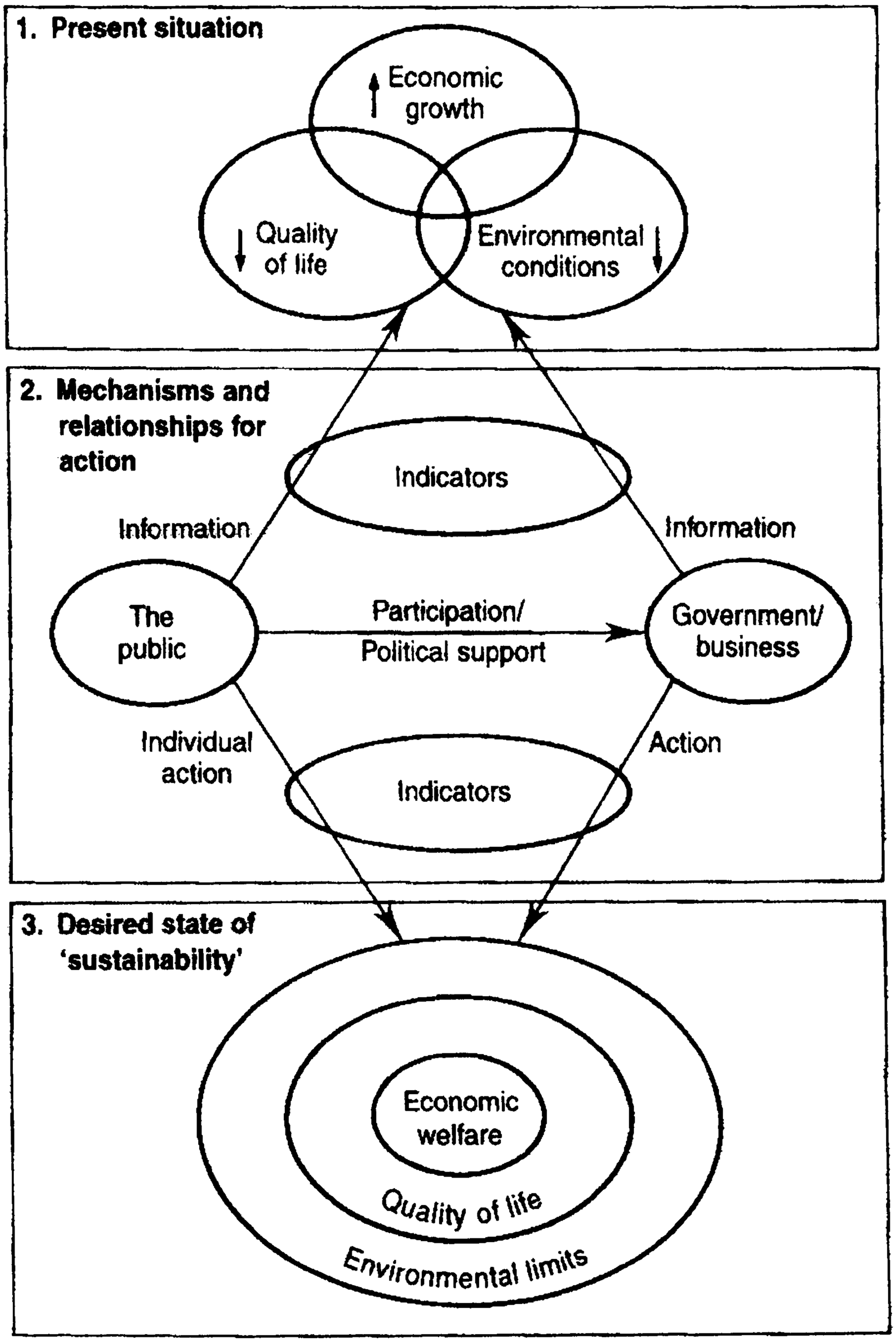


Figure 1.3 Model of Sustainability and the Role Envisaged for Indicators. (Macnaughten, Grove-White, Jacobs and Wynne (1995))

situation to a desirable future. The Macnaughten et al model identifies the role envisaged for 'sustainability indicators'.

In summary the evidence set out above suggests that it is essential that ecological, social and economic threads of sustainable development are explicitly identified, but exactly what terminology is used is a matter of personal, organisational or disciplinary preference. There can be no universally appropriate form of words. It is, however, essential that any definition includes a plain language statement of what is meant by the words chosen.

A further semantic debate also exists around whether the terms sustainability and sustainable development are interchangeable. Reid in *Sustainable Development: An introductory guide* struggles with this, and the conclusion he draws serves to illustrate how convoluted the definitional debate has become:

> "A review of the literature shows that sustainable development and sustainability are used with a range of meanings. 'Sustainable development' usually refers to the process (of) "developing in a sustainable way...and also to the "goal" of that process; 'sustainability' refers to the concept of sustainable development, and also - confusingly - both to a state of sustainable resource use, not necessarily the same as sustainable development, as in 'ecological sustainability' and to a state in which the goals of sustainable development have been achieved." (1996: xiv)

I have found that in the literature around indicators the decision regarding which term to use appears to rest on custom and practice rather than conceptual foundations. Sustainability was the term adopted at an early stage of the work of the Local Government Management Board (LGMB, for example Framework for Sustainability, LGMB 1993, Sustainability Indicators Research Project 1994a) and, apparently as a result of this precedent, many UK local authority publications adopt this usage. However the UK government preferred the term Indicators of Sustainable Development for its report published in 1996, probably

because this work was first proposed in Sustainable Development: The UK Strategy.

On the basis that sustainability can be viewed as implying a static state and sustainable development implies a process I have adopted the use of the term sustainable development indicators throughout this thesis, unless I am referring to work that has been given the title of sustainability indicators by others.

1.8 Local Government and Sustainable Development

1.8.1 Local Government and the Earth Summit

> "Current estimates suggest ...that over two thirds of Agenda 21 commitments cannot be delivered without the commitment and cooperation of local government."
>
> (Gordon, 1993)

> "As one of the leading agencies working to protect the quality of the local environment, and as the level of government closest to the citizen, local authorities have a vital role to play in delivering sustainable development."
>
> (Bosworth, 1993)

> "No organisation or group is more important than local authorities when it comes to following up the Brazil Conference"
>
> (Maurice Strong, (Secretary General of UNCED), 1992)

Local government world-wide went to UNCED with an agreed common agenda, placing them in a rare position amongst the many groups in Rio. They succeeded in securing a separate chapter in Agenda 21. Chapter 28: *Local Authority initiatives in support of Agenda 21* outlines the following Basis For Action:

> "**28.1** Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. Local authorities

construct, operate and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations and assist in implementing national and sub-national environmental policies. At the level of governance closest to the people, they play a vital role in educating, mobilising and responding to the public to promote sustainable development." (UN, 1992: 233)

The Objectives of the programme areas were:

"**28.2**

(a) By 1996, most local authorities in each country should have undertaken a consultative process with their populations and achieved a consensus on "a local Agenda 21" for the community;

(b) By 1993, the international community should have initiated a consultative process aimed at increasing co-operation between local authorities;

(c) By 1994, representatives of associations of cities and other local authorities should have increased levels of cooperation and coordination with the goal of enhancing the exchange of information and experience among local authorities;

(d) All local authorities in each country should be encouraged to implement programmes which aim at ensuring that women and youth are represented in decision-making, planning and implementation processes."(UN, 1992: 233)

It is only the first of these objectives that has been widely publicised as a commitment for individual local authorities and there has been almost no explicit coverage of objective (d) even though this would fit with the social strategy work carried out by local authorities for equal opportunities purposes. The Chapter also goes on to identify specific activities for local authorities to carry out. Again these have been unevenly reported, with the main emphasis being placed on the production of 'a local Agenda 21':

"**28.3** Each local authority should enter into a dialogue with its citizens, local organisations and private enterprises and adopt 'a local Agenda 21'. Through consultation and consensus building, local authorities would learn from citizens and from local civic, community business and industrial organisations and acquire the

information needed for formulating the best strategies. The process of consultation would increase household awareness of sustainable development issues. Local authority programmes, policies, laws and regulations would be assessed and modified, based on local programmes adopted. Strategies could also be used in supporting proposals for local, national, regional and international funding." (UN, 1992: 233)

Activity 28.4 focuses on fostering partnerships among organisations "with a view to mobilising increased international support for local authority programmes" and stresses that "an important goal would be to support , extend and improve existing institutions working in the field of local authority capacity-building and local environmental management." And activity 28.5 states that "Representative associations of local authorities are encouraged to establish processes to increase the exchange of information, experience and mutual technical assistance among local authorities." Under the heading 'Means of Implementation - Human Resource Development and Capacity Building' is :

> "**28.7** This programme should facilitate the capacity-building and training activities already contained in other chapters of Agenda 21." (UN, 1992: 234)

However, despite this relatively detailed and positive coverage within Agenda 21 there is no mention of local government in the Rio Declaration on Environment and Development. Local communities are mentioned in Principle 22 but the statement gives little recognition to the participatory role of 'non-tradition' communities:

> "Indigenous people and their communities and other local communities have a vital role to play in environmental management and development because of their knowledge and traditional practices. States should recognise and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development." (UN, 1992: 11)

Neither the Framework Convention on Climate Change nor the Convention on Biological Diversity mention the role of local government or of local action.

Responsibility for implementation is given exclusively to 'the Parties' (Climate Change Convention) and 'Contracting Parties' (Biodiversity Convention) - in other words to the traditional sole actors in international agreement: nation states. Gordon points out that:

> "In terms of political process therefore the Conventions are a far less innovative form of international agreement than Agenda 21 with its persistent emphasis on the need for a far wider range of institutional actors outside central government to be involved if UNCED follow up is to succeed." (1993)

Gordon expresses the view that this is the result of documents being negotiated on separate tracks, with different interest groups, and of a lack of time to ensure consistency of coverage and commitments. However it does highlight the different perspectives of physical scientists and social scientists in how global environment and development problems ought to be addressed, and the difficulties this creates for policy processes. This is a point explored by Redclift (1992) who highlights the way the Intergovernmental Panel on Climate Change (IPCC) drew heavily on the experience of natural scientists, however, "the representation of social scientists (on the three IPCC Working Groups) was lamentable, and their reports failed to match the compelling evidence of physical and biological processes with similar concern for social and economic behaviour."

Gordon (1993) makes a case that as Agenda 21 has no legal force, and as there is no mention of local government in the legally enforceable Conventions, the participation of British local government in Rio follow-up activities will rely heavily on securing a sufficient level of political commitment by the British government, political parties and public opinion.

1.8.2 Local Government, Local Governance and Local Agenda 21 in the UK

Local government in the UK was founded on a nineteenth-century agenda to tackle public health problems. 'Local Authorities' - city, town and burgh councils, and more recently district and regional councils - have a long history of dealing with environmental issues. However, this role has largely focused on the statutory environmental health and planning roles and this has presented problems when seeking to move to a more holistic agenda encompassing social and economic activities. Translating the principles of sustainable development into practice within local authorities has not been a smooth or even process. There continue to be question marks around the ability of current UK local governance structures and processes to deliver on a long-term and holistic agenda of this kind.

Prior to the Rio Earth Summit the Local Government Board's had made some early forays into the area of environmental management: "Managing the Environment: local authorities in action' (LGTB, 1990a) and 'The Environmental Role of Local Government' (LGTB, 1990b). However this work was seen as weak and the published documents suggested that "the fact that anything was taking place was (seen as) noteworthy" (Bosworth, 1993).

By the end of 1991 many local authorities were recognizing a need to at least have policy in place and some 70 per cent of councils of all political persuasions had adopted an environmental document. However, the impact of this policy approach was called into question and some commentators emphasized that:

> "one should not necessarily equate documents with either action or quality"
> (Raemakers, Cowie and Wilson, 1991).

By the second edition of the Local Government Management Board's guide - Environmental Practice in Local Government - (LGMB, 1992) 100 case studies were selected from the 400 submitted and there was felt to be some genuine good practice to pass on (Bosworth, 1993). The impetus of the preparations for the Earth Summit, and the opportunities presented by the call for preparation of 'Local Agenda 21s' appear to have helped to strengthen the work in progress.

A UK Local Government Agenda was drawn up for the Earth Summit that stressed the need to alert local authorities to the significance of UNCED:

> "For unless there is a response at all levels and in all countries to UNCED it will have failed. UNCED should put sustainable development on the agenda of concern for all local authorities in this country as in the rest of the world".
>
> (Stewart & Hams, 1992)

In November 1992 the Local Agenda 21 in the UK initiative was launched to support the work of individual authorities in the process of creating local documents (CLGEF, 1992b). By 1993 there were felt to be more examples of good practice, but the focus was still very much on the environment and not on a more holistic sustainable development agenda and there was huge variability between local authorities:

> "The best local authorities have shown what can be done within existing constraints. The gap between them and the worst is enormous. Many councils are still hardly aware that the environment is an issue, let alone know or want to hear about sustainable development. The current calls for local action to draw up Agenda 21s are likely to meet with a very mixed reaction. In some areas it will be wholehearted and impressive. In others Councils will go through the motions of consultation unenthusiastically. And in others the call is likely to go straight in the waste paper basket." (Gordon 1993)

In January 1994 Sustainable Development The UK Strategy was published - a 268 page document which claimed to set out the challenges the UK will face over the next 20 years to "make further development sustainable". As with Agenda 21 the UK government document devoted a chapter to the role of Local Government and emphasized the importance of more locally focused action:

> "Both central and local government acknowledge the importance of working in partnership to help identify priorities for action and the ways in which this can best be delivered. Local government's ability to innovate, to anticipate problems, to provide local leadership and processes for other involving groups, represents an important contribution towards the development of strategies for sustainability which reflect local needs and priorities."
>
> (HMSO, 1994:200)

The Local Government chapter reviewed work already being undertaken and set out the intention to work on Local Agenda 21, on a Central and Local Government Environment Forum, on eco-management and audit and on overseas partnerships. In the main it set out very little new work and made commitments to processes rather than outcomes. Chapter 34 'Environmental Accounting and Indicators' did, however, make new commitments. The Chapter sets out key issues in the debate about the limitations of current national accounts in assessing welfare or environmental impact. It highlights the international interest in

> "the possibility of developing a set of key indicators covering a range of environmental or sustainable development issues" (1994: 219-20)

and goes on to state:

> "The Government is committed to work on developing indicators for the UK and the DOE will establish a working group to produce a preliminary set within two years."
>
> (1994:220)

And on a local government level:

> "While some indicators, for example, those relating to ozone depletion or global warming, have a primarily global or national focus, others have a local dimension. A

number of local authorities have already published state of the environment reports, and are keen to develop sets of environmental indicators which will help to show whether, at a local level, policies are leading to environmental improvements.

The local authority association's Local Agenda 21 steering group has commissioned a study into local sustainability indicators and is considering with central government how this might fit into a broader framework of national indicators. The aim is to pilot investigations of a sample of local authorities and make recommendations in 1994."

(1994: 220)

This made clear linkages between the international, national and local and stressed a role for initiatives to seek to develop local sustainability indicators. The phrasing suggests that it was key individuals within local government pushing the process on at a local level and using this as a lever to encourage national government to follow, rather than top down pressure to initiate local action. This is very much in the spirit of Agenda 21.

The local government aspects of Sustainable Development: the UK strategy failed, however, to take account of the changing responsibilities and increasing pressures on local government during the 1990s. From 1979 onwards the Conservative government progressively stripped local government of many of its powers, resources and responsibilities through processes of centralization, the contracting out of many of the service functions, and through the rise of quangos (Christie, 1994; Stewart, 1995). In parallel there was increasing pressure on local authorities to deliver on new responsibilities, improve the quality of the services they continued to provide while simultaneously to cutting costs.

Local Agenda 21 has been championed by some as a route to halting the processes of sidelining and fragmenting local government, offering instead an opportunity to reinvigorate the sector with new wide ranging and holistic responsibilities for the constituencies they served (Tuxworth, 1996).

"..among councilors and officers especially, there was a hope that LA21 could provide one means of reasserting the role of local government. After more than a decade of political marginalization and of being reduced to a quality assurer of minimum-cost services, local government was being given a brief to raise the political awareness and active participation of its citizens across a full complement of economic, social and ecological services."

(Selman and Parker, 1999)

However, the damage is considered by others to be too far advanced for Local Agenda 21 to easily affect a remedy. Although some of the restructuring has added a new dimension to local decision making by bringing a different set of priorities and involving a wider range of local stakeholders, some commentators question the extent to which this climate of 'entrepreneurial local governance' (Eisenschnitz & Gough, 1993) which favours short-term development and a growth agenda can provide the long-term, holistic, democratic local governance frameworks that are required for sustainable development:

> "In the midst of local institutional fragmentation, successive central government policies may have deprived local government of the tools and powers required for its new enabling role. (Littlewood and While, 1997: 114).

As Local Agenda 21s have been developed across the country the initial vision does not appear to have been realizing its potential and may be in danger of becoming marginalized. Surveys of local authority 'environment coordinators' in 1994/5 conducted by the Local Government Association found that 72 per cent of UK local authorities were committed to participating in LA21, and this had risen to 91 per cent by 1996. However for many this commitment was very weak, with 50 per cent of respondents describing their authority's commitment as tentative and only one third describing their commitment as strong. The level of development and use of sustainable development indicators by local authorities was not felt to be sufficiently widespread for this data to be used to determine the

impact of LA21 activities on sustainable development. The impact was instead assessed using a questionnaire survey of local authority Environment Coordinators. These respondents identified the effect of LA21 as achieving more than a 'small impact' only in 'traditional environmental areas' such as resource use, limiting pollution, beauty/distinctiveness and biodiversity, in all other areas the level of impact ranged between 'little or no impact' and 'small impact'. This may be feature of the early stage of implementation of LA21 up to the survey period, and possibly also a lack of recognition of progress in areas such and housing, social services and education on the part of the environment staff who were surveyed (Tuxworth, 1996). Alternatively it may support the case that despite a high response to the principles of LA21 the impact on practice being achieved continued to be marginal across much of the country.

The tentative commitment to LA21 by many local authorities raises questions about the likelihood of broadening and deepening the impact of LA21. Williams (1996) points out that the authorities that had made substantial progress with LA21 had done so as a result of strong political commitment.

A barrier to a deeper political commitment may be a perception that sustainable development is only about 'the environment'. Environmental issues continued to be seen, particularly in many Labour controlled local authorities, as a middle class luxury:

"While the leading authorities have a good grasp of what is required in terms of planning for more sustainable development, others do reflect the concerns expressed by Macnaughton et al. (1995) about the low level of understanding amongst government officials (local and central) of the underlying concepts associated with sustainability and sustainable development, and the superficial ways in which it is being used."

Counsell (1998)

Another major difficulty apparent regarding the implementation of LA21, is that it is not being placed at the heart of local decision making processes, Wilks and Hall (1994) point out that with no extra resources to undertake LA21, and a range of other pressures to contend with, local authorities have little choice but the treat LA21 as a bolt-on extra rather than as the basis of a radical reframing of their development approach.

As a result, although a lot of effort is put in by committed individuals, it is exceptionally difficult to create sufficient impact to move sustainable development onto mainstream policy agendas. The LA21 process of involvement - Roundtables and Working Groups – are usually outside the mainstream political processes of the local authority, and there is therefore no guarantee that decisions arising from these bodies will be taken on board by the politicians (Williams, 1996).

The Edinburgh's Lord Provost's Commission on Sustainable Development illustrates these difficulties. The Lord Provost's Commission was created as an innovative public-private partnership using consultation processes modeled on national Royal Commissions. It's task was complex and wide ranging, including providing and audit of current practice, a blueprint for a more sustainable future, and to be an advocate for sustainability in the community at large. Yet it had one full-time member of staff for a year to support the volunteer Commissioners in the completion of this task (Mittler, 1999). Despite this the Commission succeeded in carrying out a huge public participation and fact finding exercise, and from this produced a final report identifying 127 recommendations aimed at 'all sectors of society'. However, less than 2 years after the presentation of the Commissioner's conclusions there was little evidence that the huge investment of time and effort was generating a commensurate impact on sustainable development practice in the City. Two of the three key procedural recommendations had already fallen by the wayside: the 'Sustainable Edinburgh Partnership' met once in 1998 but not

since, and the 'major public awareness campaign on sustainability' has not happened. Even the third recommendation, a Lord Provost's Charter and Award Scheme has had a much more muted impact than had been hoped (Mittler, 1999). That such a high profile initiative, and one that had succeeded in gaining the participation of a large number of influential figures in a wider range of local organizations, as Commissioners and in presenting evidence to the Commission, can be so rapidly sidelined is a salutary lesson in just how hard it can be to get sustainable development onto mainstream policy agendas.

Part of the difficulty facing LA21 may be that existing frameworks for local decision making cannot effectively accommodate the full implications of the LA21 approach. Voisey et al, (1996) emphasize the need for supportive economic and policy backing from national government and argue that successive central governments have failed to provide this support. It is certainly apparent Blair government has not embraced Local Agenda 21 in the way envisaged by LA21 advocates and it has not being offered as the core process through which Blairite policy goals might be achieved. Neither 'New Deal for Communities' (DETR, 1998a) nor 'Modernising Local Government' (DETR, 1998b), which aims to reclaim the credibility of the local government process and to advance participative democracy through the use of innovative ways of engaging with their constituencies, are presented using the concepts and terminology of LA21. Best Value (DETR, 1998c) has also been seized upon by some LA21 advocates as offering a tool for balancing environmental and social with economic imperatives, but the intended role of Best Value is also open to other, less holistic, interpretations. Rowe (2000) argues that the government's requirement that all local authorities produce an LA21 strategy, through consultation with their constituencies, by the year 2000 (DETR, 1997) sits uneasily with these other policy requirements.

Even the overall sustainable development strategy, produced five years on from the post-Rio strategy document, 'A Better Quality of Life' (DETR, 1999) and which involved wide consultation (DETR, 1998d), does not explicitly build upon LA21 as a process. In a similar vein the guidance on central government and EU-funded area based regeneration initiatives, which since the early 1990s have been predicated on cross sectoral partnerships may now make links with the concept of sustainability (DETR, 1998e) but do not explicitly recommend LA21 as the appropriate process for doing this. The failure to grasp the opportunities of integration leave local government exerting extra effort at a time when it can be little afforded, and missing opportunities for just the kind of 'joined-up-government' that the Labour leadership claims to advocate. The environmental agenda also appears to be slipping down the list of priorities, illustrated by the ordering of priorities in Opportunities for Change (DETR, 1998c), and 'A Better Quality of Life' (DETR, 1999), as compared with the post-Rio "Sustainable Development: the UK Strategy (DETR, 1994).

The failure to provide a clear direction on these issues has impacts at every level from local to international. Richards and Biddick (1994) identified strategic guidance on development locations and land use mixes as having particular potential for conflict. Humberside County Council found translating objectives for economic development in a draft structure plan into policies that can be readily used on an operational basis can present considerable difficulties. Attempting to simultaneously meet the environmental objectives and the economic development objectives contained within their draft structure plan would have resulted in complex debates around every-day decisions. The presumption in the UK statutory planning framework in favour of permitting applications, other than those in evident conflict with statutory plan policies, or those which threaten to harm "interests of acknowledged importance" can compromise case by case decision making which in turn impinges on the commitment to conservation and

enhancement of Humberside. Gibbs (1996) identifies problems with the integration of environmental protection issues into European Union economic development policies and practice and argues that what is needed is an interplay between policy 'from above' (EU policy) and 'from below' (local authority policy). However:

> "In the UK the development of such and interplay remains restricted by the lack of firm direction and funding by central government" (Gibbs, 1996: 255-6)

Yet despite this lack of consistent policy backing for LA21 and the wider sustainable development agenda the UK response to LA21 by local authorities is seen as particularly vigorous. Within Europe only Sweden, Norway and possibly the Netherlands have shown greater commitment to LA21 and there has been interest from many countries, including China, in how the UK has achieved such a high level of municipal participation in this 'bottom-up' process (Tuxworth, 1996).

The vigor of the UK response to what is a non-statutory area of responsibility is attributed, to a large degree, to the effectiveness of the Local Agenda 21 UK policy unit of the LGMB. Respondents to the 1996 survey of environment coordinators placed LGMB generated guidance as of high value compared with other sources of information. However, it is possible that the broad reliance upon this guidance may have led UK authorities towards a high level of shallow participation that has had a limited impact on the practical issues of sustainable development. The widespread production of a written *output* a 'Local Agenda 21' actually detracting from securing an effective process to improve sustainable development *outcomes*.

Littlewood and While make a case that as sustainable development is a holistic process requiring an understanding of the interrelationships between social, environmental and economic factors.

> "Governance for sustainability needs to relate these factors to structures, mechanisms and people through processes of policy formulation and implementation."
> (Littlewood and While, 1997: 114

However, they do not perceive that governance in the UK yet achieves these ambitions:

> "The model of governance which has emerged in the UK acknowledges these factors but practice fails to match the rhetoric. It has produced a template with some promising characteristics, yet when judged by the criteria for sustainable development the process remains flawed: timescales are too short, policies are not integrated, interests are not shared, power is not evenly shared between partnerships, and the perennial problem of community participation remains." (Littlewood and While, 1997: 114)

In reviewing the process and impacts of the Bath and North East Somerset Local Agenda 21 Issue Commission Rowe (2000) found that the difficulties in securing autonomy and independence in a process embedded in local council procedure were well illustrated. Feature of this problem included:

- the formulation, direction and servicing of the Commission by Council officers;
- control of resources for the Commission by a steering group of Council officers;
- definition of the programme for the Commission prior to its inaugural meeting;
- a very high workload for voluntary Commissioners which meant they had to have a pre-existing interest in sustainable development issues, and flexibility and available time in order to sustain the burdens imposed by the Commission.

The consultation process also highlight the issues of:

- The need for adequate resourcing and management time to act upon the findings of consultation exercises;
- Raising expectations among constituents that are unlikely to be fulfilled, risking disillusion and the potential for further disengagement from local governance;
- The need for a diversity of methods to be employed if meaningful engagement is to be secured, as 70 per cent of those making submissions to the Commission were already known to Commission members prior to the start of the consultation process.

The experience of the Bath and North East Somerset Local Agenda 21 Issue Commission is by no means unique and there appears to be a serious question mark over whether many of the policy statements emerging from local government amount to anything more than public relations exercises when they are clearly not being backed by either the resources or the governance structures needed to achieve successful implementation.

> "policy statements supporting stakeholder participation are inadequate if sufficient resources, staff, and commitment to implement meaningful participation do not back them. Truly meaningful participation requires that all concerned and affected stakeholders are provided the information and resources they require to influence and contribute to the decision-making process, and that planning and decision-making processes must be designed and implemented to foster comprehensive stakeholder participation.
>
> Roseland (2000: 106-7)

In the case of the Bath and North East Somerset Local Agenda 21 Issue Commission, the Commission could only make recommendations to the local authority, and as a short life body, were not even in a position to carry out ongoing

monitoring and reporting on the impact of these recommendations on policies and practice. This severely limited the ability of the Commission to take forward the process of implementing LA21. Some of this role was to be taken up by a cross-sectoral LA21 Forum which was set up in the wake of the Commission. This Forum also faced the conundrum of seeking to act independently of the local authority whilst being heavily reliant upon it for funding raising a question about the need to rethink relationships between local government and the voluntary sector (see for example Leach and Wilson, 1998; Rowe and Robbins, 1999).

The Bath and North East Somerset Local Agenda 21 Issue Commission was also felt to have suffered from a lack of consideration regarding how learning might be shared "let alone become embedded in council practice to inform progress" Rowe, (2000). This failure meant that much of what the Commission did achieve in overriding cross-sectoral and party-political considerations was likely to be lost. Rowe is critical of the many aspects of the planning and execution of the Commission process describing it as "cumbersome, poorly focused and falling well short of its goals of objectivity and community consultation" however, she does give it credit for beginning the process of awareness- raising towards sustainability goals in the council itself and initiating the process of policy integration, particularly through engaging elected members. The lessons, set out in Figure 1.8.1, are identified as potentially transferable from the Commission to other LA21 exercises.

Figure 1.8.1 Lessons of the Bath and North East Somerset Local Agenda 21 Issue Commission Process

shared ownership from the outset, of programmes and process, is essential if cross-sectoral consultation is to be achieved;

adequate timescales are required to lay the foundations of mutual understanding and coherence of approach even before such exercises begin;

issues of leadership, ownership and independence need to be resolved iteratively, through questioning of inherent (intra-sectoral) assumptions, throughout such exercises;

any one mechanism for consultation is unlikely to be inclusive, and some groups and individuals will require specific targeting; and

the limitations which will be imposed by resource availability should be made explicit throughout to all actors, and in particular to the public, if further disillusionment with local government undertakings is to be avoided. (Rowe, 2000).

The experience of both the Bath and North East Somerset Local Agenda 21 Issue Commission and the Edinburgh's Lord Provost's Commission on Sustainable Development appear to be consistent with what is happening elsewhere in the UK. The interest in visioning and broadening consultation is not clearly linked into decision making processes that turn this vision into practical, sustained action. A qualitative review of LA21 in 4 'leading edge' UK local authorities: Gloucestershire County Council, Lancashire County Council, Leicester City Council and Reading Borough Council identifies a difference in approach between pioneering UK authorities and the more pragmatic service based approach that is seen as more typical of the international response to Rio:

"The storylines of participants in LA21 point to the convergence of a number of closely related themes. Although its organizational and political contexts vary, the underlying mood is similar. LA21 in the UK, while retaining a practical and pragmatic dimension, differs significantly from the local government led model of sustainable service planning which is characteristic of international practice. UK authorities seem to favour processes which enrole citizens and stakeholders into dialogues related to long-term future quality of life issues. This may well express itself in future years as a creative tension between the need for collective exploration of radical options for sustainable futures, and the need to make an immediate and measurable improvement to local environments." (Selman & Parker, 1999:59)

There appears to be a similar, and interwoven pattern in the way work on indicators of sustainable development in the UK have been shaped, the predominantly public education and awareness raising role they have assumed, and their the impact this has had on their effectiveness in contributing to the achievement of practical 'on-the-ground' changes in sustainable development outcomes.

1.8.3 Sustainable Development Indicators: Purpose and Process

The LGMB Sustainability Indicators project which ran from 1993-5 (of which the Sustainability Indicators for Fife Project set out in Chapters 4 and 5 was one of 10 pilot authorities) received quite widespread attention and is credited with informing subsequent work on sustainable development indicators by other bodies at a variety of geographical levels.

> "...there is now a huge industry of creating custom-made indicators at the local level, work based on that summarised by the Local Government Management Board (LGMB) (1995)." (O'Riordan & Voisey 1998: 51)

Jonathan Porritt uses the example of the second 'Green Audit', produced by Lancashire Council (another of the LGMB pilot authorities) which presents a raft of sustainable development indicators in the form of ward level maps which highlight local inequalities, to urge companies to be more pro-active on environmental and human welfare issues:

> "Sustainability indicators require companies to measure and report on their impact on their staff, the communities in which they operate, their suppliers and society in general. But their is mighty little of this kind of reporting going on anywhere in the world.

I wonder if it isn't time for these companies to take a leaf out of local government's book... As a snapshot of one local authority's efforts to communicate clearly what this all too nebulous notion of sustainable development is all about, it really works.

I just hope the new Department of Environment, Transport and the Regions has a chance to learn from Lancashire's work. Last year, it surprised both the rest of government and all environmental organisations by boldly publishing its own Indicators of Sustainable Development in the UK. Though and excellent starting point, it was very light on the kind of social and economic indicators that are needed to convey the full sustainable development picture." (Porritt, 1997: 25)

Morrey (1997) does not specifically refer to the LGMB indicators study but is clearly describing it when he writes about local indicators:

"There are now a large number of local initiatives to develop indicators in the United Kingdom. Local authorities, under the auspices of the Local Agenda 21 from the Rio conference are developing indicators for their own local areas. Interestingly many are choosing a grassroots approach by asking local communities which issues and indicators are the most important and relevant to them. They hope this will encourage local communities to take ownership and, hence be prepared to respond to the indicators they have selected. (Morrey,1997: 325)

However, Morrey identifies a problem with this approach, in that it can lead to:

"..each individual authority developing their own indicators in their own way. To determine water quality, a local community might develop indicators to see if there are salmon in their local river or frogs in their local ponds. These indicators may be highly relevant to local people, but they cannot be aggregated to give a regional or national picture. Moreover it is not clear how such indicators relate to national or regional norms or how they can be used to compare the achievements of one area with another that has similar characteristics. Many authorities are understandably wary of the development of further sets of performance indicators. Undoubtedly it would add to the value of the whole exercise if the authorities themselves were able to learn from one another by comparing their performance in this way. Hopefully a core of widely used indicators will emerge from the national set, which will be evaluated at the local level by all, or most, authorities These indicators however, would continue to reflect particular local circumstances." (Morrey,1997: 325)

Conflicts between 'local ownership' of indicators versus the collection of local indicators in order to build up a regional or national picture of conditions of interest to academics or government agencies, and performance indicators for local management of sustainable development versus indicators as a public awareness raising tool are just two of the fault lines in the sustainability indicators debate. Bakkes makes a case that as well as these issues of role and purpose of sustainable development indicators, the organizational processes are of equal importance:

> "Indicators are always a compromise. Their design needs to optimize between relevance to the user, scientific validity, and measurability... Moreover, further development of sustainability indicators concerns as much the organisation of the process that the indicators are a part of (the process of setting priorities and goals, of designing programmes and allocating responsibilities, and monitoring results) as it concerns the proper design of indicators. Consequently, because these steering processes do differ between different situations (for example between different forms of government) research on sustainable development indicators cannot aim for universally applicable methods. In short, sustainable development indicators are, by definition, imperfect, process bound and not universally applicable." (Bakkes, 1997: 379)

Despite the large amount of national and international interest in sustainability indicators this clarity of purpose and process is arguably absent from much of the work.

> "'Sustainability indicators' are being used in local communities to serve multiple and sometimes vague or contradictory objectives. This can add to confusion about sustainable development among the public and policy makers." (Brugmann, 1997)

Many regeneration partnership arrangements in the UK move straight from a process of visioning to identification (by agency staff) of indicators by which to monitor progress (Carley, 2000; and undated). However, this misses the opportunity for more broadly shared process of developing the vision into

objectives and targets for achievement. Two further stages are seen as important. First, a negotiation of the fit, and discrepancies, between the community's agenda and professional and strategic factors that may influence agencies views on the community's agenda. This stage can provide a useful learning process for all involved which can in turn improve the likelihood of developing effective partnership working. The second additional stage is to reinforce the consensus building stage by reaching a formal service agreement setting out the priorities for improving quality of life, moving towards sustainability and next steps towards achieving objectives. On this basis actions, and services targets, to be met by all partners can be scheduled. If these two additional stages are well handled identification of indicators to use for monitoring is then much more clearly based upon a consensus for action rather than a vague vision. This greatly increases the clarity of the role that each selected indicator is to perform, which in turn improves the usefulness of indicators as a feedback and management tool.

A lack of clarity over the purpose of sustainable development indicators may be a serious flaw in the processes that continue to be developed in the UK.

The LGMB Sustainability Indicators Project was strongly influenced by the Sustainable Seattle project (Washington State, USA). The project was widely heralded throughout North America and Europe, and particularly in the UK, as a good practice example. The UK focus may rest on a personal link between the Director of the United Nations Association, UNA were part of the team of Consultants employed by the LGMB to support the work, and the Chief Planner in Seattle at that time. A difficulty with this was that the project was widely promoted on the basis of the processes used to identify and publicise indicators, but at the stage of much of this promotion in the mid-1990s, the actual impact of the Sustainable Seattle work on sustainable development practice was untested.

Sustainable Seattle was a voluntary sector project established in 1990. The 4 primary objectives of the project were:

> to establish 'bellweather' tests of sustainability';
>
> to catalyse the public to 'reconsider our priorities';
>
> to explore the linkages and causal connections between these trends; and,
>
> to change our personal and collective behaviour in ways that will steer our community on a more sustainable course (Atkisson et al, 1995)

Brugmann (1997) is complementary about the process of project implementation in Seattle. This involved the creation of a "credible local stakeholder organisation" which raised awareness and established the 'sustainability' agenda in the city. Drawing on the published reports of the project and discussions with local participants and project officials he concludes that Sustainable Seattle has made, and continues to make, a recognisable contribution in engendering debate about priorities and the connections between local trends. But the very methods that the project has used to succeed in these two areas "consigns it to continued uncertain achievements" in measuring sustainability and securing behaviour change. The work of Maclaren (1996) inadvertently highlights the difficulties inherent in using indicators for evaluating 'the objective condition of sustainability'. The concept of sustainability is so ambiguous and contested that the tension between scientific rigor and public values and perceptions makes it difficult for any limited set of indicators to provide a complete enough picture to rigorously evaluate the sustainability of the projects desirable 'Seattle', particularly if that condition of sustainability remains undefined.

> "If Seattle's sustainability is in fact a complex, ecologically determined condition, then the ability of Seattle's dedicated generalists (i.e. stakeholders) to define and apply indicators to apply indicators to evaluate this condition accurately would appear problematic. In fact the evaluation of the condition of sustainability would require quite advanced scientific scrutiny, and the use of the simple tool of indicators itself would seem questionable. If, on the other hand, Seattle's sustainability is

primarily a social construct, then (a) catalogue of diverse indicators is not necessary. Emphasis the must be given to the social process of clarifying and resolving conflicting values and establishing a social consensus – a process that the self-selected stakeholders in the Sustainable Seattle project were unable to perform with rigour." (Brugmann, 1997: 63)

The biggest problem facing the Sustainable Seattle project in delivering on its objective of securing behavioural change appears to have been the way in which it was organized without connections to major institutions, and particularly the lack of linkage to the City's strategic and statutory planning processes. Sustainable Seattle raised public awareness, and through this put pressure on the City authorities to address sustainability, but the impact can be described as at best catalytic. The city authorities went on to develop their own set of performance indicators for sustainable development that provided the important linkage with municipal planning and policy processes. It can be argued that as a result of Sustainable Seattle attempting to use one set of simple indicators to serve a number of different objectives simultaneously it set itself up to fail on at least some of its objects and added to the confusion in the city about the use of sustainability indicators.

Sustainable Seattle can be contrasted with the examples of the State of Oregon, and the City of Santa Monica to support a case that a more limited function for sustainability indicators as a tool to maintain accountability to locally and popularly mandated change, rather than as a tool to 'measure sustainability'.

In Oregon the starting point was emergent North American interest in public sector performance measurement (Oregon Economic Development Department, 1989). In 1989 an independent state planning and oversight agency, called the Oregon Progress Board, was created to facilitate stakeholder input into strategic planning and to oversee the implementation of the 20-year plan. In 1990 the multi-

stakeholder Progress Board established citizen steering committees involving more than 200 organisations and individuals in the preparation of 160 benchmarks tied to the strategic plan. These benchmarks, each with a common baseline year (1990) and desired targets for 1995, 2000 and 2010, were adopted as policy by the State Legislature in 1991. The Progress Board has continued to oversee the application of the benchmarks by all state agencies, the periodic public review of the benchmarks, and the ongoing development of a performance accountability system in the state. As a result of such review and application, the benchmarks have been continuously refined and expanded. Today, the State uses a total of 269 benchmarks (Oregon Progress Board, 1990, 1996). The process was later extended out to all Oregon state agencies and departments, and the this was backed by law in 1993 so the benchmarks were used in performance management, planning and budgeting decisions by all state and state-supported agencies throughout Oregon. A report card, *Oregon Benchmarks*, is produced every two years to track performance relative to these targets (Oregon Progress Board, 1994).

This initiative has successfully aligned the entire budgeting and policy making process of the State and an increasing range of other major institutions into a common set of development objectives and targets. For example, when a benchmark on childhood immunization showed poor performance the State was able to mobilize and direct the resources to increase the immunization rate by 25% in two years. Brugmann (1997) expresses a view that although it might be seen as unfair to compare Seattle's community-based and municipal projects with Oregon's state government initiative, it does usefully illustrate how much more effectively and extensively indicators can be put to use if they are linked from the outset to a multi-stakeholder strategic planning initiative. The orientation of the Benchmark process towards performance also provides clear feedback on the actions and investments, and it can be argued that this is of more use to develop

public awareness of sustainability issues than a continued debate over the 'right' indicators.

At a less ambitious scale than Oregon the Sustainable City Programme of Santa Monica were used as a management tool at the departmental level to support the achievements of long term targets. Started in 1992 the Sustainable City Programme set as its highest priority the creation of a decision making framework for the city that "provides criteria for evaluating long-term as opposed to short-term impacts of decisions" (City of Santa Monica, 1994a). The programme did not attempt to define or to achieve a specific state of 'sustainability'.

First a multi-stakeholder Task Force on the Environment was established to work with the Environmental Programme Division to develop the programme. The Task Force surveyed prominent community members to identify priority sustainability issues. These respondents plus a wider group of neighbourhood representatives were then invited to a public meeting to view the results of the survey at which a preliminary draft of the proposed programme was presented for discussion. The programme was revised as a result of this feedback, a further public conference held to widen participation in a final review of the programme, and then the programme was formally approved by the city Council in September 1994.

The key elements of the resulting programme are eight guiding principles for City decision-making, specific performance goals for each of four policy areas (resource conservation, community and economic development, transportation and pollution prevention and public health protection), and specific and quantifiable targets to achieve these goals. A common base year of 1990 and a target year of 2000 were established for each target (City of Santa Monica, 1994b). City staff and Task Force members then established indicators to evaluate performance in achieving the programme targets. The clarity of intention in devising indicators for

performance management rather than public education priority simplified decision about what indicators to choose at this stage. Brugmann describes the result of the Sustainable City Programme of Santa Monica as:

> "..a quite simple, yet managerially sophisticated system to hold the Division, specifically, and the City, broadly, accountable to the goals and targets accepted in the public consultation process... Santa Monica (differs from the Oregon Benchmarks process) in that it was initiated by a specific municipal department to focus on its own activities. This has created a clearer linkage of accountability between the indicators and the Division than in the case of Oregon, where hundreds of benchmarks were first created and state agencies were then required to find a way to put them to good use. ...Santa Monica's case contrasts significantly with Sustainable Seattle. While Santa Monica's indicators can now be used for the same public education purposes as the Sustainable Seattle indicators, their primary purpose is to guide municipal activities and to provide all stakeholders with a tool to hold the municipality accountable to its own goals and targets. This is a purpose that to Sustainable Seattle indicators are poorly situated to achieve. Likewise, without clear targets, the City of Seattle's indicators will be less helpful in generating specific responses from the City Council and municipal departments if indicators demonstrate poor performance or progress." (Brugmann, 1997: 68-70)

It is somewhat ironic that the development of sustainability indicators in UK local government has been heavily shaped by Sustainable Seattle, an initiative that did not build directly upon experience of public sector performance review, given the range of work in this field that has been carried out in the UK over the past two decades.

1.8.4 Public Sector Performance Review in the UK

In the 1980s and 1990s performance management developed as a strand of the 'entrepreneurial governance' agenda and became synonymous with the drive for 'Value for Money'. The first major public sector performance indicator scheme in the UK was undertaken in the National Health Service. It was launched in 1983 with about 140 indicators per district health authority. From 1985 this became an

annual event and both the reliability of the data and the method of presentation were felt to have steadily improved (Pollit, 1990). Each year additional indicators were added to the exercise, and by 1990 the exercise generated ten times as many indicators as when it started. Meanwhile performance indicators were also adopted by other public services and over time they also became more effectively grounded in the decision making processes of these organisations:

> "the civil service, local government, the universities, the police, the courts. Not to have a set of indicators became the exception among UK public service of the late 1980s. What is more at least some of these systems were progressively linked to other important decision processes within their respective organisations, so that PIs became part of the normal way of life rather than hanging out on a limb as an unconnected, one-off exercise." (Pollit, 1990: 168)

The stated criteria of performance used by the National Audit Office Audit Commission (England and Wales) and the Accounts Commission (Scotland) were based on 'Value for Money'. The National Audit Office defines value for money in the following '3 Es':

> **Economy** is concerned with minimising the cost of resources acquired or used, having regard to appropriate quality, i.e. 'spending less'?
>
> **Efficiency** is concerned with the relationship between the output of goods, services or other results and the resources used to produce them. How far is maximum output achieved for a given input, or minimum input used for a given output, i.e. 'spending well'?
>
> **Effectiveness** is concerned with the relationship between the intended results and the actual results of projects, programmes or other activities. How successfully do outputs of goods, services or other results achieve policy objectives, operational goals and other intended effects, i.e. 'spending wisely'?

There is no formal hierarchy of importance established in principle between the three Es. But in practice reviews of performance indicators systems in use in the

public sector identify an imbalance in which of the 3Es is actually reported on. However, effectiveness, equity, user-responsiveness and quality are seldom captured:

> "There are well recognised reasons why the development of indicators of effectiveness and quality have lagged behind those of economy and efficiency. The preexisting data systems on which most first generation PI sets were founded did not encompass much if any information about effectiveness. First, collecting effectiveness data necessarily requires a measurement of impacts, and that in turn means going outside the organisation and trying to identify what those impacts are. Such expeditions are expensive and methodologically complex in a way that the accumulation of output data - lesson delivered, surgical procedures performed, etc. - is not. Second, for judgments about effectiveness to be made the impacts need to be compared with the service's original objectives. But in a number of important cases these objectives had never been clearly defined, and certainly had not been ranked in a way that would permit a concentration of measurement on the most important dimensions of impact. This is at base a political issue: which (or whose) values are going to predominate?" (Pollit, 1990: 173)

Performance review is not inextricably linked to a value-for-money perspective. Performance review arrangements, and particularly performance indicators have been used to demonstrate policy achievement, strengthening local government by reinforcing its policy role. This policy role is seen as critical if the trend towards enabling and decentralisation continued within the local government sector (Monaghan, 1996). Midwinter and Monaghan proposed that:

> "Performance indicators should be rescued from the confining and inappropriate straitjacket of the value-for-money framework, and set in a broader context of policy analysis to assist the political process in local government." (1993: 122)

In this vein there is a need to broaden out what is actually looked at by any system of performance indicators. Jackson (1988) proposes that indicators can be classified according to whether they are **prescriptive** (linked to particular objectives), **proscriptive** (negative indicators - it is possible to know when performance is

unacceptable but it is more difficult to know when it is acceptable) or **descriptive** (a multitude of statistics which describe what a department does, in other words its activities and throughput). Although some commentators question whether descriptive indicators are really *performance* indicators at all. Jackson considers that the majority of performance indicators published in the annual Public Expenditure White Paper and in the annual reports of local authorities are descriptive (1988:12). The dominance of descriptive statistics has continued with the Citizen's Charter legislation with all the indicators proscribed up to 1995 falling into the descriptive category (Monaghan, 1996). As a consequence, Midwinter suggests that such indicators should be reclassified as local government statistics as they communicate little about performance.

> "The concept of effectiveness links performance review to the political objectives of the Council. A succinct outline of the difference between efficiency and effectiveness is that effectiveness is 'doing the right thing', whilst efficiency is 'doing the thing right." (Midwinter, 1995 quoted in Ball and Monaghan, 1996)

Given the remit of local authorities there has been pressure to go beyond the economy, efficiency, effectiveness framework. Arguments have been presented for the inclusion of equity (see, for example, Flynn, 1993), empowerment and environment (Bristol City Council, cited in Ball and Monaghan, 1996), excellence, entrepreneurship, expertise, electability and possibly Europe and the environment (Jackson and Palmer, 1992). Given the number of different dimensions of 'performance' that can be identified the problem that faces managers and politicians is to choose the appropriate trade off between each of the elements.

The terms 'performance measures' and 'performance indicators' are also contested, and they have been associated with a range of analogies to try and clarify their role. Performance measures are likened to 'dials' from which data can be read, although this requires a set of norms or standards against which

achievement can be assessed (Carter, 1991: 94). Indicators are likened to 'alarm bells' alerting managers to the need to examine the issue further (Jackson, 1988: 2) or to 'tin-openers' which present an invitation to investigate the phenomenon that is being signaled up more closely (Carter, 1991: 94)

Two international examples of long-lived PI systems illustrate the way in which performance indicators systems develop over time. First is President Nixon's US Federal Productivity Programme of 1973 which generated more than 3,000 performance indicators and which by the mid 1980s embraced about 400 agencies representing 62% of the federal civilian work force. Yet despite intense, if sporadic, suspicions of government inefficiency, the availability of these indicators does not seem to have attracted much political attention:

> "The case confirms that the mere existence of a PI system is not enough to guarantee either its use or its improvement." (Pollit, 1990: 170)

The second case is described as the world leader in experience in public sector systems - the Soviet Union. Although this was surely a system in which PIs enjoyed political clout the system was vulnerable to 'gaming', that is attempts by production managers to organise production in a way which satisfied the letter, but contradicted the spirit of the plans (there was an infamous case in which the output of a chandelier factory was assessed by weight. The managers of the factory then sought to make heavier and heavier products until gravity spectacularly intervened in their gaming strategy!). The central planners in Moscow responded by imposing more and more detailed multi dimensional targets, intending to reduce or eliminate the gaming. Unfortunately this gave rise to a situation in which the rules of the 'game' were so complex and contradictory that few, either at the centre or in the enterprises, could fully understand or respond to them (Pollit citing Nove, 1978). There would then be calls for reform. The number of indicators would be reduced in the name of simplification and the

whole cycle could then begin again. The moral of this case would appear to be that performance indicator systems are potentially oscillatory - instead of steady improvement they may wobble between vulnerable simplicity and unintelligible complexity. The issue of gaming is not one that can be 'solved' once and for all, but must be the subject of constant vigilance. It is a behavioural issue - a matter of how PIs are used in practice. However, these behavioural issues have not yet become the main focus of UK work on PIs. Pollit develops a gardening metaphor to explain his view of this deficiency in the PIs debate and suggests that these 'deformities and inadequacies of growth' are both technical and relational:

> "in other words, believers in the potential of PIs must attend to organisational and political relationships just as much as increasing the accuracy, relevance and timeliness of the data from which the PIs are constructed. The tree needs some tender loving care as well as better fertiliser." (1990: 171)

Pollit develops this idea that if PIs are to thrive they will need not just one line of support but several. On this issue there convergence between the governance needs of effective performance management systems and effective processes to promote more sustainable development.

Jones (1996) made this connection identifying performance review as having a valuable role to achieve in achieving environmental improvements to help society to move towards sustainability. He emphasizes the need to make much clearer linkages between policy development and delivered performance on sustainability thorough the development of adequate action plans with quantifiable targets and performance indicators. Voicing a view similar to that of Brugmann (1997), that unless members and officers within local authorities are able to point readily to progress on a regular basis their, already fragile, lines of political support will be lost.

1.9 Framing the Research Agenda: Circumstances in Local Governance Productive to the Use of Sustainable Development Indicators

Productive use of sustainable development indicators is taken here to mean helping to achieve practical action towards sustainable development.

On this basis the evidence summarized above suggests that indicators are more productive if they are embedded in a decision making process that provides clear routes to accountability and management of performance. It is the decision making process, and the role of indicators within this, rather than any statement of the intended purpose of a set of indicators that determines the practical usefulness of any framework of sustainability indicators.

In the UK interest in visioning and broadening consultation is often not clearly linked into decision making processes that turn this vision into practical, sustained action. Both the Bath and North East Somerset Local Agenda 21 Issue Commission and the Edinburgh's Lord Provost's Commission on Sustainable Development illustrate the difficulties created by investing in the consultation stage without clearly identifying a route by which these findings will be developed into a consensual programme of action and implemented. For projects of this type, which are insufficiently woven into the political systems of decision making and resourcing to be carried through, the presence, or absence of a framework of sustainable development indicators will make little difference to their impact on action. In Pollit's terms there will be insufficient 'tender loving care' to enable the tree to keep growing, so whatever mechanisms are established to count the fruit they cannot, on their own, sustain the tree, let alone enable it to flourish.

The lack of direct linkage between the community based Sustainable Seattle project and the statutory planning and management process of the City of Seattle

limited the range of ways in which the indicators generated could be used. Not least because unless the City adopted the Sustainable Seattle indicators wholesale, with sufficient political and management support for the indicators to become the basis of both internal and external reporting and the establishment of incremental performance targets, the indicators could not be used an accountability tool. This route to accountability is both very indirect and very unlikely. The development of an 'independent' framework of sustainability indicators may be very well intentioned, but it fails to recognize the behavioural issues documented about public sector performance review. Without appropriate levels of ownership within the implementing organization indicators are doomed to have only a limited impact upon behavioural change, individually and institutionally.

The Oregon Benchmarks process proved very successful in aligning the budgeting and policy making process of the State, and an increasing range of other major institutions, into a common set of development objectives and targets. However, this did require the political and institutional will to tackle the discontinuity between the stakeholder participation process and performance management processes when managers had to work out how to put the stakeholder selected benchmarks to good use in agency decision making and reporting processes. In a process which had secured less political and institutional support this discontinuity could present more significant difficulties in using this slightly indirect route to accountability.

The Santa Monica example presents the most direct route between the development of sustainability indicators and institutional accountability. The iterative multi-stakeholder process adopted to identify issues and focus the programme for action was used by the Task Force on the Environment as a basis for developing guiding principles for decision making and for identifying specific targets for improvement. As the indicators to be used are developed from the

earlier stakeholder stage by city staff and task force members this offers scope for increasing ownership of the indicators by those who will have to manage the performance review systems in which they are embedded.

A further problem with a process that begins with indicators, and in which the indicators are not embedded in clear management and decision making process, the range of indicators that could be chosen is huge. This approach offers a direct route into the, potentially overwhelming, value-laden morass of deciding what sustainable development means and how to measure it – a route that absorbed considerable energy within Sustainable Seattle, and many other early sustainability indicators projects. While this can be a fascinating intellectual exercise for those who are inclined towards this activity it is very difficult to translate the scientific justification for any particular indicator choice to a non-specialist audience in an engaging way. A notable hazard if indicators are being used ostensibly as a public awareness-raising tool.

It does not appear to be coincidental that the processes in which indicators offer the most scope for securing institutional accountability are those when the selection of indicators follows from processes of social consensus building about vision, a stage of negotiation and conflict resolution in which the 'lines of support' for the programme are strengthened and specific objectives and targets for improvement are formally agreed. Using indicators as a feedback mechanism embedded within such a process defines the role each indicator is being used to perform, and the purpose of using indicators in the wider process. It is these issues of governance, and the quality and approach to governance that is required that is at the heart of achieving effective action towards sustainable development:

> The challenge is enormous, not least because the sustainability transition will require every organization (and every individual) to reinvent itself in the light of new objectives, constraints and opportunities. Part of this reinvention must be of

traditional institutional structures, including those in local government. The compartmentalization of activity into discrete areas which these traditional structures have tended to stress sits ill with the holistic approach of sustainable development" Tuxworth (1996)

The purpose of this research project is therefore to:

- Identify the circumstances in local government productive to the use of sustainable development indicators, giving particular regard to the impact of local governance;

- Recognise the value-laden nature of 'progress' in terms of sustainable development, and of research itself, in the research approach adopted.

This research project focused on a longitudinal study of the Sustainability Indicators for Fife pilot project. The research questions under investigation were:

(i) **To what extent were the Fife Sustainability Indicators embedded in a decision making process that provided clear routes to accountability and management of performance?**

- What was the visioning process towards sustainable development upon which the Fife Sustainability Indicators were based?
- What was the project timescale and how did this link with other related activities?
- What evidence was there of integration of policies across social, economic and environmental issues?
- What evidence was there of sharing of interests, both within the local authority and across local organizations and communities of interest to achieve sustainable development?
- What was the distribution of power between partners involved in

the Sustainability Indicators project?

- What was the approach to community participation – who were the participants and how were they involved?
- Were there clear mechanisms for negotiation and conflict resolution between different interests?
- How were objectives for action identified, and how did they relate to the visioning process?
- What was the mechanism for reviewing progress towards these objectives and for publicizing this information?
- What processes were adopted to share learning from the Sustainability Indicators for Fife pilot and embedding this learning in future Council practice?

(ii) How productive was the use of sustainable development indicators in the Fife Case, in terms of promoting institutional action?

(iii) How should research into these questions be approached to explicitly recognize the value-laden nature of devising 'measures of progress' and of research?

Chapter 2

Research Approach:
Leaping into the Cycles of Understanding

2.1 Introduction

Chapter 2 will explore approaches to undertaking research in a subject area that is by it nature interdisciplinary and in which 'traditional' polarisation of research along epistomological or methodological grounds is inappropriate. This chapter presents examples from my reading around the history, philosophies, processes and outcomes of research approaches. Chapter 2 is intended to illustrate my understanding of a range of research approaches and explain the rationale for the choice of research approach upon which this thesis is based.

Section 2.2 provides a brief historical overview of ways in which the debate about how research 'should be conducted' has become polariased between the positivist philosophy conducting research 'from the outside' and phenomenological and hermeneutic epistemologies which make a case for conducting research 'from the inside'. This section concludes by posing an alternative frame for exploring research, that of static versus dynamic inquiry processes.

Section 2.3 contrasts the linear thinking of prevaling research approaches with the cyclic and holistic roots of ecological thinking. Examples are presented of dialectical cycles which work *with* contradictions and change rather than seeking to deny them, and hermeneutic cycles which seek a balance between thinking, planning, action, reflection and communication. A hermeneutic cycle can be described as understanding history through the perpetual movement from the particular to the whole and back to the particular. This section presents an argument that a hermeneutic cycle is particularly appropriate to research into sustainable development indicators where the framing of the whole influences the process of devising individual indicators: conversely the process of devising each individual indicator can effect an impact upon the understanding that underpins the whole framework of indicators.

Section 2.4 sets out the research process adopted for this research study into Sustainable Development Indicators and Local Government: a hermeneutic spiral of inquiry made up of a sequence of interlocking dialectical inquiry cycles.

The process of my inquiry into sustainability indicators and my assessment of their applicability and limits to use in local government is set out in detail in Chapters Three to Six.

2.2 Research: Quantitative versus Qualitative or Static versus Dynamic?

2.2.1 Recognising Limits in Quantification

"In *The Assayer* Galileo banished the qualities that are the very essence on the sensual world - colour and sound, heat, odour and taste - from the realm of physics to that of subjective illusion. Descartes carried the process one step further by paring down the reality of the external world to particles whose only quality was extension in space and motion in space and time...But in the two centuries that followed...Each of the 'ultimate' and 'irreducible' primary qualities of the world of physics proved in its turn to be an illusion. The hard atoms of matter went up in fireworks; the concepts of substance, force, of effects determined by causes, and ultimately the very framework of space and time turned out to be as illusory as the tastes, odours and colours which Galileo treated so contemptuously... Compared to the modern physicist's picture of the world the Ptolemaic universe of epicycles and crystal spheres was a model of sanity. The chair on which I sit seems a hard fact, but I know that I sit on a nearly perfect vacuum. The wood of the chair consists of fibres, which consist of molecules, which consist of atoms, which are miniature solar systems with a central nucleus and electrons for planets. It all sounds very pretty, but it is the dimensions that matter. The space which an electron occupies is only one fifty-thousandth in diameter of its distance from the nucleus; the rest of the atomic interior is empty. If the nucleus were enlarged to the size of a dried pea, the nearest electron would circle around it at a distance of one hundred and seventy-five yards. A room with a few specks of dust floating in the air is overcrowded compared to the

emptiness which I call a chair on which my fundaments rest."

Koestler, 1959: 540-41

Chapter 1 presented examples of the role of physical scientists in highlighting the scale of current environmental problems. Quantification combined with modelling approaches have proved to be powerful tools in gathering a consensus for change. For example, the growing consensus that global climate change is happening, and that pollution from human practices is a significant factor in this, are based on natural science methods. Such methods offer humans the ability to discern the patterns of global temperature change over several millenia, to distinguish trends within complex and highly variable climatic systems, and to model predictions for temperature rise and probable impacts arising from such changes.

These skills have formed a huge part of the global climate change debate. Yet there is also compelling evidence that good natural science, on its own, is not enough to change human behaviour. Natural scientists may 'read the news' (Newby, 1990) but on issues of sustainable development that news is written by a much wider range of people: an estimated six billion of them as we go into the new millenium.

From a social science perspective the human actor is the source as well as the object of change. Humans affect the environment through their individual actions and through the agency of a vast range of social institutions. These social institutions, including those of the economy, mediate between the environment and social and economic outcomes. If we are to reduce the conflicts between human actions and the ecology of the planet we need to be aware of both the adaptive capacities of human societies, and their ability to formulate alternative policies to meet new policy challenges (Redclift, 1992a, 34). We need to find ways to live in better balance with our ecological environment alongside providing for the needs - but not the greeds - of a growing human population. The evidence presented by

natural scientists has to be translated into a useful basis for decision making by all the people who must take action. Sustainable Development Indicators have the potential to be just such a tool for change.

The analysis that natural science methods are neccesary, but not sufficient, tools to secure social change raises important issues with regard to the conduct of research into sustainable development indicators in general, and their application within the social instution of 'local government', in particular. Section 1.9 drew attention to the concept that underpins the drive for perfomance measurement: 'if you can't measure it you can't manage it'. However, the discussion of the misapplication of GNP as a measure of human and ecological well-being in section 1.2 highlights the hazards of misapplying tools of measurement. It is just as necessary to remember that if you can measure it, it doesn't mean you can manage it!

2.2.2 Positivism and Research Impacts

Research has historically become polarised between positivist versus phenomenological epistimologies or quantitative versus qualitative methods. Chapter 1 has already addressed some of the criticisms of positivist philosophy with regard to research. Positivism has been characterised as a search for a single objective truth, a task which places the researcher outside, and separate from the subject of the research. This characterisation of positivism precludes any recognition of the possibility that the world and "reality" are not objective and exterior but socially constructed and given meaning by people (Husserl, 1946). The emergence of a major alternative theoretical perspective on research can be seen as a reaction to philosophical and practical difficulties encountered in the application of positivism. This recognition that there are limits to the applicability of positivism to research mirrors the discussion in Chapter 1 regarding the recognition, at least in some quarters, of the applicability of GNP as a measure of

social and ecological welfare. One of the key practical criticisms of positivist research approaches has been in the area of research impact.

In *Real World Research* Robson (1993) states baldly that 'evidence for the impact of research on practice is striking in its paucity' and he presents a review of examples to support this statement. It is crucial to emphasis that when Robson is writing about 'research' he is refering to social science research. It can be argued that the failure of natural science is often the failure to foresee the consequences of 'successful' science and technology rather than failure of the techology itself. Redclift (1992a) cites the overuse of pesticides and pharmaceuticals and of the internal combustion engine as examples of this type of 'failure'. However, the attempt to transfer the positivist philosophy and approaches of natural science to the human interactions under study in the social sciences has been highlighted as problematic.

Robson's (1993) review of examples includes studies by Barlow et al. (1984) who discuss research in clinical and educational settings and reach the conclusion that 'research has little influence on practice' and by Cohen (1976; 1979) on research utilization including surveys suggesting that educational and mental health professionals consider that fewer than 20 per cent of research articles have any applicability in professional settings. Behrman and Levin, in criticising Business Schools say that:

"given the thousands of faculty members doing it, the research in business administration during the past 20 years would fail any reasonable test of applicability or relevance to consequential management problems or policy issues concerning the role of business nationally or internationally."

141-2 quoted in Gummesson, 1991: 143

Torbert, when addressing the question 'Why educational research has been so uneducational' argues that:

> "..the reason why neither current practice nor current research helps us to identify and move towards good educational practice is that both are based on a model of reality that emphasises unilateral control for gaining information from, or having effects on, others. Research in businesses, government, and educational institutions shows that administrators in all fields chose, without question, behavioural strategies which seek to maximise their unilateral control over situations." (1981: 142)

Heron (1981) defines 'unilateral control' as the attempt by the researcher to control the research enterprise and of the subject's contribution to it. Heron draws parallels with tradition authoritarian relationships between doctor and patient, teacher and student or manager and subordinate staff. In a situation where a researcher seeks to exert unilateral control the researcher role and the subject role are seen as separate, the researcher and subject do not have a reciprocal relationship and there is a significate power imbalance which favours the researcher. Torbert expresses a view that the effort in unilateral control presumes the actor (whether researcher or practitioner) knows what is significant from the outset and that this knowledge can be put to the service of controlling the situation outside the actor, in order to implement the pre-defined design as efficiently as possible. This focus on unilateral control means that if students, subordinates or research subjects seek to question whether there is something more significant at stake in the first place, the initial actor tends to redouble the effort to control the situation unilaterally. If s/he fails to do so, s/he tends to regard the effort as a failure and the situation as 'out of control' (1981: 142). Torbert views the model of unilateral control as intrinsically anti-educational and argues that it cannot, therefore, lead to good educational practice:

> "If everyone in given situations acts in accord with this model, then no-one is open to learning new strategies or examining their own assumptions. Moreover, to the extent that the different actors' substantive assumptions and strategies differ at the outset,

> then they won't even succeed in 'teaching' one another the 'facts' of the situation, since the relevant facts will differ according to the particular assumptions and strategies of particular actors." (1981: 142)

Torbert maintains that most practitioners act under conditions that are almost exactly the reverse of pre-defined, unilaterally controlled (and hence uninterrupted) experimental conditions. He therefore proposes that what practitioners really require is a kind of knowledge that they can apply to their own behaviour in the midst of ongoing events. They need this kind of knowledge in order to help them inquire more effectively with others about their common purposes, in order to find out how to produce outcomes congruent with such purposes, and in order to learn about how to respond justly to such interruptions.

Korten (1984) who draws on his experience of rural development in low income countries expresses similar views to those of Torbert. Korten believes that social scientists have a low level of influence in rural development programmes and attributes this limited influence to the roles that social scientists normally take in relation to action programmes and proposal. By taking on the role of summary evaluator social scientists have mainly engaged in documenting failure long after the time for corrective action has passed.

> "What is all too rare is for the social scientists to help an organisation build its capacity to actually *use* social science knowledge and data as a normal part of its operating routine. What the case studies (three studies summarised in the paper) suggest is needed is a willingness to experiment with new research methods by researchers committed to providing action agency personnel with simple tools to facilitate their *rapid* collection and interpretation of social data directly *relevant to action* for which they are responsible. The task is to make a demystified social science available as every person's tool, turning agency personnel and in some instances the villagers themselves into more effective action researchers."
>
> (1984: 185-6)

As well as criticising the status quo Korten offers clear guidelines to social scientists regarding the approach that they need to take if they want to make a more effective contribution to development:

> This most often seems to involve disciplined observation, guided interviews and information panels rather than formal surveys; emphasizing timeliness over rigor; employing oral more than written communication; offering informed interpretation rather than extensive statistical analysis; making narrative rather than numerical presentations; and giving attention to the process unfolding and to intermediate outcome data required for rapid adaption, rather than dwelling on detailed assessment of final outcomes. Rather than provide static profiles found in the typical socio-economic survey, it involves a quest to understand the dynamics of the socio-technical systems that govern village life, to provide a basis for operational-level predictions of the consequences of given development interventions. It means identifying target group members and behaviours in terms relevant to programme action rather than simply producing aggregated statistics. (1984: 186).

2.2.3 Conducting Research into Socially Constructed Phenomena

Chapter 1 highlighted that the measures of progress currently adopted at an international and national level (national income accounting measures) are not value-free or objective. They were contextually driven: created in a certain place and time in order to deal with concerns of government finance and unemployment. In the same vein sustainable development is an extraordinarily difficult concept to pin down into a written definition precisely because it is a socially constructed and value-laden concept.

The notion that reality is (or can be) socially constructed rather than objectively determined is the philosophical starting point of phenomenology. The task of the researcher is not therefore to gather facts and measure how often certain patterns occur, as in positivism, but to appreciate the different constructions and meanings that people place upon their experience. The phenomenologist tries to under-stand and explain why people have different experiences rather than search for

external causes and fundamental laws to explain their behaviour because human action arises from the sense that people make of different situations rather than as a direct response to external stimuli (Easterby-Smith et al., 1991). The research implications of phenomenology include the need for the researcher to immerse her/himself in the phenomenon they are researching which contrasts with the 'independence' assumption made within positivism. Evered and Louis (1981) describe research deriving from positivism as 'inquiry from the outside' and research which emerges from phenomenological approaches as 'inquiry from the inside'.

Phenomenology seems to be the prevailing approach to qualitative research in the social sciences literature, but it is not the only qualitative approach. Hermeneutics is described by Simmonds (1997) as "the attempt to understand not simply the dynamics of measurable phenomena but their meaning". The term hermeneutics comes from the Greek *hermeneuien*, to interpret. Originally, this word was applied to the interpretation of scriptual texts, such as the Bible, now it is concerned with the interpretation and significance of human actions and institutions. Odman clarifies the difference between phenomenology and hermeneutics in this way:

> "Whereas phenomenology is primarily oriented towards the immediate phenomena of human experience, such as thinking and feeling, hermeneutics is much more context directed. In interpreting human 'traces', hermeneutics often tries to go beyond the observable in order to 'read between the lines'. It can therefore be characterised as more transphenomenal."
>
> (1985: 2162 quoted in Gummesson, 1991: 149-50 my emphasis)

Gummesson provides a useful example to illustrate the difference between the positivistic, phenomenological and hermeneutic research paradigms. He identifies that when social scientists who are primarily controlled by the positivistic paradigm conduct interviews with customers and others in order to get access to

data about management issues they like to structure both questions and answers in order to simplify quantitative processing of the data. By doing this they completely disregard signs of communication other than the verbal, and do not register such phenomena as body language, physical environment, and unexpected events that may occur during an interview. By contrast phenomenologists would register all cues in an effort to "understand" the respondent. Hermeneutic scientists would go a step further and "interprete" these immediate events also in the light of previous events, private experience, and whatever else they find pertinent to the situation under investigation (Gummeson, 1991).

Table 2.1 Comparisons between the Positivistic and Hermeneutic Paradigms

Positivistic Paradigm	Hermeneutic Paradigm
Research concentrates on description and explanation	Research concentrates on understanding and interpretation
Well-defined, narrow studies	Narrow as well as total studies (holistic view)
Thought is governed by explicitly stated theories and hypotheses	Researcher's attention is less focused and is allowed to "float" more widely
Researchers seek to maintain a clear distinction between facts and value judgements; search for objectivity	Distinction between facts and value judgements is less clear; recognition of subjectivity
Researchers strive to use a consistently rational, verbal and logical approach to their object of research	Preunderstanding that often cannot be articulated in words or is not entirely conscious - tacit knowledge takes on an important role

Statistical and mathematical techniques for quantitative processing of data are central	Data are primarily non-quantitative
Researchers are detached, i.e., they maintain a distance between themselves and the object of their research; take on the role of the external observer	Both distance and commitment; researchers are actors who also want to experience what they are studying from the inside
Distinction between science and personal experience	Researchers accept influence from both science and personal experience; they use their personality as an instrument
Researchers try and be emotionally neutral and make a clear distinction between reason and feeling	Researchers allow both feelings and reason to govern their actions
Researchers discover an object of research external to themselves rather than "creating" the actual object of study	Researchers partially create what they study, for example the meaning of a process or document

Gummesson, 1991: 153

If we recognise that sustainable development is a socially constructed concept, it follows that sustainable development indicators are also socially constructed. That quantiative methods of data collection and presentation are necessary is not contested, but it is necessary to apply qualitative approaches to studying why particular issues and indicators were selected for data collection (and why others were left out). Polarisation between quantiative and qualitative research

approaches in the literature is unhelpful in a topic area where good practice in both is required.

2.2.4 Polarisation and Pragmatism in the Selection of Research Approaches

Despite criticisms of the type argued by Torbert and Korten regarding the relatively limited impact of positivist research approaches on a range of social problems qualitative research is frequently perceived as inferior to that derived through quantitative techniques (see for example Patton, 1979, Monaghan, 1996). Considerable energy has been devoted to arguing the relative merits and the practical differences of positivist and interpretivist research philosophies, and in parallel to this, the extent to which there is a relationship between the philosophy espoused and the practical actions of the researcher. However, several authors argue that despite the apparent incompatibility of the basic beliefs quantiative and qualitative research approaches:

> "when one comes down to the actual research methods and techniques used by researchers the difference are by no means so clear cut and distinct"
>
> (Easterby-Smith et al. 1991: 26)

Miles and Huberman (1994: 5) similarly argue that:

> "At the working level, it seems hard to find researchers encamped in one fixed place along a stereotyped continuum."

and

> "In epistemological debates, it is tempting to operate at the poles. But that in the actual practice of empirical research, we believe that all of us...are closer to the centre, with multiple overlaps."

A colleague of mine in the Department of Management and Organisation at the University of Stirling carried out a comprehensive review of the social sciences

literature around research philosophy and practice. She focused particularly on the commonly rehearsed debates centring on positivism versus phenomenology, the type of research being conducted, and quantitative versus qualitative methodologies. However, she concluded that:

> "the debates are remote from research which is being conducted in the real world which is typically much more driven by pragmatic concerns rather than for example, epistemological differences. It was proposed that normally a researcher faced with a series of research questions will seek to identify a methodology or a combination of techniques which is likely to lead to the questions being adequately addressed within the time and resource constraints faced."
>
> Monaghan, 1996: 103

Gordon, in *The History and Philosophy of Social Science* (1991) provides a very comprehensive overview of the related debates. He makes a case that both the positivists and their critics go too far in seeking to dismiss their opponents. The positivists, in claiming that science has no need of any metaphysical assumptions about the world, and that the presence of any such assumptions in a theory is sufficient to warrant it being rejected as pseudo-science. The critics of positivism by claiming, in effect, that if scientific theories cannot be certain they cannot be objective, and that objectivity must therefore be abandoned, even as an ideal.

Gordon further identifies and reviews the epistemic doctorines that have been debated during the twentieth century and concludes by expressing the view that each of the epistemic doctorines "should be rejected as inadequate". Instead he proposes a theory that he considers "to be more satisfactory as a philosophy of social science, and perhaps defensible also in respect of the natural sciences". This theory he characterises as 'cognitive instrumentalism'.

> "Science is best viewed, not as a body of knowledge, but as an activity - the search for truth, not the possesion of it...Cognative instrumentalism takes the view that the task of the philosopher of science is to examine the nature of this search activity with

the object of explaining its capacity to yield reliable (but not certain) knowledge of the world." (1991: 624)

Gordon's conclusions are analogous to those of Reason who concludes the volume *Human Inquiry in Action* with the statement:

"There are no procedures that will guarantee a valid knowing, or accuracy, or truth. There are simply human beings in a certain place and time, working more or less honestly, more or less systematically, more or less collaboratively, more or less self awarely to seize the opportunities of their lives, solve the problems that beset them, and to understand the things that intrigue them. It is on that basis that they should be judged."(1988: 231)

2.3 Dialectic and Hermeneutic Cycles of Understanding

2.3.1 Dialectical Thinking

Treating different philosophies of research as polar opposites is not the only way of viewing them. There is a history of thinking, going back over two thousand years, which seeks to approach the world not as linear and static, but as cyclical and dynamic. Taoism, the first clear expression of ecological thinking was developed in ancient China from about the sixth century B.C. (Marshall, 1992). The *I Ching* or Book of Changes is based on the idea of continuous cyclical fluctuations. Dialectical thinking was reintroduced into the mainstream of Western philosophy by Hegel.

Hegelian dialectics are simplified by many commentators into an abstract schema or handy formula characterised by the labels *thesis - antithesis - synthesis* (for example Marshall, 1992). Dallmayr (1993) argues, however, that this view "entirely misses the point":

"Dialectics for Hegel signaled the innermost movement of reality and thought, a movement deriving from the fact that no thing or concept stands by itself but gains its meaning from its relationship to a whole web of other things and concepts, including the relationship to its own nonexistence (or negation). In the traditional language of philosophy, dialectics for Hegel thus occupied a metaphysical or ontological status: here ontology means concern with the essence of being, manifest in natural and historical reality." (1993:3)

The unifying or holistic character of Hegel's work is widely recognised - but unity for Hegel was not simply a given fact or an immediately available situation that the mind could passively grasp or register. Like everything else in the world, unity was not directly present and understandable but was only the goal or endpoint of a complex process of development. The road to this goal was punctured by separation, differentiation, and even by opposition and contradiction (in the sense that every finite being viewed separately stands in contradiction with itself and others). Thus Hegel's philosophy acknowledged divisions: divisions between subject and object, between 'man' and nature, between individual and community, and between finite and infinite reality. Yet Hegel's philosophy did not stop at division and contradication. Hegel spoke of the reconciliation of opposites and of their attunement on a higher level where *"previous stages are both preserved and transcended"* (quoted in Dallmayr, 1993:4).

Hegel argued that dialectical paradoxes cannot be avoided, and they are not illusions but real and unavoidable. However, if we approach dialectical paradoxes by seeking to systematise them intead of suppressing them they can 'do positive philosophical work for you' (Wood, 1990).

The Dialectical thinking is an approach which is attracting increasing attention among Western writers and researchers (for example Reason & Rowan, 1981, Wood, 1990; Gummesson, 1991; Dallmayr, 1993; Fisher and Torbert, 1995). Of

particular relevence to the topic of this research study is the Hegelian view that our thinking has an inherent tendency to go beyond every limit and thus to undermine or overthrow itself (Wood, 1990). Hegel associated this idea with human's self tendency to change, develop, and progress through a process involving a stage of self-conflict followed by its resolution.

Rowan and Reason (1981) identify potential benefits of adopting such an approach to research:

> "If we apply this whole set of thoughts about dialectics to the research cycle we arrive at a whole different way of doing research from the traditional one. ..We shall be looking for contradictions, and trying to do justice to all that is there. And at the making sense phase of research, instead of trying to kill our data by setting out a list of hypotheses and shooting down each one with a yes or a no - as if that were what human inquiry were all about - we try instead to keep our data alive by allowing the contradictions to emerge, and by exploring the ways in which the opposites are interdependent, how they interpenetrate, and how they are also a unity."
>
> (Rowan & Reason, 1981: 129-132)

However, they also post a warning:

> ".... if we don't learn to think clearly and appropriately, in a way that suits our subject matter and our approach, we run the risk of simply doing analytical science badly. A lot of qualitative research is like this." (Rowan & Reason, 1981: 114)

2.3.2 Rowan's 'Dialectical Paradigm for Research'

In 1981 John Rowan set out 'A dialectical paradigm for research' in which he explored the ways in which different research styles engaged actively with the problems of action in the world . He used these reflections as the basis for his developing a research cycle model:

> "It would obviously be convenient if we could have a more precise language for talking about these research methods, so we could compare and contrast them more

> easily. The best way of doing this seems to be to consider all research as following the same basic model, but of using it quite differently. (Rowan, 1981: 97)

The model he uses is given in Figure 2.1. He goes on to use the cycle model to compare and contrast "the standard alienated research project" and "a dialectical engagement with the world". In Box 2.1 and 2.2 I have presented his contrasting cycles in full (as does Reason, 1988) as this work forms an important component of later discussions.

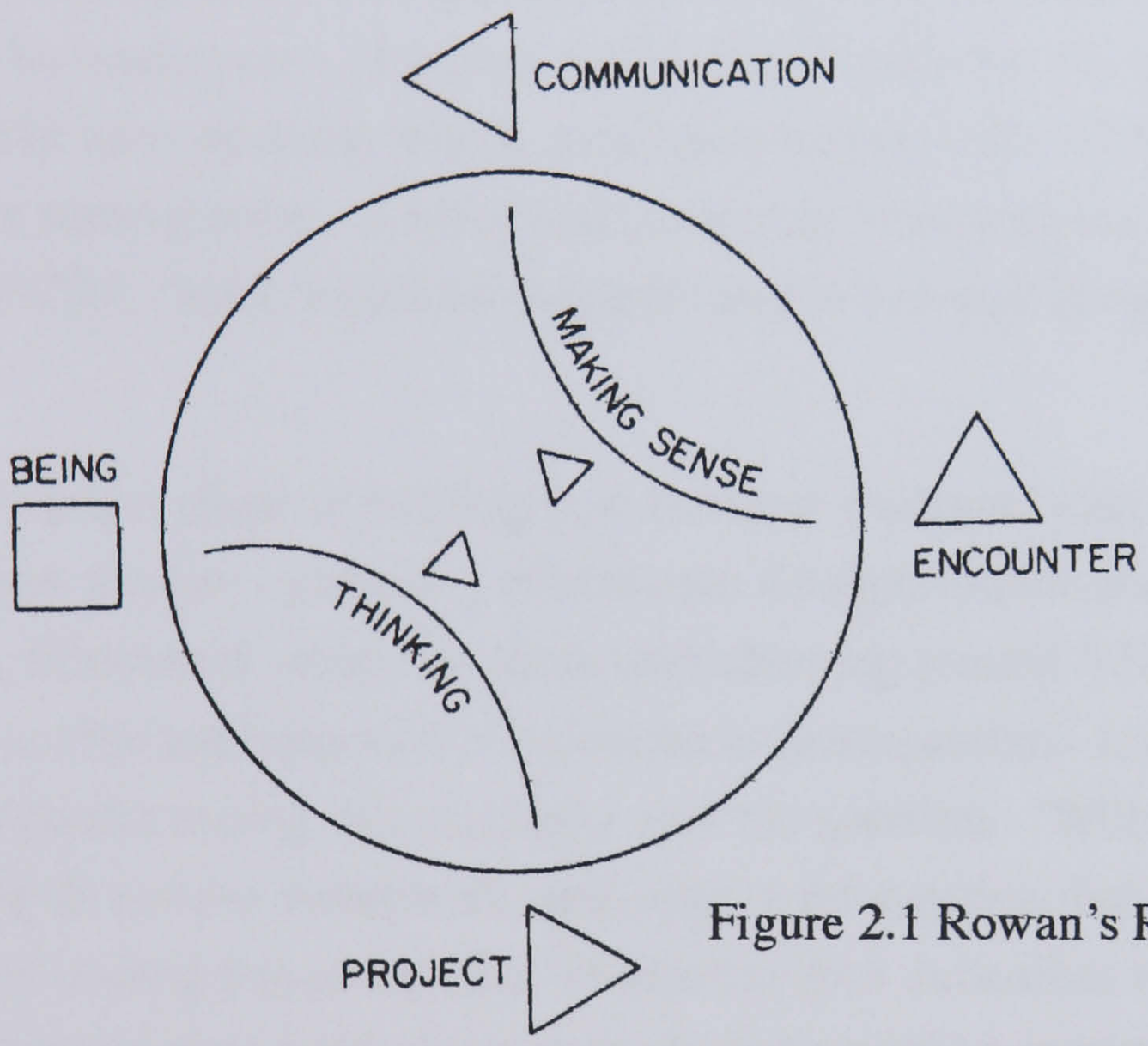


Figure 2.1 Rowan's Research Cycle Model

Box 2.1 Rowan's Standard Alienated Research Project

"At one end of the continuum, this is seen as the standard alienated research project. One is working in a particular field (BEING) and finds or is given a problem. One searches the literature to find if someone has already tackled it, and mentally combines the information to refine the problem (THINKING). One then designs a research plan and discusses it with one's supervisor or colleagues (PROJECT). One then conducts an experiment, or carries out the survey or observations (ENCOUNTER). One does one's data processing, content analysis, statistical

manipulation, etc. (MAKING SENSE). And one writes the paper, or dissertation, or thesis (COMMUNICATION) and perhaps talks about it at conferences and at other meetings, or writes and article about it, before returning to one's normal work in the field again (BEING)." Rowan, 1981:97

In contrast to this he describes the same cycle as a dialectical engagement with the world:

Box 2.2 Rowan's Dialectical Engagement with the World

"I start by resting in my own experience. But at a certain point my existing practice seems to be inadequate - I become dissatisfied. So the first negation arises; I turn *against* old ways of doing things. A real problem has arisen (This is not the invariable starting point - a dialectical cycle may often start with the moment of ENCOUNTER - but it would be too confusing to cover all the possibilities at this point).

So I move into a phase of needing new thinking. Perhaps I start by finding out what others know already - gathering information through conversations, phone calls, meetings, libraries or whatever. Ideas start churning around. THINKING in this model is not the application of a technique to inert material - it is a creative process of invention and testing. It continually asks the question - 'Will this do?' It is essentially an *inward* movement, gathering in information; but it is also a processing movement, adding and combining information into unfamiliar relationships, and trying it against some kind of template of what would be acceptable. The nature of this template is again dependent upon the level of consciousness available. The major contradiction here is between always needing more information ('Maybe that new paper will have the answer') and feeling that there is too much information already, and it needs to be cut down. It is only when this contradiction is transcended that movement takes place to the next stage.

At a certain point I abandon the gathering of more and more information. Thinking is not enough. I have to make a definite decision as to what to aim for. What is the major contradiction? This is what we need to attack. Philosophizing any further would be sterile and useless. Some action plan has come into being. This may require some daring, some risk-taking, some breaking of the bounds. I need to involve others at this stage in the process. PROJECT is essentially an *outward* movement. This is

where I take a risk, and form an intention. It will involve some form of bridging distances - to another person, to a new field, to a different theory or whatever. I have to bring into being a thought which contradicts the present reality, and has the power to bring into being a genuinely new situation - and there may be more than one way of doing this.This may require a certain degree of assertion or even aggressiveness on my part. It essentially involves plans and decisions. The major contradiction of the formal moment itself is between the need for more and better plans and satiation with plans. 'Plans should be adequate' versus 'No plan can be perfect'. Again, this contradiction has to be overcome before movement can take place to the next point in the cycle.

But again, at a certain point, plans are not what is needed. Action itself is the thing to get into. In action I am fully present, here and now. Plans are a mere distraction from the past, and can only hamper and impede. I must be ready to improvise if unexpected reactions occur. I have to be really *with* the others. ENCOUNTER is a movement of height and depth, like BEING, though it involves regular inward and outward moments. (The rhythmic nature of the cycle is now becoming more apparent.) This is where I actually meet the other. There is some action. There is some engagement, such that some other reality can get through to me. I may get confirmed or disconfirmed; and it appears, paradoxically that disconfirmation is actually more valuable as a learning experience than is confirmation. An experience of unfreedom can be very stimulating to further effort. The comparison of what is expected with what is actual is potentially very revealing. The major contradiction of this moment is between the need for perseverance and assiduity, and a plethora of too much activity. 'I am just here and now' *versus* ' I am not just here and now'. This is the place for test, for experiment, for comparison. It is also a place for involvement, for commitment, for spontaneity - to the point that I am not genuinely open to experience, to that extent that I am not genuinely encountering reality, and hence not likely to learn.

This goes on until I get to the point of feeling that action is *not* enough. I must withdraw and find out what it means. How can I understand what I have been through? Perhaps there is more than one message, more than one way of seeing it. What does it *all* mean? What are the contradictions, and can they be resolved? MAKING SENSE in this model involves both analysis and contemplation... The contradiction here is between reducing the data to an understandable simplicity, and adding more and more connections to the data to make them more understandable in that way, expanding them until they say everything.

But at a certain point, after I have been immersed in this for some time, I begin to become dissatisfied. Analysis is *not* enough. I must start telling people what it means and how I have understood what we have been through. What have we actually accomplished or achieved. Can I explain it to someone else? Can others learn from our mistakes and false starts? From our successes? I or others may write papers, give lectures, go to conferences, go on the radio, on television, in the popular press, or whatever, individually or collectively. COMMUNICATION, is an *outward* movement. This is the stage where we have digested what has happened, and made it a part of our new accommodation to reality. Our mental structures become richer and more complex. Our consciousness expands. I communicate with myself about what it all meant for me. I may communicate with others who were not involved. The major contradiction of this moment is between the need to get data more finely processed and accurately and clearly expressed, and awareness of the impossibility of communication to anyone outside the experience. The main thing is to understand what we have been through.

At a certain point I do *not* want to turn into a communicator, I want to get back to some real work. Now that I have learnt what I have learnt, I can go back into my field and continue to practice, only now on a higher level. BEING is neither inward nor outward, but represents a dimension of height and depth. It is here that I am a fully three dimensional human being most truly and most fully. Existence, perception and identify are all involved here. The question of will is also involved in any movement from this point. The major contradiction here is between cultivation of the everyday and dissatisfaction with it. 'Everything is (now) alright as it is' versus 'Everything is not all right as it is'. Implied in any movement from this point is a negation of one's existing practice - one turns away from the old ways of doing things. This is essentially a resting place, a place of contentment. It always hurts to leave it. It always feels good to come back to it. It can represent one's daily work in the field. One only leaves it under some form of pressure. I am who I am here.

These are the six moments in the process, and it is important to notice that the sequence can start anywhere. Often the starting point is ENCOUNTER; sometimes it might be a piece of THINKING or MAKING SENSE; BEING is a good place to start." (Rowan, 1981: 97-100)

Rowan draws a comparison between the two extreme ways of using and thinking about the selfsame research cycle:

"The first way reduces it to a predictable trot round well-known landmarks, and often seems to turn the circle into a straight line, leading from gaining-the-grant to delivering-the-report. The amount of energy involved and released in these two ways of using the cycles are quite different. The former way of using the cycle is low-energy; the later high energy. The former way is uninvolving. The latter is deeply involving, often being on some topic which is of personal significance to the researcher, and to the co-researchers or subjects." 1981: 101

This work was of particular interest to me because it viewed as legitmate the role of the involved researcher, rather than arguing that objective distance was the only appropriate or acceptable approach. The dialectical engagement form of the research cycle model also offered practical assistance by recognising the multiple dilemmas of the researcher because involved research involves movement between different and sometimes conflicting activities.

2.3.3 Preunderstanding and Hermeneutic Cycles of Research

Rowan's (1981) and Reason's (1988 and 1994) work emphasises the selection of approaches suitable to the topic of study and to the researcher's own style and priorities. These issues do not appear as if from a vacuum. The area of research interest is very often based on previous work and life experiences of the researcher. Gummesson addresses these issues in his book *Qualitative Methods in Management Research*. He comments that, in his assessment, academic researchers give insufficient consideration to the significance of 'preunderstanding' in choosing their scientific approach and methods:

"The concept of *preunderstanding* refers to people's insights into a specific problem and social environment before they start a research programme or consulting assignment; it is the input. *Understanding* refers to the insights gained during a programme or assignment; it is the output. This output in turn acts as preunderstanding before the next task." (1991: 12)

Gummesson draws on Bertrand Russell's (1948) work on the problems of understanding with the aid of the concepts *knowledge by description* and *knowledge by acquaintance.*

> "Research and education in management take place largely by means of description. In my view this represents a weakness that receives scant attention in the theoretical and methodological literature of management." (1991: 53)

Figure 2.2 shows factors that, according to Gummesson, contribute to the growth of preunderstanding. The traditional academic researcher's preunderstanding is primarily based on the right-handside of Figure 2.2, that is, on the basis of the experience of others, which is communicated through books, lectures and journals. This is *Knowledge by description* to use Russell's terminology. To emphasize clearly the difference between knowledge based on the individual's own experiences and knowledge based on the experiences of others, Gummesson uses the terms *preunderstanding* - and *understanding* - at *first* and *second* hand.

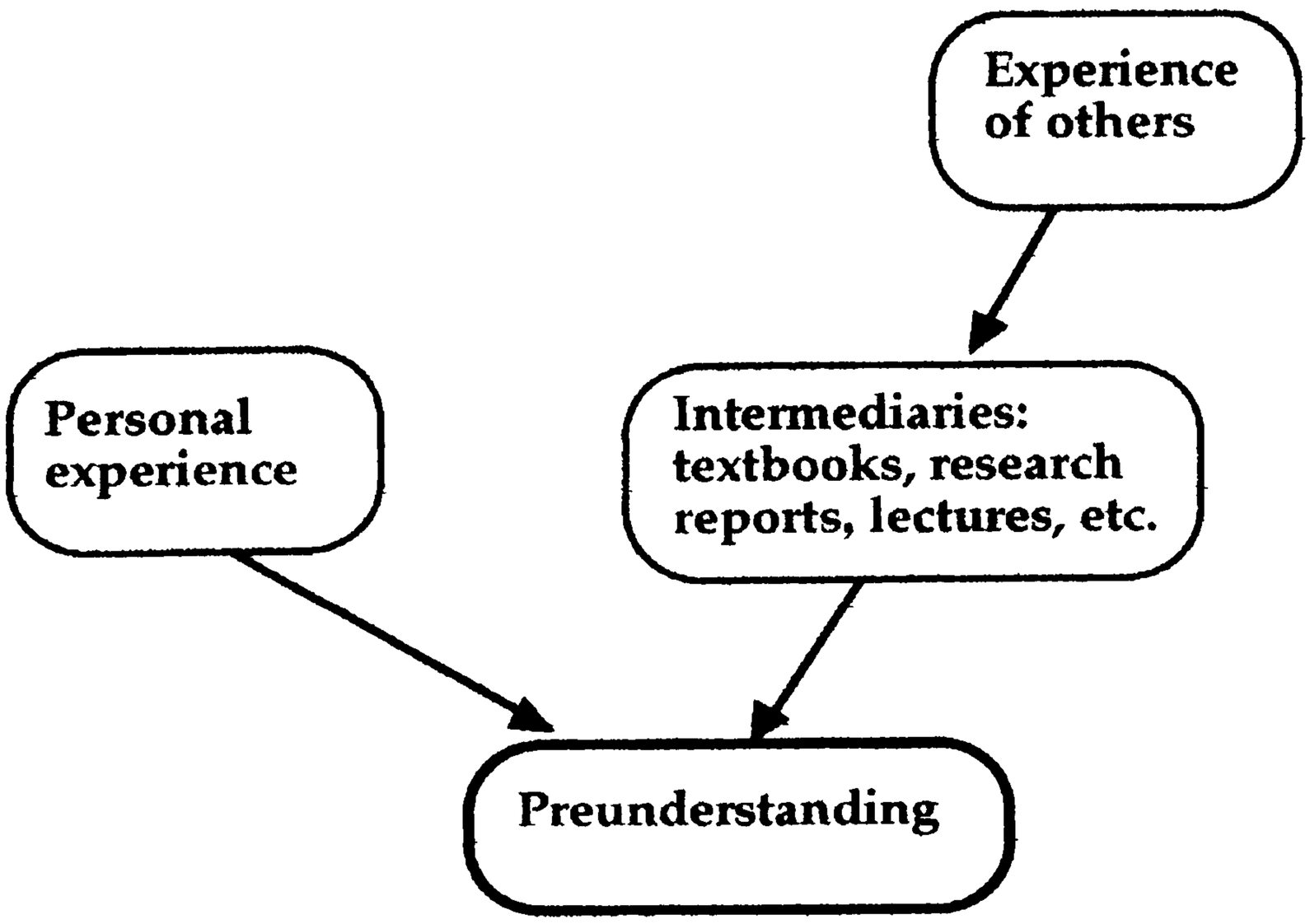


Figure 2.2 Sources of Preunderstanding (Gummesson, 1991: 58)

He makes a case that preunderstanding at second hand can have positive and negative features. On the positive side, we do not have the opportunity to experience everything ourselves, and we need the help of others to provide interpretations and descriptions that we are not able to make ourselves. There is also knowledge which we are not able to acquire by means of our own experience - this applies for example to past events, and events in widely dispersed geographical areas. However, the negative aspects of learning via intermediaries include first, that we may run the risk of misunderstanding or only superficially grasping the information communicated by others, or of being forced to accept incorrect information. Gummesson states:

> "In my experience there is considerable scope for misunderstanding in relation to information received via intermediaries." (1991: 60)

Second, the researcher runs the risk of entering:

> *"the vicious circle of academic research* where researchers quote each other, have the "right" references, publish articles in the "right" journals, and present papers at the "right" conferences. According to Gustavsen (1982) it takes on the form of distance research that has only limited contact with the actual subject of the research... This type of research assumes that one is able to simulate change back at the research institution, something that is clearly not possible." (1991: 60-1)

According to Andersson, in positivistic science there is "no merit in having studied a problem area at first hand. On the contrary it exposes the researcher to the risk of personal bias" (1981: 42). But hermeneutics leads us to quite the opposite view, Andersson again:

> "It is not possible to follow an interpretive approach at a distance. It requires a personal commitment on behalf of the researcher such that he invests his personality and experience in the field of research; a personal commitment is an actual requirement for understanding" (1981: 94-95 quoted in Gummesson, 1991: 154)

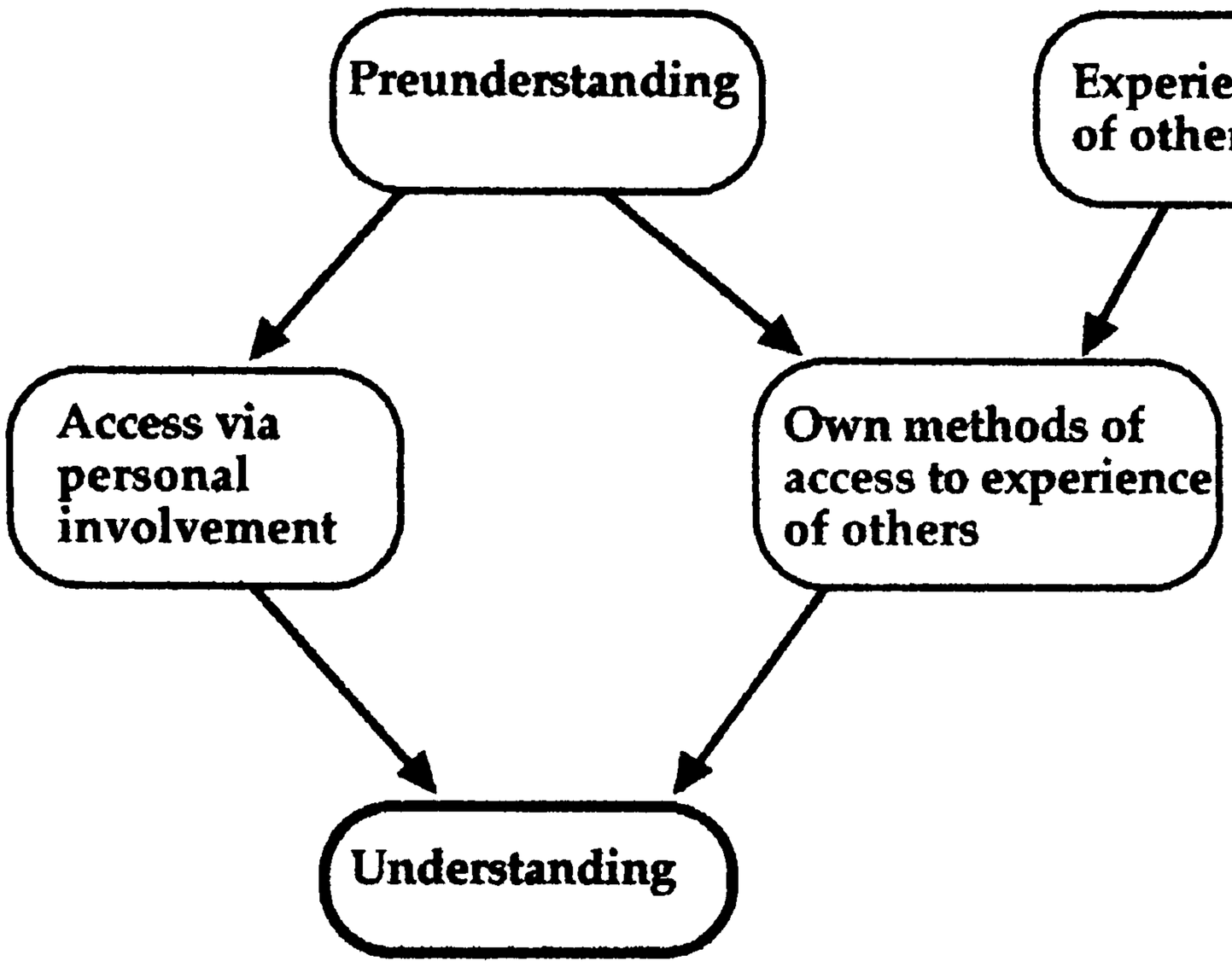


Figure 2.3 Sources of Understanding
(Gummesson, 1991: 61)

Figure 2.3 illustrates Gummesson's view of the development of understanding in relation to a specific project.

> "Researchers/consultants approach a project with a certain preunderstanding. By means of access as participants in a process, they are able to gain certain insights of their own. At the same time they possess the methods that allow them to analyse and interprete the experiences of others." (1991: 61)

Here Gummesson makes comments that are very similar those made by Reason and Rowan in their discussion of hermeneutics. Gummesson states:

> "the hermeneutic circle can be illustrated by the following statements: "no understanding without preunderstanding" and "an understanding of the parts assumes an understanding of the whole..."
>
> The relationship between preunderstanding and understanding is influenced by our conscious as well as unconscious intentions, our *intentionality* . Is our objective to

undertake research into phenomena of considerable scientific interest? Or are we trying to find an opportune means of reaching a more senior research post? Or is it a matter of the consultant trying to earn as much money as possible ("I am in the invoicing industry", as one consultant has put it) ? Or is it a mixture of these intentions, and others? Intentionality affects our selective perception and our path along the hermeneutic spiral." (1991: 61-2)

Reason and Rowan take the view that in modern hermeneutics interpretive method is not a special process, totally different from everyday human understanding, it is just one example of an everyday process through which people make sense of their world. *All* understanding is hermeneutical, taking place, and to a very large extent determined by, our finite existence in time, history, and culture. They view the first lesson of hermeneutics as being that we are historical beings, and that our understanding is an historical process.

In this historical understanding we are strongly influenced by our culture and our place within it. This is because human experience is partly determined by cultural traditions and is partly creative and novel, transcending culture. Modern hermeneutics argues that we can never totally transcend our historical position, and therefore the prejudgements that we bring to our understanding, are largely determined by culture. If it is the case that we cannot transcend our historical position, and get rid of our prejudgements, the basic problem for our understanding is how to distinguish between 'legitimate' prejudgements, and those that get in the way of our understanding.

One way to approach the issue of prejudgement is to seek to distinguish between some notion of an objective understanding or interpretation which is unattainable and meaningless, and reach for an interpretation which is 'intersubjectively valid for all the people who *share the same world* at a given time in history'(Reason & Rowan, 1981). Taking this view understanding can be seen as a fusion of two

perspectives: that of the phenomenon itself, whether it be the life of an historical figure, or a current social or psychological event or process, and that of the interpreter, located in his or her life, in a larger culture, and in an historical point in time.

Reason and Rowan go on to describe how 'canons' of an interpretive social science can be developed. The most important of these, in their view, is the *hermeneutic circle* :

> "Understanding.. consists of circular and spiral relationships between whole and parts, between what is known and unknown, between the phenomenon itself and its wider context, between the knower and that which is known. This is a dialectical process which is in theory infinite, although we may rest, for a time, at some point of intersubjective validity." (Reason & Rowan, 1981: 134)

This approach does, however, represent a tremendous challenge to traditional logic in which we tend to avoid 'going round in circles' and 'reinventing the wheel'. Reason and Rowan (1981) argue that the hermeneutic circle is not a vicious circle we need to avoid, but an essential aspect of understanding; what is important is not to avoid it, but to get into it in the right way. A researcher approaching a phenomenon for study will have some provisional conceptions of its meaning as a whole. As the parts are examined, the meaning of some of these will become partially clear, and this clarity can be enhanced by relating them to each other and to the whole. This process of comparison will usually lead to a re-evaluation of the meaning of the whole, which will in turn lead to a new understanding of the components. This means that there will be what they describe as a 'perpetual oscillation of interpretation'. In order to engage with this process of interpretation:

> "we have, as it were, to leap into the circle of understanding before we can start."
> (Reason & Rowan, 1981: 135)

It is not enough to leap into the cycle. It is also essential, as a researcher, to be able to record and organise the experience of engaging with the cycle in order to make sense of and communicate the experience to others. Rowan's research cycle model diagram (refered to earlier as Figure 2.1) identifies clear stages within the process. However Reason(1988) comments that Rowan's research cycle diagrams:

> "do not really show the development of.. projects through their multiple cycles of action and reflection. They tend to show inquiries as relatively simple, linear affairs, rather than as the complex and at times chaotic webs of action and reflection, reason and emotion, individuality and collectivity that they really are." (1988: 227)

Reason uses this statement as a precursor to proposing that Marshall & McLean (1988 same volume) "offer us a map of their inquiry which shows this complexity and multiple cycling rather well" (Figure 2.4). This comment, does, however, overlook Rowan's own viewpoint stated in the 1981 dialectical research paper in a section headed up 'Multiple Cycles' that the research cycle model makes it easier to grasp the desirability of multiple cycles of research. Rather than trusting to the 'one big bang' type of research project, the researcher can design a number of interlocking cycles which 'spread a net' over the phenomenon under study.

Reason argues that this gives us a new way of seeing pilot work. Instead of wanting to get rid of the pilot work as soon as possible, and get on with 'the real thing', we start being very interested in different kinds of pilot work, and how they can throw light on one another. We should then start to call them early cycles instead of pilot work, and to write them up properly, and learn from them as much as possible. This makes the early cycles more available to inspection. This is important as it is in the early stages that our presuppositions are most fully revealed. Reason takes the view that ideas which do not appear in the early cycles are quite unlikely to get inserted later. It is also important to recognise that when we are more involved with our research and more personally committed to it, we

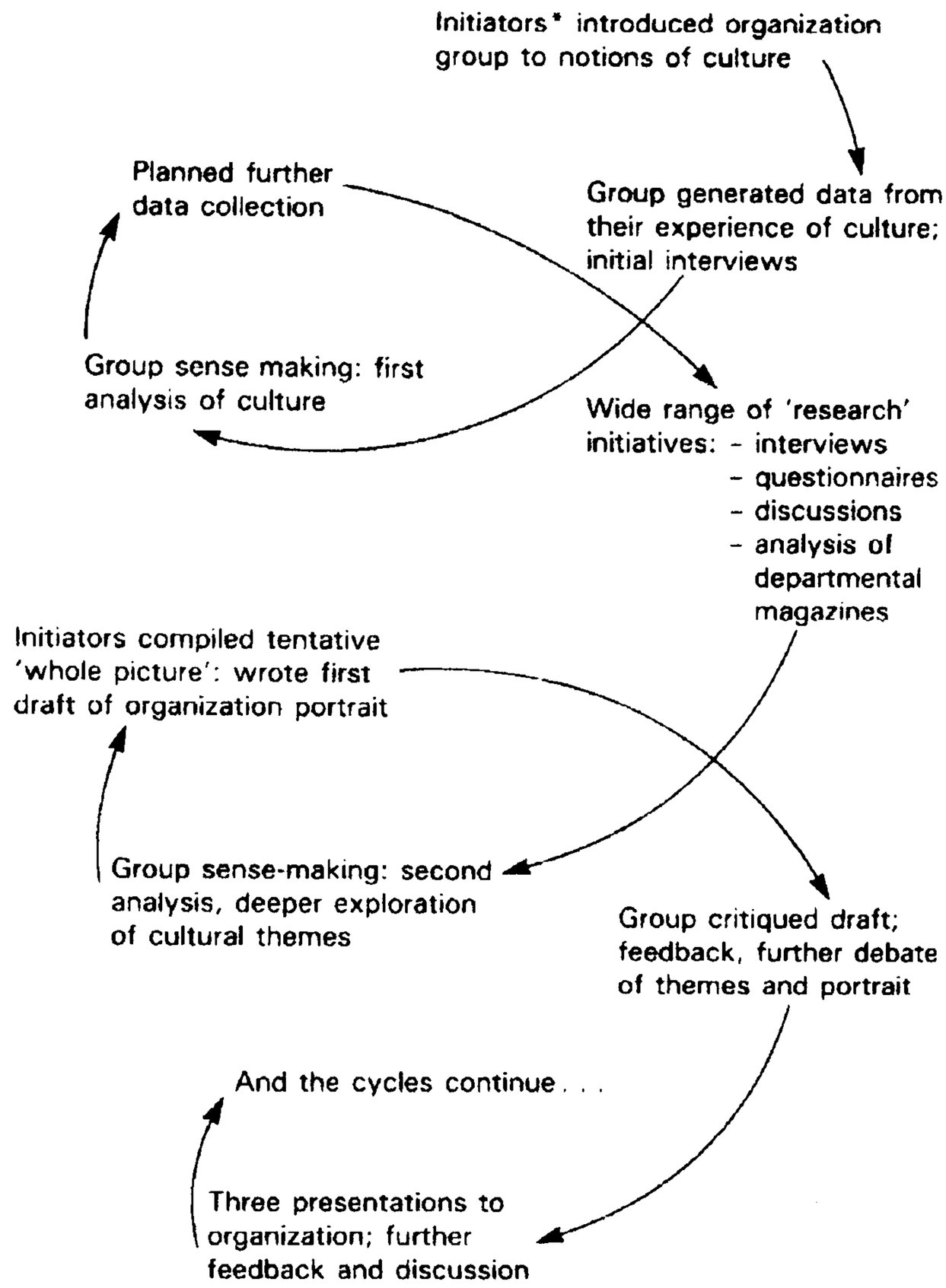


Figure 2.4 Cycles of activity and reflection in collaborative analysis of Wrekin District Council's organisational culture. McLean A & Marshall J (1988)

need to be more explicit about our prejudices and assumptions and beliefs as we enter into it. If such an attempt to be transparent in our conscious prejudices assumptions and beliefs is not made the researcher risks being guilty of evasion of more important issues - and we also we lay ourselves open to self-deception. Reason draws attention to the comments of Devereux (1981) who has pointed out how much social research is just unaware autobiography.

> "Further than that, multiple cycles give us more choices and more flexibility. We can either use them sequentially, to go deeper into a phenomenon, thus turning the cycle into a spiral or helix; or we can use them concurrently, approaching the same phenomenon from a number of different angles, and in effect triangulating it or

'knitting a pattern' of cycles. By making each cycle fully rigourous in its own terms, we can achieve a recursive validity of a cumulative nature - yielding a deeper and more extensive truth than that given by a linear approach." (1981: 105)

Gummesson (1991) makes very similar points when introducing what he describes as the *'hermeneutic spiral'* in a discussion of the role of preunderstanding in research. He states that the hermeneutic spiral: "is an iterative process whereby each stage of our research provides us with knowledge; in other words we take a different level of preunderstanding to each stage of the research" (see Figure 2.5).

This spiral form is also used by Hope, Timmel and Hodzi (1984 and 1995) in their development work Handbook *Training for Transformation*. They use the spiral as a tool of analysis to encompass both daily life and a process of critical reflection

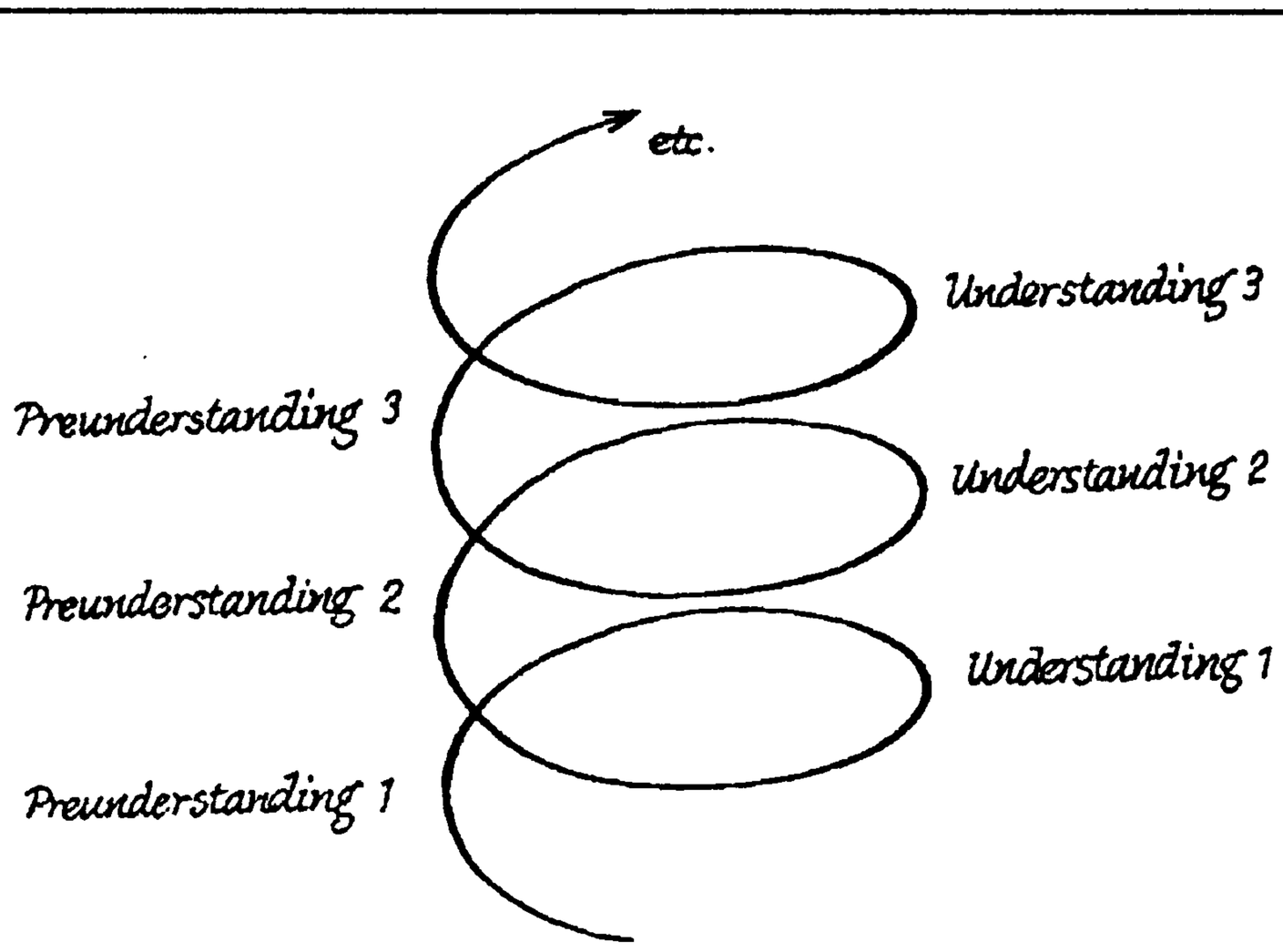


Figure 2.5 The Hermeneutic Spiral Gummesson, 1991: 62

conducted in group meetings. In the first edition of *Training for Transformation* the spiral was presented with only simple annotations marking the stages do-look-think-plan (Figure 2.6). However, in the second edition the diagram has been further developed to emphasise that the spiral does not simply involve going over

and over the same ground, but requires the introduction of new information, and the development of new models to help in the analysis of issues and problems (Figure 2.7).

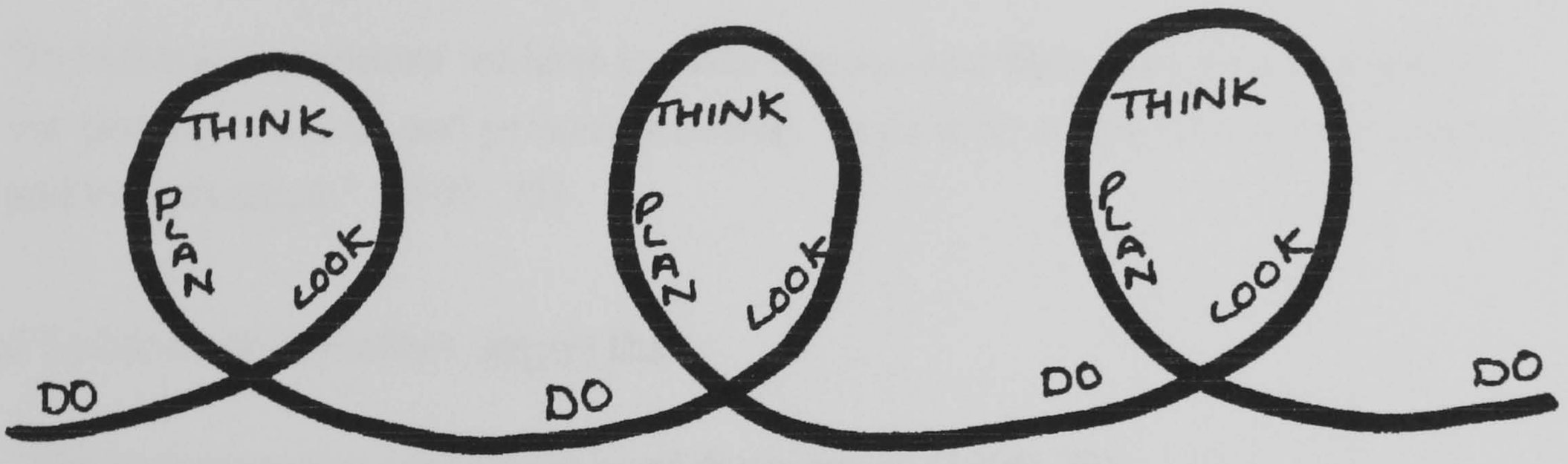


Figure 2.6 The Cycle of Action-Reflection-Action-Reflection
Hope, Timmel & Hodzi, 1984

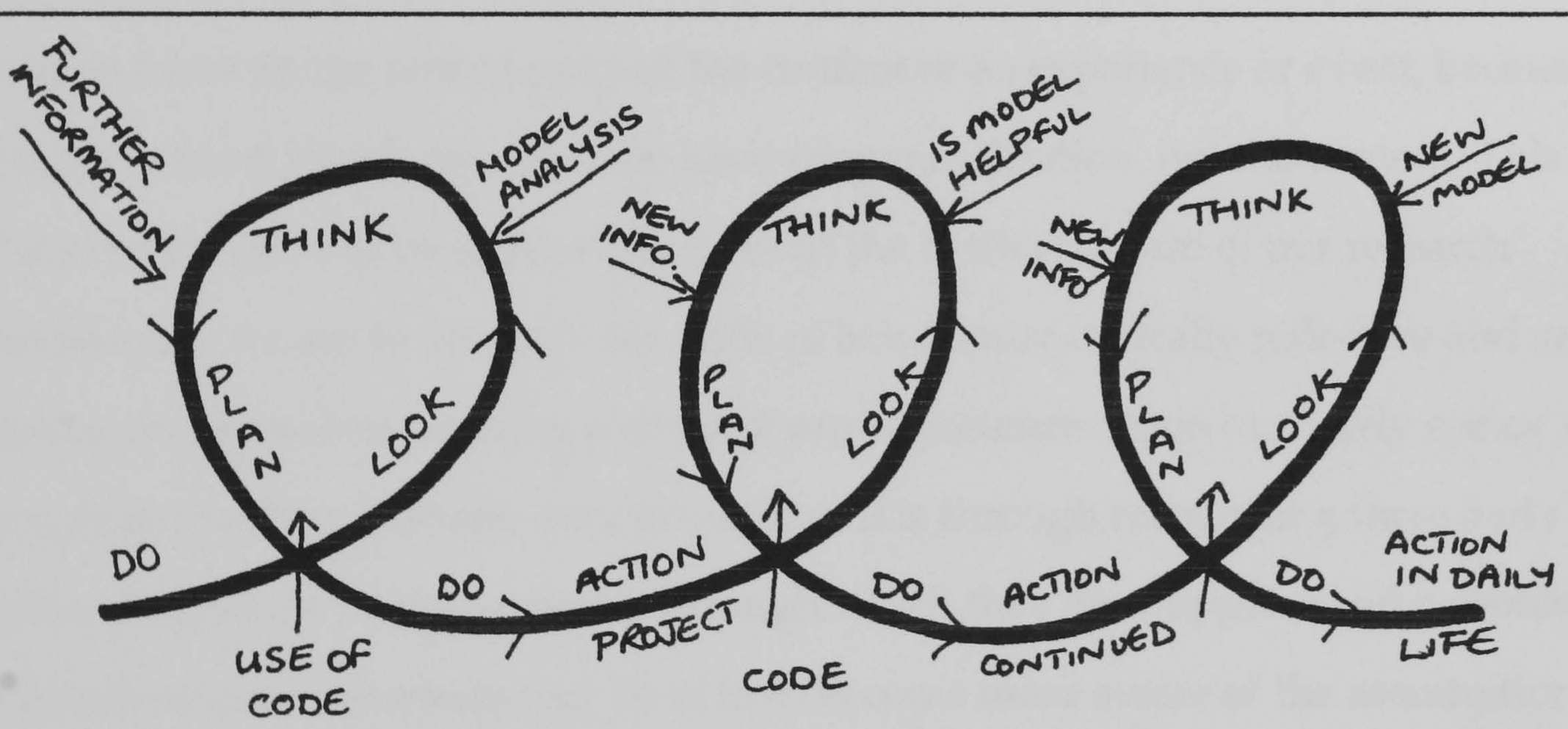


Figure 2.7 The Cycle of Action-Reflection-Action-Reflection
Hope, Timmel & Hodzi, 1995

The authors I have cited who use the spiral as a form for cycles of research also draw attention to the importance of interlinking description and analysis in order to transfer learning from past experience to inform future actions. Hope, Timmel and Hodzi (1984) comment that:

"Analysis is not a mystery. We all try and do it as soon as we try and understand the root causes of our problems. But we often go round and round in circles describing not analysing."

However, Gummesson comments that:

"In making descriptions we have to make choices and these choices are guided by our paradigm, access and preunderstanding. There is no description without analysis and interpretation." (1991: 75)

and Labonte and Feather argue that:

"Good explanation arises from good description" (1996: 29)

Like Gummesson, Labonte and Feather draw attention to the perceptions and assumptions that people bring to a situation. Labonte (1997) also emphasises the need to focus on the *context* not just the content of an experience or event, because it is the context which provides the basis for generalisation, not the content. This is linked to the need to be more explicit about the cyclical nature of our research processes. If we are to develop our skills of being more critically reflective and are seeking to generalize from the context of our experiences, then our 'early cycles' or 'preunderstanding' become very important. It is through recognising these early cycles, and the context or contexts through which they have approached a problem that individual researchers may be able to become more aware of the assumptions and perceptions that they have brought to the research process.

2.4 Research Approach: Sustainable Development Indicators and Local Government

The following Chapters document a research process which explicitly recognises the role of preunderstanding, and the cyclical nature of the development of new understanding.

Chapter 3 sets out the influences that shaped my 'pre-understanding' of sustainability indicators work at a community and local government level prior to commencing my substansive 'PROJECT'. It records the earliest cycle of understanding developed through stages of THINKING, PROJECT, ENCOUNTER and COMMUNICATION centred around the Convention of Scottish Local Authorities/Scottish Academic Network on Global Environmental Change 'Reporting on Sustainability' Conference.

Chapters 4 and 5 present two perspectives on the same cycle of project work - the Fife Regional Council Sustainability Indicators Pilot Project. One, which forms Chapter 4 sets out the understanding I had reached at the end of my period as Project Consultant for this Project. This provides a thin and linear description, essentially focussed on WHAT was done as part of the pilot process. Chapter 5 reexamines this same piece of work from the perspective of a long period of reflection, reading, writing and rewriting. This second cycle - which forms the substansive part of this thesis seeks to break new ground by providing a rich and cyclical description of the pilot process which aims to illuminate WHY the pilot developed in this way. This analysis explores the context of the choices made that shaped the final output. The iterative stages of indicators development are reconstructed from written documents and situated interpretation. This presentation illuminates the way in which formal and informal encounters with members of the Sustainability Indicators Working Group (SIWG) and encounters with others not officially involved with the pilot shaped what became included in the Sustainability Indicators for Fife Report.

Chapter 6 discusses the issues arising from the contrasting analyses presented in Chapters 4 and 5 and assesses the scope for the development of the dialectical and hermeneutic cycles of analysis to the current debates around the measurement of sustainable development.

Chapter 3

Sustainable Development Indicators: Early Cycles of Understanding

3.1 Preunderstanding

3.1.1 PhD Proposal

The proposal I submitted prior to starting this PhD in August 1993 was entitled:

> "Green Practice in Scottish Local Government: an analysis of factors affecting decision making on green issues" Rowan, 1993

This focus came about through my previous working and living experience. I had completed an honours degree in Environmental and Management Sciences in 1991. In parallel with this I had worked for 3 years as an administrative co-ordinator in a training organisation based in a local government department. I had also played an active role in the Scottish Green Party including a year as national Convenor co-ordinating the policy side of the Party's work. As a result I wished to focus my PhD on areas in which I already possesed some knowledge but wanted to build up a more detailed expertise. This stage can be equated with Rowan's stage BEING (see Chapter 2.3).

In the initial PhD proposal I characterised the major problems facing the planet in terms of social justice and environmental sustainability:

> How can the needs of future populations be met?
>
> How can the ecological balance and biodiversity of the planet be maintained?

I used the term 'green' practice because, even a year after the 1992 Earth Summit, sustainable development was not a widely recognised phrase. During the late 1980s and early 1990s I had been active in the Scottish Green Party so I was familiar with the language of green political discussion. In the wake of the UK Green Party's vote in the 1989 European elections there was also a lot of material being published around 'green' political thought and 'green practice' (for example

Thinking Green Allaby, 1989; *The Green Economy* Jacobs, 1991; *Working Greener* Ralston and Church, 1991). This said, it was clear that the Earth Summit was going to have an important role in framing the discussion of environment and development in the 1990s, and that the role of local government would come under scrutiny given the inclusion of a chapter on 'local authorities' initiatives in support of Agenda 21' in the Agenda 21 document. My PhD proposal highlighted this local dimension and focussed on the published intentions of local authorities in Scotland:

> "While there is considerable international debate about the most appropriate measures to deal with social and ecological problems, there is agreement that action at a local level has an important role. The "think globally, act locally" approach has further been reinforced by the agreements reached at the 1992 Earth Summit which called for 'National Sustainability Plans' to be drawn up, and within this process for there to be broad participation by a range of organisations including local authorities.
>
> Local authorities in Scotland have already shown some interest in environmental initiatives, with a number adopting the Friends of the Earth Environmental Charter. Some have implemented initiatives within particular areas of responsibility which have both positive social and environmental aims, for example the All Change! transport strategy of Central Regional Council, and the work on Housing and Sustainability by Glasgow City Council. No Scottish authority has yet however, adopted an integrated programme of green action across all areas of its responsibility, such as Denmark's Green Region project (eg Storstroms Amtskommune) or the local aspects of the Dutch National Environmental Policy Plan." Rowan, 1993

It was clear to me from the outset that my focus needed to incorporate an assessment of the type and quality of work being undertaken on 'green practice' by local government:

> "Currently there is no mechanism for recording or assessing the implementation of green practice across Scottish local authorities beyond the adoption of Environmental Charters. In order to assess the extent of "green practice" it will first be necessary to define it and establish an appropriate set of indices by which it can be measured."
>
> Rowan, 1993

Although my undergraduate training could be characterised as largely positivist in approach I was clear at the start of my PhD that I would need to develop my research skills in order to gain an understanding of the factors affecting decision making in local government:

> "The complex nature of current ecological and social issues does not lend itself to the use of conventional operational research (OR) approaches, where problem formulation is in terms of a single objective and an optimised solution. However, over the past decade there has been a considerable development in the field of 'soft' OR methodologies. These focus on facilitating an enriched decision making process. They are designed to be low-tech, transparent and participatory and aim to assist in the formulation and reformulation of problem situations. ...
>
> Such models offer the potential to make explicit the social element in decision making, and can reflect the level of complexity which is present in ecological systems."
>
> Rowan, 1993

My proposal framed a study that was set out in a rather conventional form - a literature review, a questionnaire survey to identify green practice in all Scottish local authorities, a detailed study of a particular area of responsibility, and the compilation of case studies of a 'sample' of local authorities selected on the basis of the questionnaire survey. I envisaged a review of documentation, followed by structured interviews with staff and with members of organisations who had been affected by the practice of the sample authority. My neat and tidy plan of action concluded with the statement:

> "This material will be used to identify and assess any elements which are seen to be key to the successful implementation of green practice and can be used as a model for other communities." Rowan, 1993

Up to this point the work on the thesis can be equated with John Rowan's stage THINKING (see Chapter 2.2).

3.1.2 Plans versus practice

With hindsight part of the reason for the neat and tidy plan approach was that that was how I thought research was done. My commitment to understanding the issues and to seeking to use my understanding to improve my own practice, and hopefully the practice of others was clear. What I hadn't really taken account of were the issues of access and of the quality of the information that would be elicited through a questionnaire survey/structured interview approach. Gummesson (1991) discusses these issues at length. He describes 'Access to Reality' as the 'Researcher's Number 1 Challenge, and 'Quality' as the 'Researcher's Number 3 Challenge (the Number 2 Challenge is Pre-Understanding and Understanding). Gummesson expresses a view that traditional research methods do not provide satisfactory access:

> "Access refers to the ability to get close to the object of study, to really be able to find out what is happening." (1991: 21)

Yet, as Gummesson points out there is a very scant literature on the issue of research access. He could find only one book that explores the concept of access (Brown et all, 1976), plus mention of it in another (Taylor and Bogdan, 1984). Brown et al, discuss three types of access: access to money in order to finance a project, access to the system (i.e. the organisations to be studied), and access to individuals in the system. Gummesson adds that he feels it is important to include the converse of this final point, namely the access of the system and its individuals to the researcher/consultants:

> "People might want to give information but are not selected by the researcher/ consultant to do so." (1991:27).

Gummesson goes on to identify two basic types of access *physical* and *mental* :

"*Physical access* is usually a basic condition for research and consultancy, particularly when decision, implementation, and change processes are studied. This includes not only initial access but also the problem of assuring continued access. The next step is *mental access*: how to understand what is actually happening in the setting, how to get people to describe it, how to observe it or how to experience it through the researcher's own involvement." (1991: 27)

3.1.3 Access and Involvement

I found it relatively straightforward to gain access to situations where 'green practice' and local authority policy and performance were being discussed.

I had been actively involved in the Scottish Academic Network on Global Climate Change (SANGEC) since 1991. SANGEC convened a regular programme of seminars and conferences which drew in academics from a range of disciplines, plus a small number of local authority officers. As a result of my participation in SANGEC I became one of their representatives on the Executive Committee of the Scottish Environmental Forum (SEF) (which despite its title always had a sustainable development focus). My roles in both SANGEC and SEF gave me the chance to talk informally to people working in several Scottish local authorities, and also to become more aware of work being carried out by non-government campaigning groups whose work was focussed on environment and development. This work can be equated with Rowan's PROJECT stage (see Chapter 2.2).

From 1993 onwards I was also involved in establishing a network of Local Exchange Trading Systems (LETS) throughout Scotland. LETSystems enable people to exchange goods and services without using cash. As LETS attracts people who have a variety of social, economic and environmental reasons for wanting to participate in non-cash trading I found that my LETS activities put me in contact with people from a wide range of organisations who also had an interest in green or sustainable development issues.

As a result of my involvement in SANGEC, SEF and LETS link Scotland in 1993/94 I had the opportunity to take part in detailed, small group discussions on a range of sustainable development issues with people from the following organisations:

Central Regional Council,
Glasgow City Council,
Strathclyde Regional Council,
Grampian Regional Council,
Etterick and Lauderdale District Council,
Storstroms Region (Denmark),
City of Seattle (USA),
Glasgow University,
Edinburgh University,
Planning Exchange,
Policy and Performance Review Network,
New Economics Foundation,
United Nations Association,
Scottish Education and Action for Development,
Easthall Residents Association,
Drumchapel Opportunities,
Highlands and Islands Forum,
Reforesting Scotland,
Friends of the Earth (Scotland),
World Wide Fund for Nature (Scotland).

My involvement at this stage can be described as 'participant observation':

> "A thorough analysis of a particular process will require the use of the researcher's personal observations that result from their presence, participation, or even intervention in the actual process to be examined. *Participant observation* constitutes the core of anthropology/ethnography, and participation with active intervention is known as *action research* or *action science*."
>
> Gummesson, 2000: 83

Throughout the early months of my PhD I was reading whatever books and journal articles I could get hold of through Stirling University library and the

National Library of Scotland. However, at this stage much of the work on green practice/sustainable development was only appearing in the literature in a patchy and sporadic fashion and much of the important contextual information was not in the public domain. In the days before such documents became readily available through internet website this restricted access to information was a major handicap. For example I was unable to obtain a copy of the text of Agenda 21, until the Summer of 1994 - and even then only through a colleague who attended an Earth Summit follow-up meeting in New York. There were papers published at this time which drew on the text (for example, Bosworth, 1993; Gordon, 1993), but these only included selective quotes or appraisals of aspects of Agenda 21.

Through my working contact with a wide range of people who were trying to introduce practice based around these ideas in their own organisations I was able to get access to others experiences, and in some cases related documentation, on a range of approaches which were being explored and refined or discarded. At the time it felt as if I wasn't 'doing research' because I wasn't brandishing questionnaire surveys or holding my conversations in the form of structured interviews. However, with hindsight my network of contacts and the quality of the dialogue that I was able to participate in on various occasions was very valuable. It enabled me to improve understanding of issues around sustainable development and local authority practice to a much greater degree than I feel would have been possible through reading or formal interview approaches.

Initially much of my work at this stage could be characterised as 'pre-understanding at second hand' (Gummesson, 1991). Although my approach at this stage was something of a hybrid between the Figures he uses to show Sources for Preunderstanding and Sources for Understanding. I was accessing the experiences of others both directly through informal conversations which occured as part of the process of co-organising conferences and seminars, and also

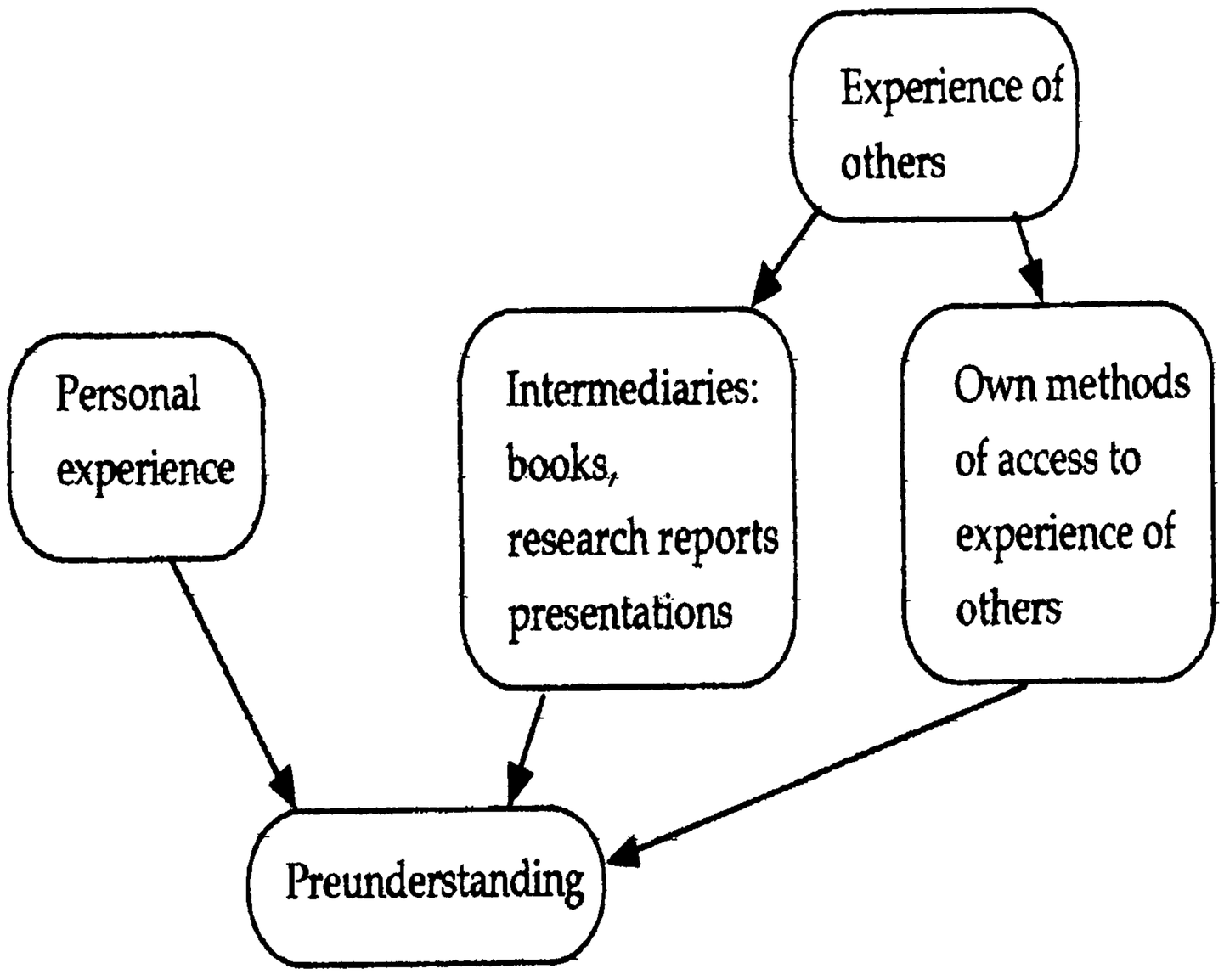


Figure 3.1 My sources of pre-understanding

indirectly though books, research reports and presentations. I have adapted Gummesson's Figures to illustrate this process (see Figure 3.1).

3.1.4 Dynamic Standard Setting: Adapting a Quality Cycle Model

It was as a result of my participation in SANGEC that I became involved in work on sustainability indicators in local authorities. Indicators were to be the subject of discussion by the May 1994 Intersessional of the Commission for Sustainable Development in New York. The need to develop indicators was also highlighted in 'Sustainable Development: The UK Strategy' published in January 1994.

The Co-ordinator of SANGEC had been heavily involved in the negotiations around the Earth Summit which led to the establishment of the Commission for Sustainable Development (CSD) the review body for the Rio agreements. In Winter 1993 the SANGEC Co-ordinator was immersed in the planning of a SANGEC conference 'Reporting on Sustainability'. The aim of the event was to bring together many of those working on indicators from academic, government and campaigning organisations and draw up a report to inform the May 1994

Intersessional of the CSD. In the course of our discussions around the organisation of the event the SANGEC Co-ordinator expressed her concerns to me about the way in which the sustainability indicators debate was developing at an international level. She was keen to ensure that the issues of diversity, local knowledge and learning processes were incorporated into work being undertaken in the UK, partly as a means of influencing the international debate. I drew on an experience from my recent consultancy teaching to illustrate my agreement with her that participation is a crucial element in devising indicators that are useful in achieving positive action:

Box 3.1 Dynamic Standard Setting at Fife Health Board - A Case Story

Between 1991 and 1994 I worked on a part-time basis as a Teaching Associate for the Management Development Unit of Stirling University. The largest single piece of work I was involved in was teaching on a Management Development module for staff of Fife Health Board over the winter of 1992/93. I was required to teach the same course 13 weeks running to different groups of staff. Each group was a mix of staff from different disciplines and gradings within Fife Health Board. I worked with each group for two days covering material on introductory statistics, budgeting and project planning, and on quality management.

What made this teaching work particularly memorable was the strength of the reaction I had each week to material I was covering on quality management. Fife had taken a lead role in the implementation of a Dynamic Standard Setting System (DySSSy) for improvements in nursing care and this drew in staff from a wide range of other disciplines. Part of the teaching material I used was therefore based on this approach.

The DySSSy approach focused on setting achievable standards. A lot of emphasis was placed on participation and a sense of ownership of the standard setting process by all the practitioners involved. Many of the care standards involved bringing together a multi-disciplinary team. The members of this team would discuss the care issue and identify the standard of care that was desirable. They would then establish how they could identify when that standard of care was being achieved. They would select measurement tools (such as observation, critical incidents, patient questionnaires, peer group review) so that the effectiveness of the implementation could be evaluated and identify who would be involved in the data collection process and how it would be analysed and reported.

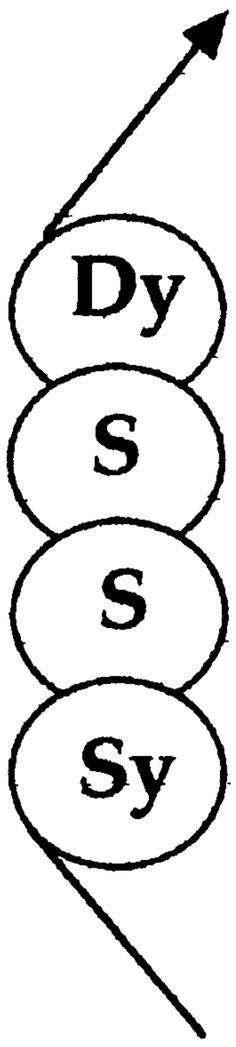


Figure 3.2 Dynamic Standard Setting System

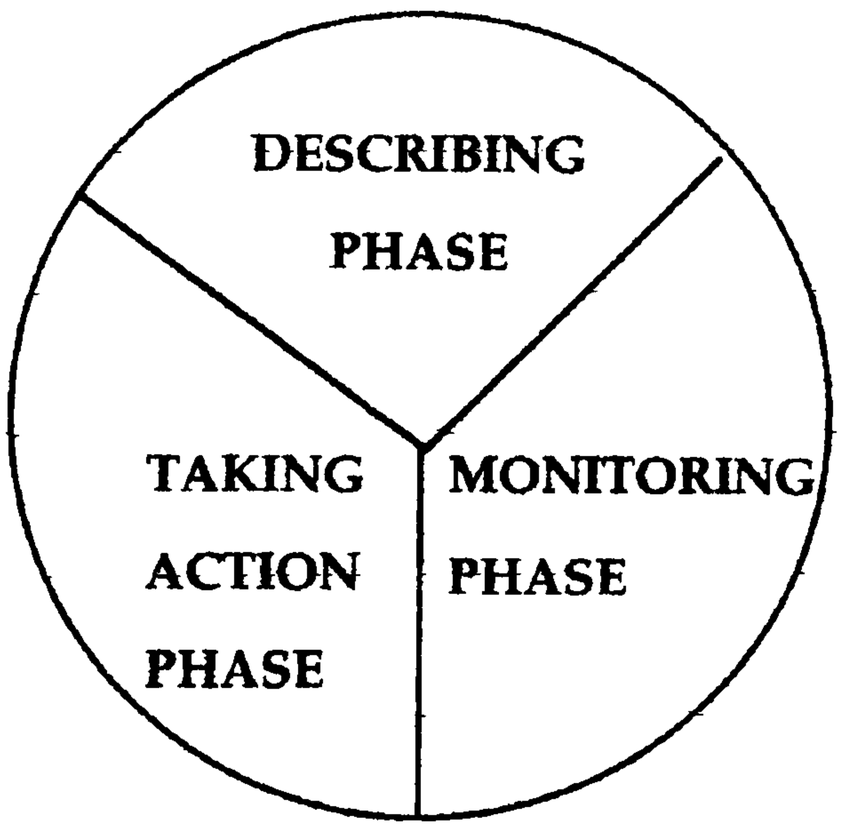


Figure 3.3 Quality Assurance Cycle

As its name suggest DySSSy was intended to be a dynamic, iterative process. By repeated cycling around a process of action and reflection on that action the aim was to be able to create initial confidence that positive change was

possible and then to build on this confidence to achieve the standard of patient care that a cross-disciplinary group of practitioners felt was desirable. Some weeks there was a very strong positive reaction to covering the use of the Dynamic Standard Setting in Fife. Emotional stories were told about dramatic improvements in apparently intractable problems. One such example involved the establishment of a process of induction and screening of patients due to undergo major operations. Prior to this review system being implemented it was apparently not unusual for a patient to be admitted to hospital for an operation only for staff to discover that the patient was not fit to be anaesthetised. The discovery could be made as late as the final check of the patients details a few minutes before the patient was to be wheeled into the operating theatre. The failure to identify this problem at a much earlier stage in their admission clearly caused considerable distress to the patient and their family. It was also a process that was very wasteful of staff time and financial resources.

Establishing the induction process involved staff from several different clinical disciplines meeting to develop a shared understanding of the root of the 'inappropriate admissions' problem. They then used this shared understanding to identify approaches that would help to tackle it, and also to identify what data they would need to collect in order to be able to assess whether the approaches adopted were delivering the desired improvements. The 'new induction process' was publicised as an opportunity for patients to visit the hospital ward to which they would be admitted, with the aim of reducing their anxiety and sense of unfamiliarity immediately prior to their operation. However, the primary purpose of the arrangement from the staff's point of view was to get the chance to get potential patients to respond to a check-list which would establish whether or not they were fit to undergo a general anaesthetic. Introducing this routine approximately two weeks

before a person was due to be admitted was described by staff involved as preventing numerous cases of inappropriate admissions.

On other weeks when I was presenting the material on the implementation of DySSSy there was a very powerful negative reaction by course participants. Some participants went on to explain their antipathy to DySSSy. Stories were told of staff feeling that they were simply going through the motions of a process because a manager had insisted that so many 'standards' were set in a particular time period. Others explained that they and their colleagues had put a lot of work into discussing quality improvement cycles and setting down how they would go about changing their practices and then had no acknowledgement for over a year from the relevant manager who needed to comment on the resourcing implications of their proposals. In two weeks out of thirteen I found that discussing their experiences of 'quality management' appeared to make a the majority of groups members very agitated and angry and I chose to curtail that part of the programme and move on to another topic.

The common theme I drew from this experience was the importance of people's sense of ownership and control of a quality improvement process in determining how effective it would be. If objectives, indicators and targets for improvement were to be effective in improving performance they needed to be part of a genuinely participatory process. To me this seemed self-evident. In my late teens I had spent a lot of time coaching young athletes, and my coaching qualifications had included coverage of sports psychology and particularly the importance of timely feedback given in an appropriate way as the basis of continued learning. The implementation of the Dynamic Standard Setting System by Fife Health Board appeared to me

to illustrate the application of these issues of feedback in quality management. If staff had had positive feedback from their managers that their participation in DySSSy was valued, and if the process they were involved in resulted in recognisable improvements in the quality of services in which they had an interest then they were prepared to apply themselves to continuing the process. If the process felt out of their control or unconnected with their concerns then it was not simply benign but a strongly negative experience.

The SANGEC Co-ordinator's reaction to this story was that it was a useful example that should be shared with others. This encouraged me to put more time into exploring the issues of feedback and learning in sustainable development. She introduced me to the work of Robert Chambers on development in low income countries (for example Chambers, 1993) and through his writing I also discovered the work of David Korten on learning processes versus blueprints (for example Korten 1980, 1984).

The SANGEC Co-ordinator encouraged me to develop this theme regarding the importance of learning processes for development, and the need for local ownership of the process of determining locally-important indicators for a wider audience. I was also able to link these discussions with work being carried out on Performance Review in Local Government by colleagues in the Department of Management and Organisation at Stirling University. As a result of concerns expressed by my colleagues, and by a Policy Research Officer with the Housing Department in Glasgow Council who had become involved in the work of SANGEC we agreed that, rather than try to fit in what needed to be a wide ranging discussion on sustainability indicators for local government into an already crowded 2-day conference programme, we would organise a separate but

linked one day event targetted at local government. This also suited the Environment Policy Officer at Strathclyde Regional Council who was involved in the SCottish Environmental Forum and was also on the Steering Group of the Sustainability Indicators Pilot Project being run by the Local Government Management Board (LGMB). This had begun in November 1993 and Environment Policy Officer at Strathclyde Regional Council was keen to promote discussion about the type of indicators that should be used and the process that was appropriate for identifying issues of concern and appropriate data for monitoring them.

3.2 The 'Reporting on Sustainability' Conferences

3.2.1 The CoSLA Conference

Environment Policy Officer at Strathclyde Regional Council, the Policy Research Officer with the Housing Department in Glasgow Council and I co-organised the one-day conference on 6th April 1994. Billed as 'Reporting on Sustainability - the challenge for local authorities' the event was hosted by the Convention of Scottish Local Authorities (CoSLA) and was jointly promoted by CoSLA, SANGEC and Friends of the Earth Scotland (Programme - Appendix 3A). The aims of the event were:

- to increase awareness about sustainability issues;
- to increase people's understanding about the role of indicators in monitoring the effects of their practice towards or away from sustainability;
- to build people's confidence that appropriately chosen indicators can be of value in shaping good practice;
- to begin to explore approaches to devising useful, context-specific indicators of sustainability in local government in the UK.

Organising this event began in November 1993. I was involved in regular meetings with my co-organisers. These meetings covered our own perspectives on

what sustainable development involved and our experiences of what this meant in practice in the local authority workplace and elsewhere. My co-organisers both had extensive networks of contacts in local government and related organisations which they put to good use in securing speakers and workshop leaders for the event. My strongly held views on the importance of participation in determining the usefulness of performance indicators earned me two major tasks. The was to write and present a 20 minute paper on 'Issues Behind Indicators' (Appendix 3B). This drew on my understanding of sustainability as an issue for local authorities, and on the way in which currently used approaches to performance indicators could be adapted to recognise the values underlying sustainable development.

The second task was to devise an appropriate workshop exercise in which all the delegates could participate (Appendix 3C). The aim was to find a straightforward way to develop a concensus around indicators of sustainability that could be adapted for use in workplaces and communities by those attending the workshop. The other aim of the workshop was to draw the delagates' attention to the importance of the process used to identify indicators in determining how valuable they will be in promoting change - we wanted to emphasise that deciding which indicators should be used is not simply a technical exercise. On the day this workshop was conducted in two stages and together these took up 50% of the working time at the event. The indicators that were developed as a result of this workshop exercise were collated and typed up as tables (Appendix 3D).

It would be unreasonable to expect a group of people thrown together into a short workshop to come up with a definative list of indicators. However, the indicator choices arrived at and the analysis provided with many of them on ease of data collection, the role(s) in which the indicators can be used and the problems associated with using a particular indicator do provide a useful illustration of what can be achieved the use of the 'three circles' thinking framework and some

well informed brainstorming. The overlaps in selection of indicators, for example on energy, and transport themes, between different workshop groups also illustrates the interrelated nature of sustainability issues and potential difficulties of splitting groups up into "specialist" teams who work in parallel and only come back together at the end of an indicator selection exercise.

At this point, 8 months into my PhD studies, the workshop format and the Issues Behind Indicators paper together represented a summary of my understanding of the subject at that stage. Preparing the material involved MAKING SENSE of my reading, access to discussions and personal experience up to that point. It included an attempt to cut through the jargon of sustainability and performance measurement so that key issues could be presented to a diverse audience. The writing and presentation of the "Issues Behind Indicators" paper and the process of preparing, and on the day facilitating the workshop process were the COMMUNICATION stage of this reserch cycle.

3.2.2 The SANGEC Conference

I was required to repeat the presentation of the Issues Behind Indicators paper as part of the 'original' two day SANGEC conference 'Reporting on Sustainability' held on 7th and 8th April 1994. The audience for this event included a much higher proportion of academics and consultants and the programme covered a wider range of background issues (Appendix 3E). This event was organised by the SANGEC Co-ordinator

, and I played a supporting role in smoothing out problems of timing and co-ordination at the event. I also ran a shortened version of the CoSLA workshop session compressed into one hour which was really too short to be useful but illustrated why we had organised a separate one-day event so that there was time to address the issues more effectively. The SANGEC workshop involved several of the people who had been involved in framing and/or acting as consultants to

the LGMB Sustainability Indicators Project, giving me first-hand access to the thinking behind the early stages of the Consultants' scoping and indicator menu selection work.

My involvement in the CoSLA and SANGEC Conferences as an organiser/ presenter equate with John Rowan's stage ENCOUNTER. I found my involvement in these events a fascinating if frustrating process. As something of an outsider it was a surprise to me how entrenched individuals were within particular ways of looking at the 'problem' we were dealing with. It felt as though many of the scientists were working on the basis that if they came up with an elegant enough scientific model to describe, say, global climate change, then governments, companies and individuals would immediately realise the seriousness of what we are facing and change their behaviour for the better overnight. There didn't seem to be any clear mechanisms being proposed to make links between policy, implementation and review, or between different academic or practitioner disciplines, or even between work at different geographical levels from the very local to the international. It felt to me as though much of the debate was very much divorced from most people's daily lives and I was struggling to see how connections could be made.

Repeatedly during the CoSLA event one of my Stirling University colleagues took me aside to say that what we were doing was all very well, but that 'we were starting from the wrong place' by dealing with indicators separately from the wider policy process of the local authority. I found it very difficult to get across that the reason we were approaching indicators in apparent isolation from the policy making process was that that was what was happening in the national and international sustainabile development indicators debate. This was forcefully illustrated by the nature of the debates at the SANGEC event the following day where a focus on getting the natural science models 'right' dominated several of

the plenary sessions leaving little space to discuss how these models were to have a useful impact on practice. As organisers of a separate local authority event we were already trying to use the local authority interest in sustainability indicators to draw attention to the need and the scope for better integration between policy, indicators and practice - but it was difficult to operate in complete isolaion from the rest of the burgeoning debate on 'how to do sustainable development'. I recognised the point being made about the need to ground indicators in the policy process of local authorities. However, most of the people who attended the CoSLA event were not present at the SANGEC Conference and there was only a limited time-window at the SANGEC event in which to try and drawn attention to the need to link indicators firmly into the policy making process. As a junior player in an already established debate I was unsure what else I could do to tackle the problem of the current debate 'starting in the wrong place'.

Following the CoSLA event a short report of the day was written up and circulated to those that had attended and to individuals and organisations who had expressed an interest in the sustainable development indicators debate. The conclusions of the CoSLA event highlighted in the Conference report (Appendix 3F) were:

1. The process of organising the conference has already encouraged communication between a wide range of people including many who had not previously realised that measuring sustainability was of interest to them!

2. The process of developing the workshops and the comments from participants suggest that there is value in developing training materials
   (a) for use by local authority staff
   (b) for use by Elected Members
   (c) for use by Community Councils/the public

3. Participants from a social policy background proved to be particularly adept at making the linkages between the impacts of environmental and social policies.

This has already stimulated the Scottish Environmental Forum to focus forthcoming work on Communities and Sustainability.

4. The outputs of the Conference are being presented to the Steering Group of the LGMB Sustainability Indicators Project for consideration in their discussions.

These conclusion are process rather than output based. That is, they do not recommend that praticitioners adopt the particular indicators chosen by the workshop groups. Instead the focus is around building interest in the development of sustainability indicators and the encouragement of communication between practitioners across a range of disciplines.

3.2.3 Opportunities Created by Early Cycles of Research

My involvement in the running of the two Reporting on Sustainability events had an important impact on my research approach because it had the effect of changing my status and therefore my access to work on sustainability indicators. On the Doctoral Programme taught course I attended an analogy was used "that doing research is like taking part in a group conversation":

> 'It is a necessary but not sufficient condition to have the appropriate cognitive skills and knowledge base (so that you know what people are talking about and can think of something appropriate and interesting to say) but how much you are allowed to say in a conversation depends also on your social position in that group and what that group is talking about at that particular moment in time.' Francis (1993)

Prior to the Reporting on Sustainability events I had a network of contacts focused around my involvement in SANGEC and in community campaigning work in Scotland combined with the low status role of new PhD student. My involvement in these events gave me a much clearer role within the community of academics, activists, and, most importantly given my research interests, local government. This greatly increased the extent to which I was able to be a credible participant in

the sustainability indicators research conversation. It was this involvement that subsequently led to the access opportunity to what was to prove to be the substansive experiences upon which this thesis is based.

In the months following the April 1994 Conferences I spent my time reading around the issue of participation in development, visiting practical projects and attending conferences. These included an event hosted by 'Rendezvous' a voluntary organisation in Cheltenham. This organisation had an environment and development focus and, exceptionally, had been funded by Gloucestershire County Council to take the lead role on their Local Agenda 21 process. Local authorities generally ran the Local Agenda 21 process 'in-house' with voluntary organisations having consultative or working group membership roles only. This gave me a fresh perspective on the relationships that were possible between community based organisations and local government (in some areas at least). A topic of discussion among activists working outwith local government was that while Agenda 21, and therefore Local Agenda 21, emphasised community participation in decision making, it was difficult to see how this would work within the departmentalised confines of much local government practice of the time.

I also attended the United Nations Association 'New Directions' Conference held in Manchester in June 1994 which focused on Sustainable Development and the Urban Environment. This was of interest on two counts. One was a discussion (in a Chinese Restaurant) about the LGMB Sustainability Indicators Project at which I found out rather more about the dynamics of the team of Consultants working on the contract and the personalities involved in the LGMB steering group than was covered in the official workshop at the event. The second was a plenary presentation by the Chief Planner for Seattle, USA, on Seattle's approach to Sustainable Development. In it he commented that:

"If the community does not own the definition of the problem and the solutions then the plan is meaningless." (UNA-UK, 1994: 18)

and on the subject of good planning as good politics he set out that:

'It's about people not things;
It's about means not ends;
It also involves:
What is, not what you might wish were true;
Success not winning;
Embracing complexity not avoiding it;
Recognising that myths and beliefs are more powerful than facts in the short term.'
(adapted from UNA-UK, 1994: 19-20)

This closely parallels issues I had been studying in the work of Chambers and Korten on the importance of learning processes not blueprints and the crucial role of feedback in effective action. Chambers (1989), for example, draws the conclusion that many development projects have failed to produce their intended benefits because of the mindset of the people who designated and/or managed them and the decision making assumptions that result from this. He argues that development professionals tend to share certain biases and that these biases add up to a 'normal professionalism'.

"Normal professionals focus on:
- things rather than people;
- the rich rather than the poor;
- men rather than women; and
- numbers rather than qualities"
(adapted from Chambers 1989: 1)

Chambers expresses the view that as a consequence, 'normal professionals' have often misunderstood the problem and mis-specified the solution. Although the work of Chambers and of Korten was based largely on their experience of working

with low income communities in low income countries, the ideas that they were putting forward regarding problems in existing decision formation approaches had also been increasingly widely recognised in other fields (eg. Rosenhead, 1989, discussing operational research, Ekins, 1986, discussing economics, Smil, 1993, discussing science). I increasingly felt there was a resonance between their ideas and my theoretical and experiential understanding of development issues in communities in Scotland.

I was still working on MAKING SENSE and COMMUNICATION of the theoretical work I had been involved in up to that point. The Reporting on Sustainability 'Issues Behind Indicators' paper had been written for a local government officer/elected member audience who were assumed to be non-specialists on sustainability, development or performance measurement. To develop my doctoral research I was clear that that I needed to do more than summarise and present the work of others. At a personal level I felt strongly that I needed to integrate what I had studied regarding the process and context of decision making and an individual or community's sense of ownership of that decision and the outcomes arising from it.

I did not focus only on sustainability indicators at this stage because I felt that they were only part of the solution. Taking on board the points made by Claire Monaghan, and my earlier experience with Dynamic Standard Setting in the Health Service, it appeared inappropriate to divorce the selection of sustainability indicators from the context of the organisations by whom and for whom they were being developed.

In order to have a sense of the value and limitations of sustainability indicators I believed it was important to gain a more detailed understanding of the

organisational context in which sustainability indicators were being developed. This, in turn might give some insight into the extent to which the decision making process/context had an impact on the quality and extent of outcomes arising from a sustainability indicators selection and publication process. Adopting this research focus, however, presented an access problem: how to gain access to sufficient information about the process and context of decision making to build up a multi-dimensional image of the 'organisational context' of the the decision making process with regard to sustainability indicators.

In September 1994 I was, unexpectedly, offered a solution to this dilemma. An opportunity for access to local authority work on evaluating the effectiveness of practice through consultancy work with one of the LGMB Sustainability Indicators pilots. Although this was not part of my original work plan when I set out on my PhD, I felt that it offered an unrivalled access opportunity to learn directly about the processes that I had up to then only be able to study in theory or at secondhand. It is this experience that forms the basis of subsequent Chapters of this thesis.

Chapter 4

Sustainability Indicators for Fife:

Thin Description

STUDY REPORT

Sustainability Indicators Project

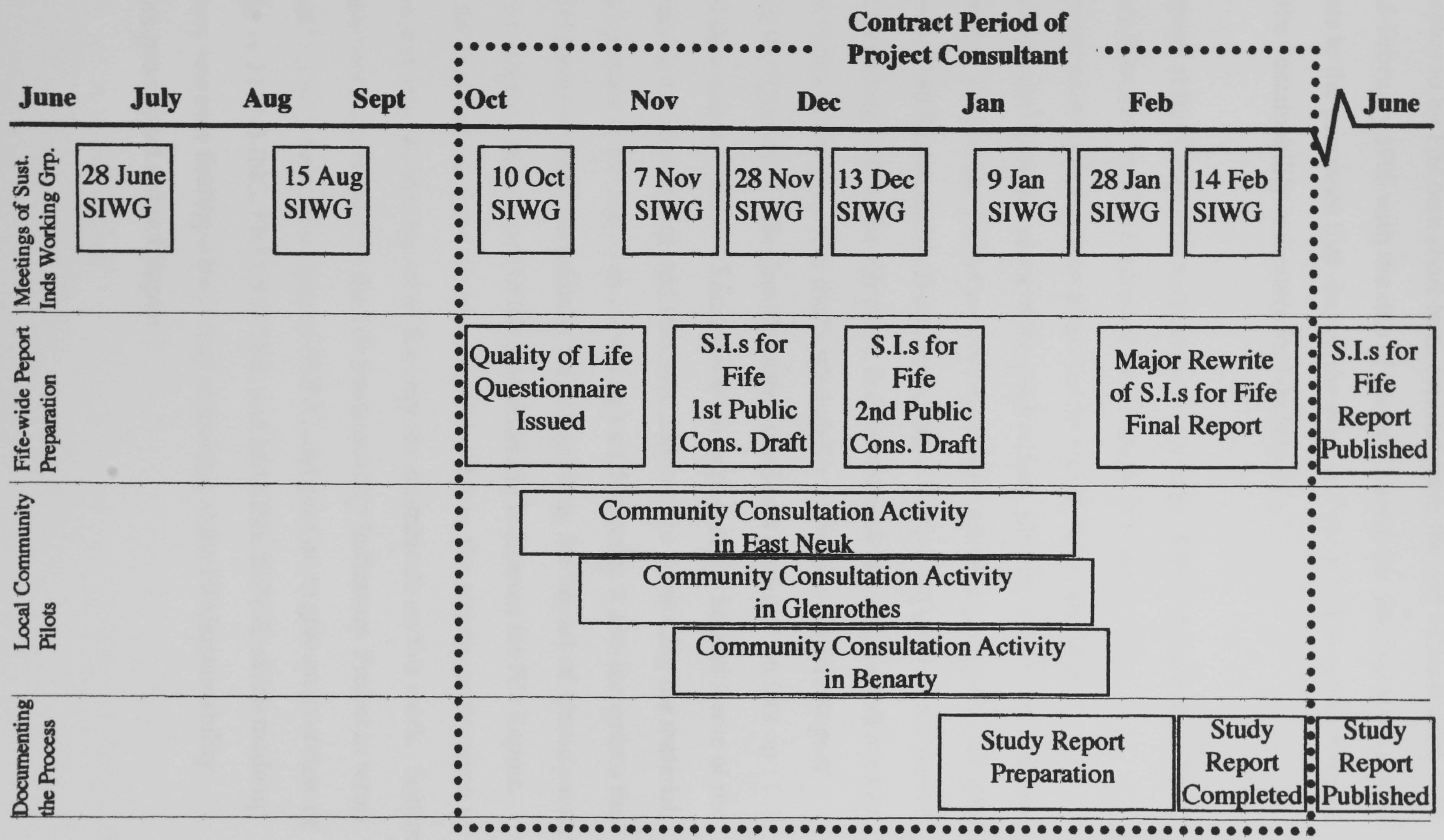
Produced by Lesley Rowan for Fife Regional Council

4.1 Introduction

The formal process of the Fife Sustainability Indicators project was managed by a Sustainability Indicators Working Group (SIWG) made up of staff from several departments within Fife Regional Council (FRC), but predominantly from Economic Development and Planning. The two key tasks for this group were (i) to manage the production of a Sustainability Indicators for Fife report covering the whole Regional Council geographical areas; and (ii) to conduct a series of local consultation exercises in three selected communities to explore the scope for developing community level indicators reports. The key stages of consultation and the publication of interations of the Sustainability Indicators for Fife Report are set out in Figure 4.1.

The Local Government Management Board (LGMB) Sustainability Indicators Research Project had begun in November 1993. In January 1994 they had sought the involvement of local authorities to act as pilots for sample menus of indicators. Fife Regional Council had made an application to participate and in April 1994 were informed that they had been selected as one of 6 pilot authorities. Initially it was envisaged that Fife Regional Council would be able to complete their obligations as a pilot through the work of existing staff. However, once the project got underway it became clear that more staff time would be needed and early September the Depute Director, Economic Development and Planning secured a grant of £5,000 from the Scottish Office towards additional staffing and publications costs for reports produced as project outputs. My involvement in the Fife pilot came through recommendations by other people working on sustainable development. These recommendations were largely based on my role as a co-organiser and presenter at the 'Reporting on Sustainability' conference hosted by CoSLA in April 1994 .

Figure 4.1 Map of the Fife Regional Council Sustainability Indicators Project Process 1994-95



I was employed by Fife on a short-term contract from the end of September 1994 until mid-February 1995 with the title of Project Consultant. This gave me day to day access to the processes that shaped the pilot and contributed to the principal output: the Sustainability Indicators for Fife Report.

The purpose of this Chapter is to describe the process of the Fife Sustainability Indicators Pilot Project. The content of this Chapter is based on the contemporaneous analysis of the project as set out in the Study Report of the project written in the final weeks of the pilot period. Section 4.2 sets out the early decisions that shaped the project in relation to Fife's role as a pilot authority within the wider LGMB Sustainability Indicators project. Section 4.3 looks at my role as Project Consultant within the Fife pilot. Section 4.4 gives an overview of the key activities in the development of the 'Sustainability Indicators for Fife Report' including the 'Quality of Life Questionnaire' used as a consultation tool on sustainability issues. Section 4.5 addresses the impact of the limited frame of the Study Report, and the convoluted structure adopted for presenting the material, on the usefulness of the report as a learning tool. However, it also recognises the value of the points made, particularly those regarding the impact of participatory process on shaping the content of the Sustainability Indicators for Fife Report. Section 4.6 looks at the three 'Community Pilot' areas, the activity undertaken in each area and stresses the impact of the very short timescale on this work. Section 4.7 reviews my involvement in the Fife Sustainability Indicators Project in terms of Rowan's (1981) dialectical stage of BEING and goes on to give an overview of the stages of THINKING, ENCOUNTER, and MAKING SENSE which made up the journey towards finding a fresh way of looking at the Fife Sustainability Indicators process set out in Chapter 5.

4.2 The Fife Sustainability Indicators Project: Early Stages

4.2.1 The Rationale for Fife As a Pilot Authority

Fife Regional Council originally expressed an interest in becoming a pilot authority in the LGMB Sustainability Indicators Project in February 1994. The Depute Director responsible for Environment issues in the Economic Development and Planning Department completed the application form submitted to the LGMB. On it the following activities were identified as demonstrating Fife's progress on sustainable development and environmental issues:

~ the publication of a Charter for the Environment;

~ the operation of a Charter for the Environment Steering Group;

~ the development and implementation of three annual action programmes associated with the Charter;

~ the production of a State of the Environment Manual;

~ the production of a Green Households Booklet;

~ the operation of community grants schemes for community planting, nature conservation and environmental improvements, and

~ the operation of the Green Business Fife initiative which undertook practical projects with businesses with technical and financial support from Fife Regional Council.

~ Fife was also an Environmental Management and Auditing Systems (EMAS) pilot authority (FRC, 1994a)

Other responses given in the questionnaire give a flavour of the perception held by the Depute Director of Fife's work on sustainable development up to that point and Fife Regional Council's relationship with other Scottish Local Authorities in this work. In response to a question "How do you see participation in the project benefiting the authority, the community and the project" the following answers were given:

the authority
By being in the forefront of using/developing the indicators for its own use

the community
By reinforcing the FRC approach to achieving change on the ground as opposed to Public Relations

the project
Bringing a Scottish perspective and practical experience from one of the leading authorities in Scotland (FRC, 1994a)

And where space is provided for "Any other Comments on the Pilot Project the following points were made:

Collecting Data - *This is seen as an area of expertise*

Working across departments - *There is a fully fledged corporate structure through the Charter Steering Group and the Environment Committees that will ensure a more than adequate approach.* (FRC, 1994a)

In later correspondence with the LGMB the Depute Director, Economic Development and Planning , stated that:

> "I have advised that as we see this as providing an opportunity to develop our Local Agenda 21 proposals emphasis in the Fife pilot could well be placed on social indicators. This is reinforced by the fact that we have done some considerable work on environmental indicators through preparation of the State of the Environment report." (FRC, 1994b)

In April Fife was confirmed as one of the 6 pilot authorities selected to participate in the LGMB Project. Although the start date for the pilot projects was 1st June an agreement had been reached between the Depute Director, Economic Development and Planning, and the LGMB that because of the timing of the holiday period in Scotland (mid July to late August) it would be unrealistic to expect to make much progress with public consultation until September. Fife would therefore not commit itself to completing the pilot period by January 1995. Fife would report back to the LGMB on work to date at that stage, but saw the project in relation to wider work on Local Agenda 21:

"it was agreed that it would be entirely appropriate to use the project as a starting point for consultations over the pilot but more importantly beyond it" (FRC,1994b).

4.2.2 Management of the Sustainability Indicators Project

Fife set up a Sustainability Indicators Working Group (SIWG) to manage the Project. This comprised staff from the Fife Regional Council Departments of Economic Development and Planning, Education, Community Education, Engineering (Roads) and Social Work. This Working Group was described by the Depute Director, Economic Development and Planning, as "quite a radical departure from usual practice in that it involved cross-department working" (Terwey, 1994). The individual representatives from each department had been chosen not only for the service responsibilities they covered but also "for their established interest in environmental issues" (Terwey, 1994). The 'Sustainability Indicators Working Group' met on ten occasions between July 1994 and March 1995. I was present at seven of those meeting in my role as Project Consultant. These meetings were the forum at which decisions were made about the process of the project, and about the content of publicity and publications arising from the project.

4.2.3 The Sustainability Indicators for Fife Report: Early Decisions

Background information on the first two meetings of the SIWG has been taken from the notes of meetings and from the scoping study of the LGMB project, as they predated my involvement in the Fife project.

The first meeting of Fife's Sustainability Indicators Working Group - 27th June 1994

The first meeting started with initial introductions between the Sustainability Indicators Working Group (SIWG) members and an outline of the purpose of the project in relation to Agenda 21, to Fife's proposed Sustainable Development

Policy (which was due to go to the Policy and Resources Committee for approval in September 1994) and also the relationship of LGMB project to the work of the Interagency Committee of the United Nations Commission on Sustainable Development (FRC, 1994c). It was emphasised that "The project would be undertaken on a very tight time scale" (FRC, 1994c).

Prior to the first meeting members of the Working Group had been circulated with copies of the LGMB guidance report to local authorities for the Sustainability Indicators Pilot Project. This outlined the objectives of the pilot phase:

> •to test the usefulness of the indicators against the given criteria;
>
> •to set up or build upon existing community involvement processes;
>
> •to raise awareness of the sustainability issue generally in communities and local authorities.
>
> (LGMB, 1994b: 60)

And the key tasks of the pilot authorities, which were:

> • with reference to the checklist of what makes a good indicator, assess how relevant an indicator is (or might be) in practice at the local level;
>
> • assess whether chosen indicators provide information for personal empowerment, as well as information for action at the authority level;
>
> • consider how best to achieve cross-sectoral discussion and community participation in reporting on the indicators;
>
> • identify opportunities to link the indicators with other programmes, both inside and outside the local authority sphere of influence;
>
> • bring other related issues, including short, medium and long term considerations to the attention of the pilot.
>
> (LGMB, 1994b: 60)

There was also a list of the criteria on which indicators were to be selected.

> Indicators must:
> • be significant;
> • have a reasoned relationship to sustainability at both a local and a global level;
> • be relevant to local government, but also to the ordinary citizen (i.e. not performance indicators for local authorities, but for local communities);
> • reflect local circumstances;
> • be based on (relatively) easy to collect information;

- show trends over reasonable time scales;
- have a relationship to other sets of indicators;
- be both individually and collectively meaningful;
- be clear, easy to understand and educate as well as inform;
- provoke change (in policies, services, lifestyles, etc.);
- lead to the setting of targets or thresholds.

(LGMB, 1994b: 65-6)

This list was followed by a note:

> "do not allow ease of information-gathering to be too important in your selection of indicators. There may be some indicators that it is impossible to calculate during the six-month pilot period, because of lack of time or resources. Indicators requiring special surveys may well fall into this category. You may still want to choose them because they meet some of the criteria. You would then spend the pilot period exploring how they could be calculated." (LGMB, 1994b: 66)

Members of the SIWG were asked to submit suggestions of appropriate indicators drawn from the indicators listed under the LGMB '13 themes' (Table 4.1) to the SIWG Chair by July 29th. (The full LGMB menus are set out in Appendix 4A). Discussion was noted regarding the most appropriate areas in Fife "in relation to existing community networks, geographical aspects and types of issues arising" to be selected as pilot communities (FRC, 1994c).

At this stage the location of three pilot communities had not been finalised and suggestions for pilots areas was also sought in time for the next SIWG meeting.

Table 4.1 The 13 Themes proposed by the LGMB Steering Group

1. Resources are used efficiently and waste is minimised by closing cycles;
2. Pollution is limited to levels which natural systems can cope with and without damage;
3. The diversity of nature is valued and protected;
4. Where possible, local needs are met locally;

5. Everyone has access to good food, water, shelter and fuel at reasonable cost;

6. Everyone has the opportunity to undertake satisfying work in a diverse economy. The value of unpaid work is recognised, whilst payments for work are fair and fairly distributed;

7. People's good health is protected by creating safe, clean, pleasant environments and health services which emphasise the prevention of illness as well as proper care of the sick;

8. Access to facilities, services, goods and other people is not achieved at the expense of the environment or limited to those in cars;

9. People live without fear of personal violence from crime or persecution because of their personal beliefs, race, gender or sexuality;

10. Everyone has access to the skills, knowledge and information needed to enable them to play a full part in society;

11. All sections of the community are empowered to participate in decision making;

12. Opportunities for culture, leisure and recreation are readily available to all;

13. Places, spaces and communities combine meaning and beauty with utility. Settlements are human in scale and form. Diversity and local distinctiveness are valued and protected.

The second meeting of Fife's Sustainability Indicators Working Group:

15th August 1994

At this meeting the Group sought to select at least one indicator to be monitored for each of the 13 themes as requested by the LGMB. The selections were based on indicators for which data was felt to be readily available - which were labelled as category A indicators. These choices were acknowledged to be data driven based

largely on material already collected for the State of the Environment Manual. The indicators for which further work was likely to be required were described as Category B. These were the indicators where the focus during the pilot period was to be on "definition and appraisal" (FRC, 1994d). Several other indicators were identified by members of the group which were considered worthy of further consideration - these were labelled as Category C indicators. These selections are listed as Table 4.2.

Table 4.2 Fife Regional Council's Initial Selection of Indicators for Data Collection

The prefix numbers refer to the LGMB menus of indicators (Appendix 4A)

Category A	**Indicators for which information was thought to be readily available.**
1.2	Domestic waste production per capita per annum
1.6	Water abstraction rate per capita/per capita consumption
2.5	Tonnes of sewage discharged untreated or incinerated
2.10	Percentage of river mileage in class one
3.5	Area of protected natural or semi-natural habitats
4.3	Percentage of local demand for water met from local resources
5.1	Number of homeless households in temporary accommodation
5.3	Percentage of local authority dwellings empty
5.4	Percentage of population with drinking water below EC standards
6.2	Rate of long-term unemployment
7.3	Infant mortality/1000 births
8.5	Kilometres of dedicated cycle routes
8.6	Investment in public transport as a percentage of expenditure on roads
9.2	Violent crimes/1000 population
9.3	Burglaries/1000 population
9.6	Number of reported rapes/indecent assaults
10.1	Children under 5 in nursery/preschool as a percentage of total
10.2	Pupil/teacher ratio
11.6	Percentage of electorate voting in local elections
11.7	Number of responses to local plan or similar consultation document (Environment Charter questionnaire)
12.4	Library use per capita
13.8	Number of tree preservation orders

Category B **Indicators expected to require further work. Within the remit of the project work was expected to be focussed on definition and appraisal.**

1.10	Area of open land lost to development
2.8	Area of contaminated land
3.6	Change in population of Red Data Book species
6.8	Total number of child day care spaces available (at Fife wide and local level)
7.7	Percentage of population covered by cervical cancer/breast cancer screening programmes and take up
7.9	Road traffic accidents/1000 population
8.1	Percentage of population within 400 metres of public transport
8.3	Percentage of population 'within x metres of basic services' (eg. health centre, food shop, post office/bank, school) (at Fife wide and local level)
11.3	Number of voluntary groups
12.2	Percentage of population living > 1 km from accessible green space of recognised value. (at Fife wide and local level)
12.3	Percentage of public buildings with disabled access or facilities for the physically impaired.
13.7	New trees planted per capita

Category C **Indicators which were felt to have interesting potential for further exploration. There was no attempt to link these selections to the LGMB themes.**

Sighting of bats
Nitrate levels in bore holes for water extraction
Local democracy (number of surgeries, usage, advertising of surgeries)
Women & domestic violence
Health
Cycling Proficiency

It was recognised that community involvement at the Fife-wide level "would be problematic" (FRC, 1994d). Consultation with communities during National Environment Week in May 1994 had been taken into account in drawing up the list of indicators. Two further mechanisms were suggested: a report on the project, including the agreed list of indicators was to be presented to Fife Regional Council's Policy and Resources Committee on 1st September for comment, and

the Environment Charter list of consultees (which included some social groups) would "be used to gauge the indicators" (FRC, 1994d:2) .

The attention of the SIWG members was drawn to the Scoping Report for the Sustainability Indicators Research Project which was forwarded to Fife as a Pilot authority by the LGMB. It was minuted that "it was considered that this would be an important document in terms of taking the study forward" (FRC, 1994d) however in practice little use was made of the report in the day to day conduct of the pilot.

At the 15th August meeting the 'Community-level' pilot areas were agreed as Benarty, Glenrothes, and the East Neuk. These had been chosen by members of the SIWG, based on identifying 'different types' of communities to involve in the piloting process and on avoiding communities that were already involved in piloting other Fife Regional Council initiatives around that time. At the SIWG meeting there was discussion of who from Fife Regional Council should be appointed to oversee each of the community-level pilot projects (FRC, 1994d).

A press release about the project was issued on 30th August 1994 which was covered by three of the local newspapers (the Courier, the St Andrews Citizen and the Fife Leader). It contained a quote from the Chair of Fife Regional Council's Policy and Resources Committee:

"This project will give local communities the chance to say what they consider to be important for measuring whether their area is becoming more or less sustainable. To be meaningful any indicators used to reflect sustainability must also reflect community values and objectives. Promoting community involvement is therefore fundamental to the indicators project and might also help to make the concept more useful at a local level." (FRC, 1994e)

A Member's Briefing was circulated to Councillors about the Sustainability Indicators Pilot Project for the 1st September Policy and Resources Committee. This covered the background and objectives of the project, Fife Regional Council's role as a pilot authority, and:

"The Need for Wider Involvement:
Sustainability indicators are a new approach to conventional thinking about ways of measuring progress. They address the key themes of environmental responsibility, social equity and economic opportunity. Quality of life is a uniting theme; human health, the environment and the economy are inextricably linked and should be reflected in the choice of indicators a community uses. The state of the environment will determine not only the health and safety of current generations but also future generations. This is an important component of sustainability.

Promoting community involvement is fundamental to any Indicators programme. To be meaningful at a local level, indicators must reflect community values, and objectives. Addressing community concerns and achieving a balanced debate requires the involvement of representatives of different sectors of the community. This collaborative project is about promoting steps towards action.

Fundamental Questions are:
* What would a sustainable Benarty, East Neuk, Glenrothes look like?
* How can we, as a community, measure progress towards that goal?"

(FRC, 1994f)

In the final section on '**Outcomes**' the following statement is made:

"The project is just a starting point for the development of local sustainability indicators. At the end of the 6 month pilot phase Fife Regional council will be asked to report back on the choice of indicators and success in measuring them. Every pilot will have different local circumstances so both positive and negative feedback is welcomed. No league tables will be drawn up. The consultants will then prepare a final report for the LGMB."

(FRC, 1994f)

4.3 The Project Consultant Role in the Fife Sustainability Indicators Pilot

Fife Regional Council had intended to carry out the pilot using existing permanent staff, but once the workload associated with the project became clear it was recognised that more staff time would be needed. In early September the Depute Director, Economic Development and Planning secured a grant from the Scottish Office for additional staffing. Because of the short pilot period and the heavy workload Fife staff were keen to make an appointment once the Scottish Office supplementary funding was secured. My involvement in the Fife pilot came at very short notice by telephone as a result of recommendations by others working on sustainable development. When I was approached I faxed a C.V. and covering letter to confirm my interest, and had an informal interview two days later with staff from the Economic Development and Planning Department on 7th September. I went away with an armful of background paperwork and an agreement to start work on 26th September.

During the interview/discussion I explained that I was undertaking a PhD and that my particular interest was in the relationships between sustainable development, participation and local government. I explained that I hoped that the experience of working with Fife would be useful in gaining a better understanding of these relationships. My research interest appeared to fit with the aspirations of those interviewing me as they needed someone to present a written record of the process of the pilot project. It was also stated that they were interested in getting additional support in the process of engaging communities in the project. My background in community participation issues, as well as my familiarity with indicators was an important factor in my appointment. Another important factor was my previous employment experience, having spent three years working with senior officers in local government. It was commented that

"the LGMB consultants didn't appear to know much about how local government really works" (Terwey, 1994), and particular reference was made to the jargon used by consultants in material supposedly written for elected members and the general public. My previous experience appeared to reassure the group that they were not appointing a complete outsider. This need for reassurance that I was, at least partially, an 'insider' rather than an 'outside consultant' fits with Gummeson's theoretical perspective on the issue of consultant researchers (see Chapter 2).

It was agreed that I would work for Fife for three days per week. I would usually spend two days based in Fife Regional Council's headquarters - Fife House in Glenrothes and a further day working on the project from Stirling University. Although I was titled the 'Project Consultant' I was actually on the Fife Regional Council payroll and had a desk in the Economic Development and Planning Department (ED & PD).

On day four of my contract with Fife, at the first meeting of the Sustainability Indicators Working Group I attended, I was formally assigned the task of producing the Study Report for Fife's Sustainability Indicators Pilot:

> "This will be a technical document which details issues about choosing indicators, data quality and absent data. It will also set out the consultation approach that was used, the feedback this generated and the way in which this was used to evaluate the appropriateness of particular indicators." (FRC, 1994g: 2)

Once I had been assigned this task I made sure I kept copies of all the drafts and redrafts of reports, notes of meetings, committee papers, newspaper cuttings, questionnaire returns and reviews. I also kept a diary of meetings, formal and informal, and actions to result from them, in my ever-present A4 ring bound

notebooks - a habit I had developed since before starting my PhD. This was seen as a routine part of my project recording role.

Having the role as 'the project historian' had considerable benefits in terms of access to written information including historical information predating the Sustainability Indicators Pilot. The LGMB, Fife Regional Council, and the staff I worked closely with in the Department of Economic Development and Planning all placed considerable emphasis on written records. My role in producing the Study Report and the large contribution I made to the Sustainability Indicators for Fife report also made this a central feature of my work. The decision to produce a Fife-wide indicators report and to conduct community pilots in three targeting areas within Fife effectively doubled the workload of the project and required two parallel processes to be conducted during the pilot period. The focus of work between the Fife-wide report and the community pilots ebbed and flowed during the pilot period with one or other being the predominant focus of the attention of the Sustainability Indicators Working Group.

The development of the 'Sustainability Indicators for Fife' report was not a neat linear process which could just follow the menus and check list generated by the LGMB project. At various stages the members of the Indicators Working Group wrestled with the what the ideas behind sustainability actually meant in practice, how these related to current lifestyles and expectations, how to develop a global focus without imposing ideas top-down, and the constraints on action within local government in the midst of a major reorganisation exercise.

The revision of the selection of indicators to be presented in the final draft of the Sustainability Indicators for Fife Report continued right up to the last possible moment, with new indicators being selected and written in the final hours of the pilot period. This made it difficult to incorporate all the possible inter-linkages

between the indicators in the final document. It also meant that the Study Report on the Project process became a struggle to document an ever changing picture. A complete Final Draft of the Sustainability Indicators for Fife was not available for scrutiny before the Study Report had to be concluded.

The development of both the preparation of the Sustainability Indicators for Fife Report and the conduct of the three community pilots was overseen by the Sustainability Indicators Working Group and both were seen as integral to the pilot process. However, in this chapter, as in the Study Report, the two process will be covered separately for reasons of clarity. This material gives a chronological overview of the unfolding process of the Fife Sustainability Indicators Project.

4.4 The Sustainability Indicators for Fife Report

4.4.1 The Format of the Sustainability Indicators for Fife report

The format of the report was agreed at the 10th October SIWG meeting:

> "There will be one page of explanatory text plus a diagram for each indicator. The importance of producing a clear and easily understandable document for public reference was emphasised." (FRC, 1994g)

The format was based on the "Sustainable Seattle" report (example page given as Figure 4.2), a document that heavily influenced the LGMB Sustainability Indicators Research Project and through that the pilot local authorities that took part in the project. Although not stated explicitly in the meeting, it was implicit in the choice of the Sustainable Seattle format that an attempt would be made to identify a trend "Towards sustainability" or "Away from Sustainability" for each of the indicators (See Figure 4.3 Sustainable Seattle Summary of Trends).

Guidance was given at the 10th October meeting that:

> "The focus (of the report) will be on quality of life". (FRC, 1994g)

Environment

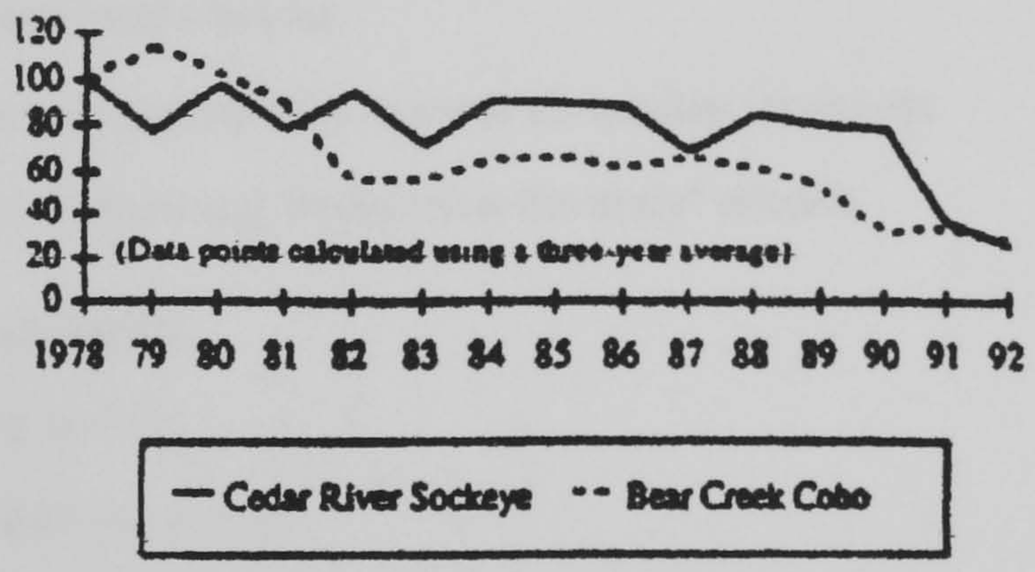
Wild Salmon
returning to spawn

DESCRIPTION | Salmon and humans have a long history in Puget Sound. Native Americans have always revered the salmon as a link to the planet and as a source of food. Salmon have fed and astonished visitors and immigrants since the first Europeans arrived, and they continue to be an important economic resource as well as an environmental indicator to Northwesterners of many different origins.

Wild salmon (as opposed to hatchery-raised salmon) are totally dependent on the health of the freshwater environment for reproduction. They need clean water and a passable stream. Native salmon are specifically adapted to the natural characteristics of their local environment: their eggs, for example, are adapted to specific gravel size and water chemistry. Changes in water chemistry, bottom conditions, and local plants and animals -- such as those that accompany development -- usually result in a reduced number of fish surviving. Decreased genetic diversity caused by the loss of a salmon stock in one stream can affect the viability of stocks in adjacent habitats. The health of wild salmon populations is thus an indicator of overall environmental health in a watershed.

DEFINITION | There are no surviving salmon spawning streams in the City of Seattle. Salmon from King County's Cedar River and Bear Creek salmon were chosen as representative examples for this area. Data were collected by Washington State Department of Fisheries and reported in the Washington State 1992 Salmon and Steelhead Stock Inventory (SASSI), conducted by the Departments of Fisheries and Wildlife in conjunction with the Western Washington Treaty Indian Tribes. Estimates based on escapement counts are smoothed out using a three-year rolling average. No attempt has been made to estimate past extinctions.

Wild Salmon Escapement
(as a percentage of 1978 counts)



INTERPRETATION | There is a clear trend toward reduced wild salmon survival, reflecting a state-wide pattern. Of the seventy-one salmon runs in the North Puget Sound area, twelve have been classified as "depressed," the Cedar River Sockeye and Lake Washington Coho salmon among them. Four are "critical" -- heading toward the threshold below which a salmon stock can no longer sustain itself. And even healthy stocks are also trending toward lower returns.

EVALUATION | The sharp downward trend in the health of local salmon runs marks a significant trend away from sustainability. Many local salmon runs have been extinct for decades, and we are in danger of losing many more if we do not take swift and effective action to preserve the integrity of freshwater habitat.

LINKAGES | The health of salmon runs is linked to the economy as well as the environment: tourism, recreation, and food production area all affected. The 1992 SASSI notes that "... activities impacting wild salmonid habitat and survival (e.g. urban and industrial growth, forest practices, agricultural practices, municipal, industrial, and agricultural diversions, and hydropower) have reduced Washington's salmon ... and continue to do so." Runoff from streets carries oil-based

Sustainable Seattle DRAFT 5

Figure 4.2 Example Indicator Sheet: Sustainable Seattle (Sustainable Seattle, 1993)

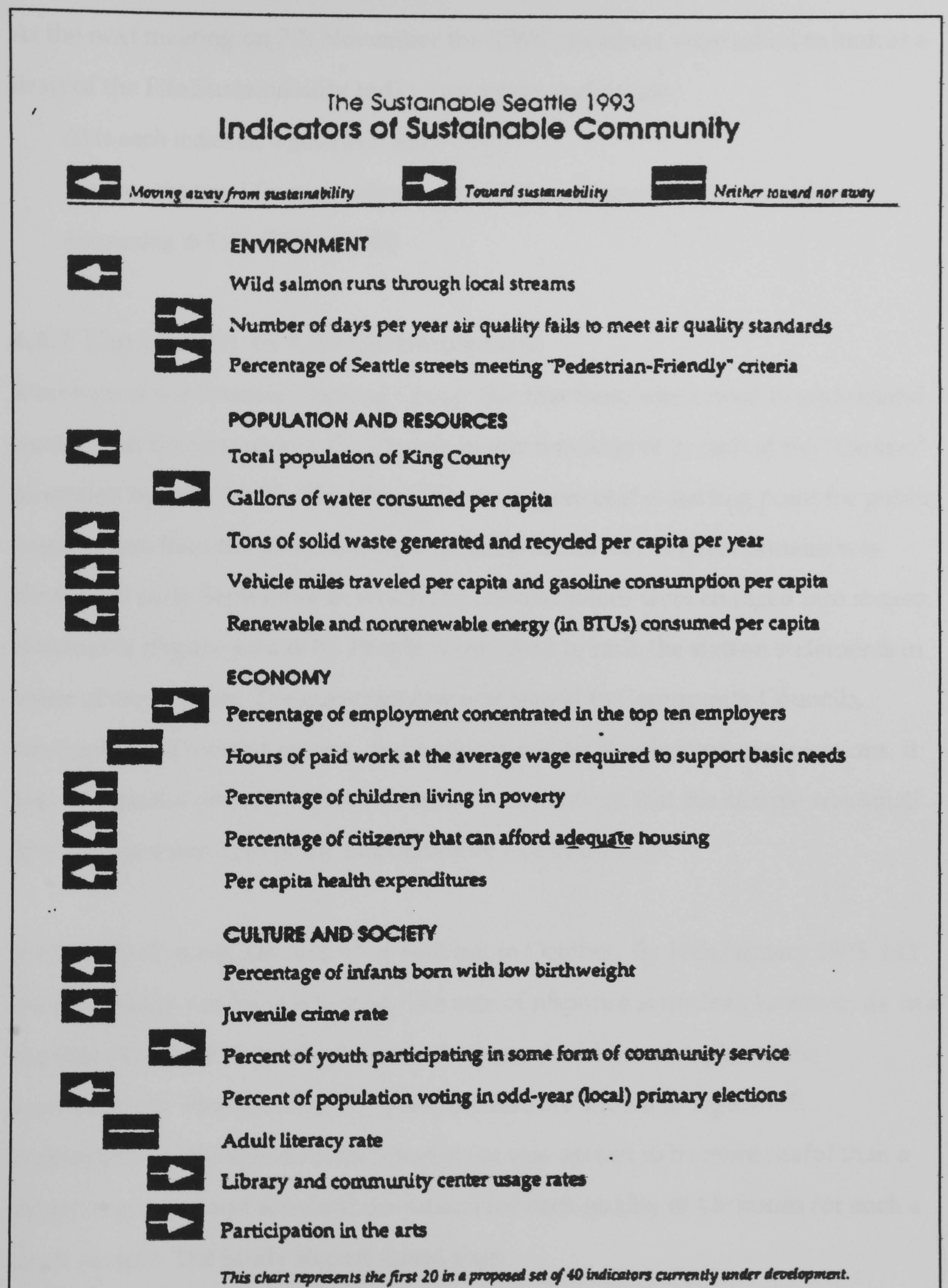


Figure 4.3 Sustainable Seattle Summary of Trends
(Sustainable Seattle, 1993)

At the next meeting on 7th November the SIWG members were asked to look at a draft of the Fife Sustainability Indicators report and decide:

(i) is each indicator a good indicator?

(ii) does the trend for each indicator fit with their subjective view of what is happening in Fife. (FRC, 1994i)

4.4.2 The Quality of Life Questionnaire

Members of the Internal Working Group felt that there was a need to understand more about the importance that people in Fife would give to each of the "themes" identified by the LGMB. This was felt to be a more useful starting point for public consultation than the presentation of detailed indicators. A questionnaire was devised in early September in which the LGMB themes were changed into sixteen statements (Figure 4.4 a & b). People were asked to rank the sixteen statements in order of importance. The questionnaire was issued to Community Councils, environmental interest groups, and national and local voluntary organisations. It was recognised when the questionnaires were sent out that the sample was small and not representative of the population of Fife as a whole.

A total of 161 questionnaires were sent out in October. By 10th January 1995 142 questionnaires had been returned. The rate of response is unclear, however, as in a number of cases interested groups had returned additional copies of the questionnaire. The results of the questionnaire are shown in Figure 4.5.

Presentation of the results in bar chart form was agreed to be more useful than a presenting mean and standard deviations for each quality of life issues for such a small sample. The Study Report stated that:

> "The results of the questionnaire were used to ensure that the report covered issues felt to be of particular importance in Fife. For example additional work was put into the development of Basic Needs indicators as this theme was given the highest priority in the questionnaire returns." (FRC, 1995b: 13)

Figure 4.4a Quality of Life Questionnaire page 1

YOUR VIEWS ARE WANTED

This questionnaire is intended to help us find out what you think about quality of life in your area.

Listed below are sixteen statements about quality of life. Please can you identify which you think are most important in your area.

Please prioritise their importance by:

Marking a letter A next to the four that are most important to you,
then marking B next to the four of next greatest importance,
then marking C next to the four of next greatest importance,
then marking D next to the four of least importance to you.

If you do not have time to make a decision about all sixteen statements, please just decide on the four that are most important to you and return the form.

	Mark an A, B, C or D in each box
1. Waste is kept to a minimum.	☐
2. Damage to the environment by pollution is kept to a minimum.	☐
3. Local nature is protected and enhanced.	☐
4. Where possible, local needs are met locally.	☐
5. Food, water, housing and fuel are available to everyone at an affordable price.	☐
6. Everyone has access to satisfying work with fair pay.	☐
7. Voluntary work and unpaid work is recognised as a valuable contribution to maintaining communities.	☐
8. Health is protected by a clean safe environment.	☐
9. Everyone has access to health care that promotes health and cares for the sick.	☐
10. Access to shops, schools, health and leisure facilities is not dependent on car ownership.	☐
11. People are free from the fear of crime and persecution.	☐
12. Everyone has access to education, skills, training, and information.	☐
13. Everyone can take an active part in decision making about issues that affect them.	☐
14. Everyone has access to opportunities for leisure, recreation and culture.	☐
15. Towns and villages are pleasant to live and work in.	☐
16. Everyone has the opportunity to spend time with family and friends.	☐

Figure 4.4b Quality of Life Questionnaire page 2

These are suggested statements about quality of life. If you have others you think are important please list them below and prioritise as before.

If you have any other comments about the quality of life in Fife please add them below.

I would like/not like more information on the sustainability indicators project.

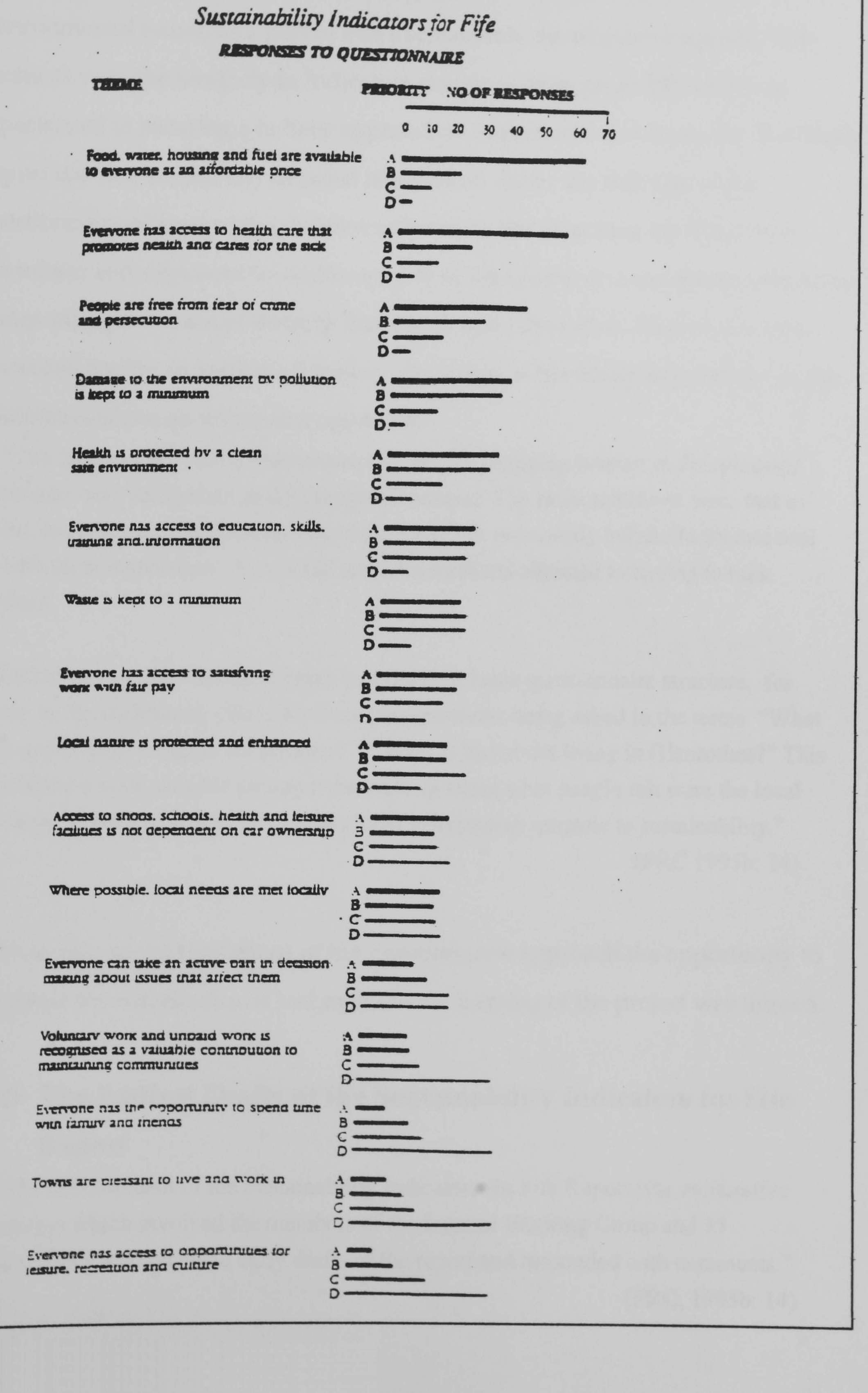
Name: .....

Organisation: .....

.....

Thank you for your co-operation
Please return the completed form in the prepaid envelope provided.

Figure 4.5 Quality of Life Questionnaire results



This statement downplays the way in which the returns from the quality of life questionnaire were used to affirm the importance of social issues, as well as environmental issues, as a part of Fife's sustainable development agenda. This contrasts with the Strathclyde Indicators exercise where great difficulty was experienced in securing a holistic approach to sustainable development. The Study Report did not contain any detailed analyses of either the findings of the questionnaire returns or the differences between the responses by 'Fife-wide' consultees and responses to similar quality of life questionnaires issued within the community pilot areas of Benarty, East Neuk and Glenrothes. This omission is discussed further in section 4.5 below. The focus in the Study Report was on the limitations of the questionnaire approach:

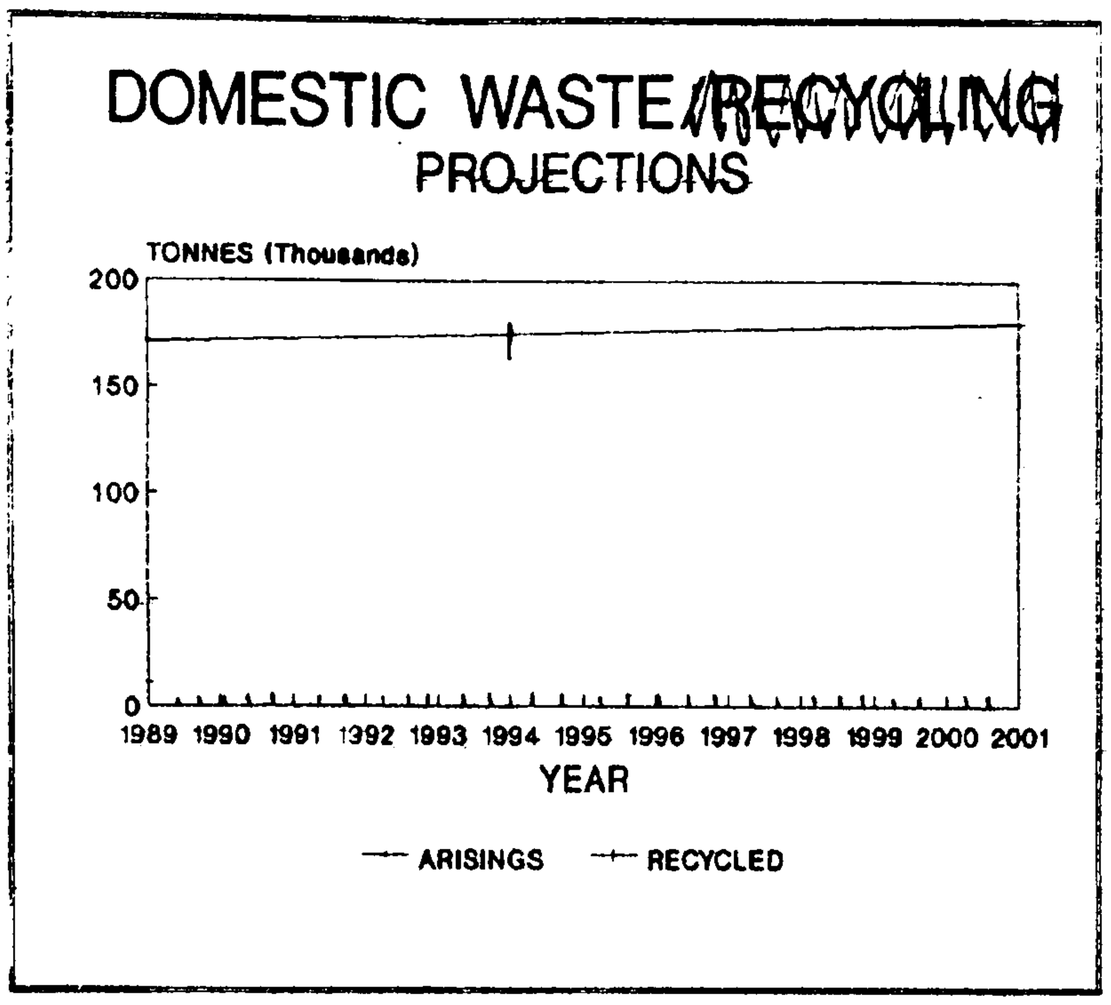
> "The limitations of the questionnaire as a way of engaging interest in the indicator project were recognised as the project developed. The main criticisms were that as the issues are clearly strongly inter linked it is not necessarily helpful to try and deal with them in isolation. As a result some respondents objected to having to rank them.
>
> Different variants were developed, based on the basic questionnaire structure, for use in the community pilots, for examples questions being asked in the terms "What is good about living in Glenrothes?", "What is bad about living in Glenrothes?" This enabled a more detailed picture to be built up about what people felt were the local issues. However, it missed out the global perspective intrinsic to sustainability."
>
> (FRC 1995b: 14)

In focussing on the limitations of the questionnaire approach the opportunity to recognise the contribution it had made to the framing of the project was missed.

4.4.3 The Earliest Drafts of the Sustainability Indicators for Fife Report

> "The development of the Sustainability Indicators for Fife Report was an iterative process which involved the members of the Internal Working Group and 35 consultees who received early drafts of the report and responded with comments."
>
> (FRC, 1995b: 14)

Figure 4.6a Initial Indicator Sheet for Domestic Waste presented to 7th Nov. SIWG page 1 (FRC, 1994 k)



HOUSEHOLD WASTE PRODUCTION

Tonnes Per Capita Per Annum

DESCRIPTION

The aim for a sustainable economy must be to keep the amount of waste that cannot be recycled or reused to a minimum, as waste ~~created~~ which cannot be treated in this way has to be buried or incinerated. Recycling and re-use is more efficient because materials are used over and over again rather than "used up". Total waste "arisings" are defined as "controlled" and "uncontrolled". Uncontrolled wastes include mine or quarry waste, agricultural ~~waste~~, explosive ~~waste~~ and radioactive waste. Controlled wastes include those arising from households, commercial uses, and industry, including "special" wastes such as asbestos, some chemicals, and clinical wastes. Controlled wastes are buried in landfill sites or are broken down to be incinerated, recycled or re-used (eg. some construction refuse). The collection and disposal of controlled wastes are the responsibility of the Environmental Health divisions of the District Councils. Household wastes account for 11% of all wastes generated in Fife in a year.

BACKGROUND

Waste generation in Fife is increasing, mainly because of population growth and an increase in the amount of waste which each person generates. This is also influenced by methods of packaging goods, the amount of material being sent by mail and other commercial operations. Waste recycling is being actively promoted but the quantities involved do not off-set the overall rise in waste generation. Although the amount of waste recycled in Fife has increased by 54% since 1988 it still accounts for less than 0.2% of the total waste volume. As a result the availability of facilities to dispose of waste by burial, in particular, is a major issue.

ANALYSIS

Total household waste produced in Fife is of the order 1.4 million tonnes (1989) of which 96% occurs in Dunfermline and Kirkcaldy Districts, and only 4% in the predominantly rural North East Fife District. Only limited information is available on trends but household waste in Fife as a whole is forecast to increase by 3.5% to 2001 largely as a result of population increase. This suggests that the general trend on this indicator is away from sustainability.

LINKAGES

The volume of waste being produced is an important issue because of the long-term problem of disposal. Landfill by waste can be a source of contamination to soil and groundwater and can also affect human health and wildlife. Landfill can also produce

Figure 4.6b Initial Indicator Sheet for Domestic Waste presented to 7th Nov. SIWG page 2 (FRC, 1994 k)

methane gas which contributes to air pollution and to large-scale climatic changes, such as global warming. The consumption of energy resulting from packaging, and from items of household equipment which are thrown away is also significant. Recycling continues to be a major environmental issue.

DATA AND INFORMATION SOURCES

Scottish Abstract of Statistics
District Councils (Environmental Health)

The earliest drafts of the report presented a sheet for each indicator containing a graphic and a commentary which included a description of the issue, an evaluation of whether the trend was towards or away from sustainability, an analysis of the indicator chosen and linkages with other issues and other indicators in the report (FRC, 1994 k). An example indicator sheet for Household Waste is shown as Figure 4.6 a & b.

At the 7th November Internal Working Group. The appraisal of the earliest draft of the report covered:

(a) the usefulness of particular indicators

(b) the presentation of the report.

Longer time series were sought for a number of the indicators, although it was argued that limited data were available in a comparable form for several of the indicators. It was agreed that where there are limitations in the data available this should be identified in a comments box on the indicator. (FRC, 1994i)

Detailed revisions were identified for many of the indicators. Substantive changes at this stage were:

- To collect figures for total waste, not just household waste
- To collect data on food production and consumption.

- To collect local (community pilot) data on cervical cancer screening, smoking and alcohol consumption.
- To include access to services, to supplement investment in public transport and road traffic accident indicators. (FRC, 1994i)

4.4.4 The First Public Consultation Draft of the Report

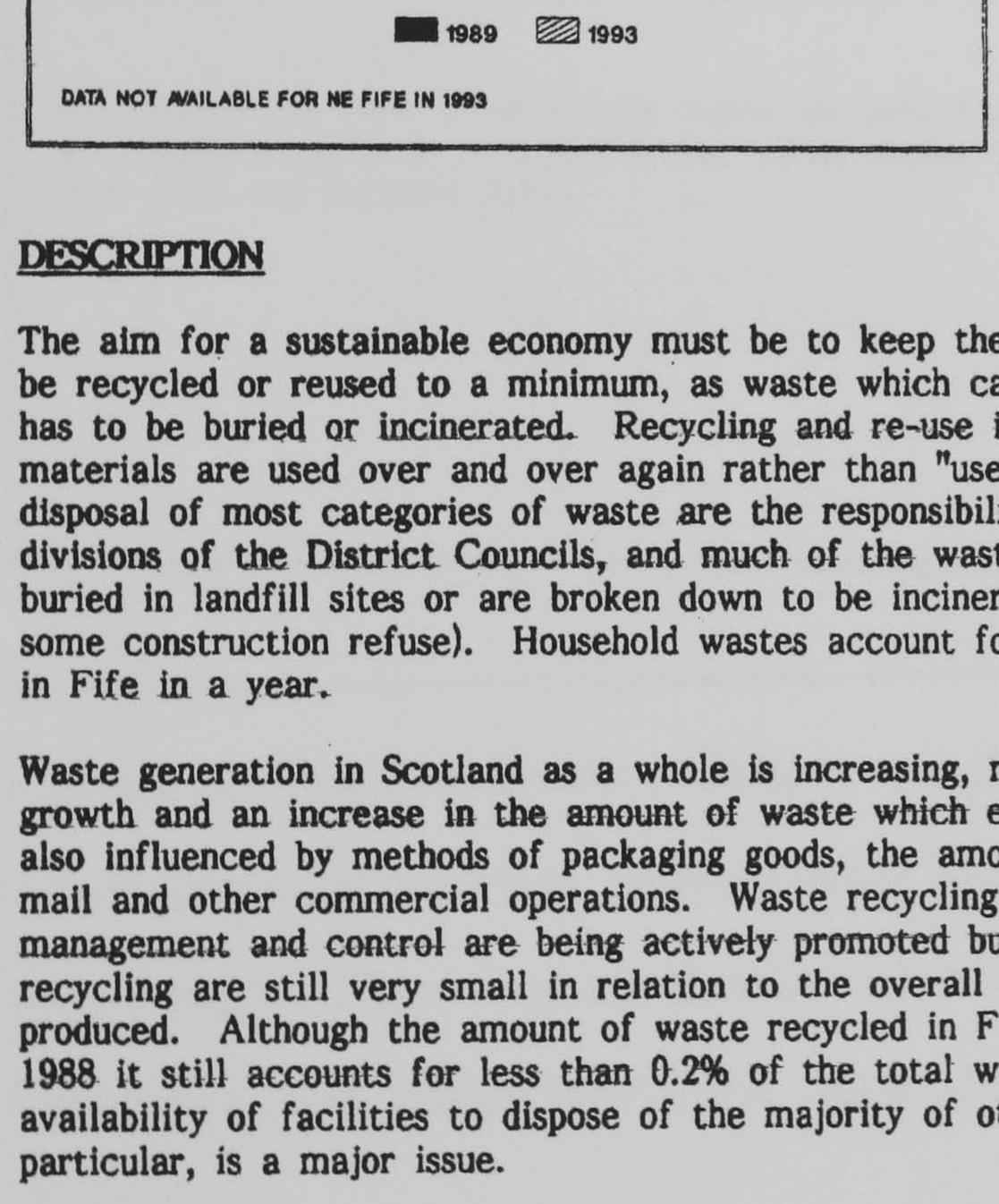
The first 'official' draft of the Fife-wide report was issued for consultation in mid-November 1994 (FRC, 1994 l). An example indicator sheet for Household Waste is shown as Figure 4.7a & b. It was sent to those people who had returned the quality of life questionnaire and had asked to be sent further information about the project. Although six written responses were received to this draft of the report, most responses were received after the second draft report had been completed. These responses were looked at by members of the SIWG informally and outside working group meetings. The Study Report contained a brief summary of extracts from consultee responses over the course of the pilot plus a sample of 4 complete consultee responses. The summary consisted of short quotes from consultees and some numerical analysis of the proportion of consultees who had expressed a view of satisfaction/disstaisfaction with different apsects of the report. The Study Report did not discuss in any detail the impact that unofficial consultees had on the development of the Sustainability Indicators for Fife Report.

At the SIWG meeting on 28th November 1994 the indicators in the draft of the report that was circulated for public consultation was reviewed. A number of changes were agreed to the presentation of the report. New indicators covering the following issues were sought:

- Homelessness - (to replace vacant public sector housing;)
- Age and destination of school leavers;
- Adult participation in continuing education;
- Energy production and consumption. (FRC, 1994j)

Figure 4.7a Indicator Sheet for Household Waste included in the First Public Consultation Draft page 1(FRC, 1994 l)

RESOURCES



HOUSEHOLD WASTE PRODUCTION

Tonnes Per Person Per Annum

DESCRIPTION

The aim for a sustainable economy must be to keep the amount of waste that cannot be recycled or reused to a minimum, as waste which cannot be treated in this way has to be buried or incinerated. Recycling and re-use is more efficient because materials are used over and over again rather than "used up". The collection and disposal of most categories of waste are the responsibility of the Environmental Health divisions of the District Councils, and much of the wastes arising in this way are buried in landfill sites or are broken down to be incinerated, recycled or re-used (eg. some construction refuse). Household wastes account for 12% of all wastes generated in Fife in a year.

Waste generation in Scotland as a whole is increasing, mainly because of population growth and an increase in the amount of waste which each person generates. This is also influenced by methods of packaging goods, the amount of material being sent by mail and other commercial operations. Waste recycling and other methods of management and control are being actively promoted but the quantities involved in recycling are still very small in relation to the overall volume of waste which is produced. Although the amount of waste recycled in Fife has increased by 54% since 1988 it still accounts for less than 0.2% of the total waste volume. As a result the availability of facilities to dispose of the majority of other wastes by burial, in particular, is a major issue.

ANALYSIS

Total household waste produced in Fife is of the order 1.4 million tonnes (1989) of which 96% occurs in Dunfermline and Kirkcaldy Districts, and only 4% in the predominantly rural North East Fife District. Only limited information is available on trends but indications are that this figure may have fallen by up to 25% by 1992/3 for a variety of reasons, despite a tendency for household waste in Fife as a whole to increase (by an estimated 3.5% to 2001) as a result of population increase.

In terms of tonnes per person per annum of household waste, the figure for Fife has fallen from 0.51 to 0.49 between 1989 and 1992/3.

EVALUATION

The general trend on this indicator appears to be towards sustainability.

Figure 4.7b Indicator Sheet for Household Waste included in the First Public Consultation Draft page 2 (FRC, 1994 l)

LINKAGES

The volume of waste being produced is an important issue because of the long-term problem of disposal. Landfill by waste can be a source of contamination to soil and groundwater and can also affect human health and wildlife. Landfill can also produce methane gas which contributes to air pollution and to large-scale climatic changes, such as global warming. The consumption of energy resulting from packaging, and from items of household equipment which are thrown away is also significant. Recycling continues to be a major environmental issue.

DATA AND INFORMATION SOURCES

Scottish Abstract of Statistics
District Councils (Environmental Health)

COMMENTS

In practice it has been found to be very difficult to obtain accurate and up to date information on this indicator even at a District level. Changes in the regulations and in definitions have also to be taken into account.

On balance the ratio of household waste per person per year appears to be an effective indicator of performance, which allows comparisons to be made over time and between areas.

The indicator on Tree Preservation Orders was dropped as it was not felt to be a helpful sustainability measure. Several other indicators were revised and longer time series sought. There was another intermediate draft of the report produced in early December 1994 which contained some of the revisions sought by the SIWG.

4.4.5 The Second Public Consultation Draft of the Report

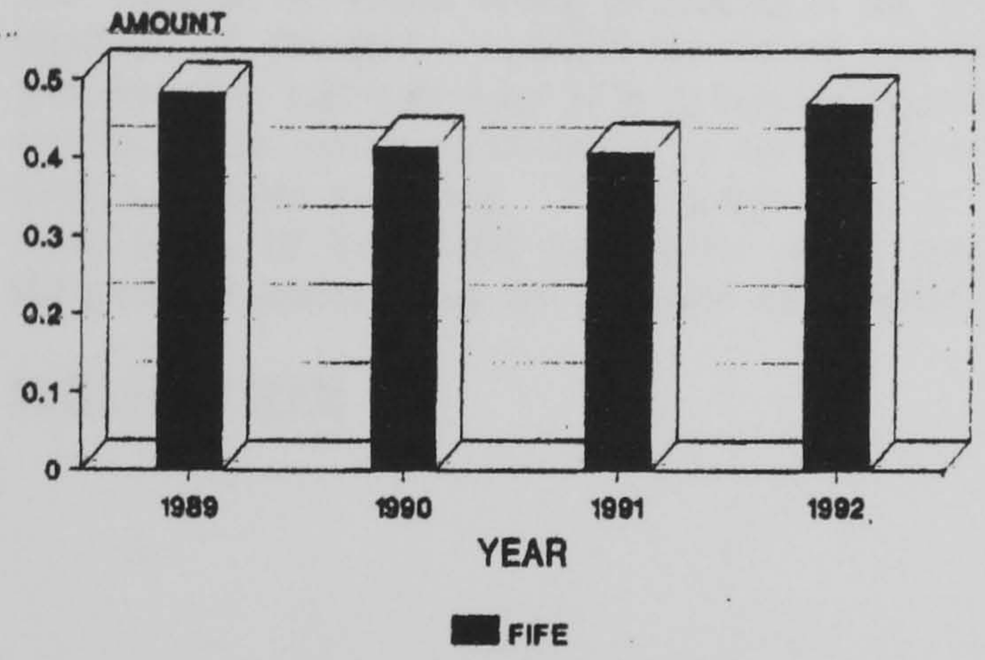
The 'Second Draft Report' Measuring the Quality of Life and the Quality of the Environment in Fife was issued on 23rd December 1994 (FRC,1994 m).

The second draft report moved away from a structure based on the 16 themes used in the quality of life questionnaire. The indicators were grouped under four headings to make the report easier to read. These were Basic Needs, Community,

Figure 4.8a Indicator Sheet for Household Waste included in the Second Public Consultation Draft page 1 (FRC,1994 m).

RESOURCES

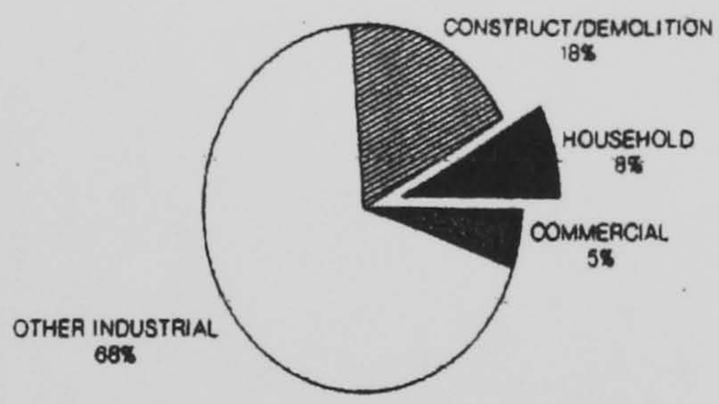
HOUSEHOLD WASTE ARISINGS
TONNES/PERSON/YEAR



HOUSEHOLD WASTE PRODUCTION

Tonnes Per Person Per Annum

CONTROLLED WASTE ARISINGS
1992



Average levels of household waste in Fife may be falling, but it forms only a small proportion of total wastes, and only a tiny proportion of it is recycled.

DESCRIPTION

The aim for a sustainable economy must be to keep the amount of waste that cannot be recycled or re-used to a minimum, as waste which cannot be treated in this way has to be buried or incinerated. Recycling and re-use is more efficient because materials are used over and over again rather than "used up". The collection and disposal of most categories of waste are the responsibility of the Environmental Health divisions of the District Councils, and much of the wastes arising in this way are buried in landfill sites or are broken down to be incinerated, recycled or re-used (eg. some construction refuse). Household wastes account for 8% of all wastes generated in Fife in a year.

Waste generation in Scotland as a whole is increasing, mainly because of population growth and an increase in the amount of waste which each person generates. This is also influenced by methods of packaging goods, the amount of material being sent by mail and other commercial operations. Waste recycling and other methods of management and control are being actively promoted but the quantities involved in recycling are still very small in relation to the overall volume of waste which is produced. Although the amount of waste recycled in Fife has increased by 54% since 1988 it still accounts for less than 0.2% of the total waste volume. As a result the availability of facilities to dispose of the majority of other wastes by burial, in particular, is a major issue.

ANALYSIS

Total household waste produced in Fife is of the order 1.4 million tonnes (1989) of which 96% occurs in Dunfermline and Kirkcaldy Districts, and only 4% in the predominantly rural North East Fife District. Only limited information is available on trends but indications are that this figure may have fallen by up to 25% by 1992/3 for a variety of reasons, despite a tendency for household waste in Fife as a whole to increase (by an estimated 3.5% to 2001) as a result of population increase.

In terms of tonnes per person per annum of household waste, the figure for Fife has fallen from 0.51 to 0.49 between 1989 and 1992.3.

Figure 4.8b Indicator Sheet for Household Waste included in the Second Public Consultation Draft page 2 (FRC,1994 m).

EVALUATION

Although average levels of household waste generation are falling levels of recycling are very low. There is no conclusive evidence that the trend on this indicator is towards or away from sustainability.

LINKAGES

The volume of waste being produced is an important issue because of the long-term problem of disposal. Landfill by waste can be a source of contamination to soil and groundwater and can also affect human health and wildlife. Landfill can also produce methane gas which contributes to air pollution and to large-scale climatic changes, such as global warming. The consumption of energy resulting from packaging, and from items of household equipment which are thrown away is also significant. Recycling continues to be a major environmental issue.

FUTURE STEPS

DATA AND INFORMATION SOURCES

Scottish Abstract of Statistics
District Councils (Environmental Health)

COMMENTS

In practice it has been found to be very difficult to obtain accurate and up to date information on this indicator even at a District level. Changes in the regulations and in definitions have also to be taken into account.

On balance the ratio of household waste per person per year appears to be an effective indicator of performance, which allows comparisons to be made over time and between areas.

Figure 4.9a Example Questionnaire: Sent Out With The Second Public Consulatation Draft to Encourage Consultees to Respond page 1

SUSTAINABILITY INDICATORS

Thank you for taking the time to read the draft Report on the Sustainable Indicators. It would be greatly appreciated if you would now complete and return this short questionnaire.

Do you think the Report's Introduction explains the project satisfactorily? (Yes)/~~No~~

If not, how could it be improved? _____

_____

Are there any parts of the Report that you have difficulty understanding? (Yes)/~~No~~

If so, what are they and how can they be improved? Lots of the sections are extremely complicated and my first comment when I finished reading was "what was that all about" (Having forgotten the introductic by then).

Indicators

Your comments on each indicator would be welcomed.

Indicator	Is this a useful indicator?	Is this the best way to measure this indicator?	Does the trend towards or away from sustainability shown by this indicator reflect your view of what is happening?
Food, Water etc.	Yes/No	Yes/No	Yes/No
Homelessness	(Yes)/No	Yes/No Don't know.	Yes/No Don't have a view on this.
Average weekly earnings	Yes/(No)	Yes/No	Yes/No Needs to be linked to prices etc.
Income support Long Term unemp.	Yes Yes	Yes. Yes	Yes. Yes.
Shared Cycle Routes	Yes/(No)	Yes/No	Yes/No Cycling is a good indicator but miles of route is not what needs to be measured. ✓
Access for people with disabilities	(Yes)/No	Yes/(No)	Yes/No Most places becoming more aware of helping folk with disabilities. ✓
Infant Mortality	(Yes)/No	(Yes)/No	Yes/No Don't know anything about this.

Figure 4.9b Example Questionnaire: Sent Out With The Second Public Consulatation Draft to Encourage Consultees to Respond page 2

Indicator	Is this a useful indicator?	Is this the best way to measure this indicator?	Does the trend towards or away from sustainability shown by this indicator reflect your view of what is happening?
Screening for Cervical Cancer	(Yes)/No	(Yes)/No	Yes/No Don't know anything about trends in this.
Road Traffic Accidents	(Yes)/No	(Yes)/No	(Yes)/No
Reported Cases/ Selected Crimes	(Yes)/No	(Yes)/No	(Yes)/No
Nursery/Preschool education	Yes/No Don't know. Might be better to use truancy figures from schools - are kids enjoying school and/or seeing the benefit of it.	Yes/No	Yes/No ✓ from primary + secondary
Library Membership	(Yes)/No	(Yes)/No	(Yes)/No
Voluntary Organisations	(Yes)/No	Yes/No/Don't know ✓ Maybe need to take no of members into account.	Yes (No) More + more difficult ✓ get people involved with voluntary organisations.
Voting in local elections	(Yes)/No	(Yes)/No	(Yes)/No
Derelict and Contaminated Land	Yes (No) - Just contaminated land. Derelict land can be "nice". and useful.	Yes/No	Yes/No
Semi-Natural Habitats	(Yes)/No	(Yes) No ✓ Need to measure rate of deterioration/improvement of SSSI's etc.	(Yes)/No
Open land lost to Development	(Yes)/No	(Yes)/No	(Yes)/No
River Quality	(Yes)/No	(Yes)/No	(Yes)/No
Quality of Local Water Supply	(Yes)/No But maybe need a cost/head indicator as well.	Yes/No Don't know.	Yes/No Water quality has always seemed fine to me.
Food Supply	(Yes)/No	Yes/No	(Yes)/No
✓ Household Waste	Yes (No) Should be some measure of total waste production + closely linked to ✓ measure of % recycled.	Yes/No	Yes/No
✓ Sewage Treatment	(Yes)/No	(Yes)/No	Yes (No) I feel treatment of sewage is improving, especially all the work on reed beds.

2

Figure 4.9c Example Questionnaire: Sent Out With The Second Public Consulatation Draft to Encourage Consultees to Respond page 3

Where you have answered "no" to any of the above it would be helpful if you could give your reasons why below. If necessary please attach additional sheets.

Sorry - see comments all over questionaire.
Sustainability is such a straight forward, easy concept on a global scale. Why on earth is it so difficult to measure?
It's Christmas eve + this has given me a headache.
Good luck with sorting it out. Language in the report is a problem - shorten ~~sentences~~ sentences and treat us all like idiots.

Alison I.

(PILTAIN SOCIETY)

Figure 4.9d Example Questionnaire: Sent Out With The Second Public Consulatation Draft to Encourage Consultees to Respond page 4

Do you have any suggestions for other indicators. It should be noted that it may not always be practical to develop all ideas due to information constraints.

Number of people staying within e.g. 5 miles, of work,
Number of people who walk in the countryside (or anywhere).

Do you have any other comments or suggestions to make about the Report?

The first chart on inside front cover should be somewhere else, as it doesn't make sense until you've read the report.

Thank you for completing this form. Please return it FREEPOST,

by Monday 16th January 1995, to the

Director of Economic Development and Planning

Fife Regional Council

Fife House, North Street

GLENROTHES, Fife, KY7 6EA

Quality of Life and Use of Resources. The introduction to the report was redrafted to include more emphasis on the action arising from the indicators project, more emphasis on the role of the community, and the inclusion of a section on links with other FRC work on sustainability. An example indicator sheet for Household Waste is shown as Figure 4.8 a&b.

A questionnaire (FRC 1994o) was sent out with the Second Draft Report in the hope of generating more structured feedback on:

- Whether the report's introduction explained the project satisfactorily;
- Whether there were any parts of the report the consultee had difficulty understanding.

In addition for each indicator the following questions were asked:

(a) Is this a useful indicator?

(b) Is this the best way to measure this indicator?

(c) Does the trend towards or away from sustainability shown by this indicator reflect your view of what is happening?

Where consultees answered 'no' to any of the questions they were asked to comment on their reasons for doing so. An example questionnaire response is given as Figure 4.9a-d.

An article about the project was published in the Region's news-sheet which is distributed to all households. The article included a reply slip and 50 requests for information were received. All those who have sought further information about the project were sent the second consultation draft of the Fife-wide indicators report and asked for their views prior to the preparation of a final draft of the Fife-wide sustainability indicators report.

By the 20th January 1995, six responses had been received to the first draft of the

the second draft appears to have encouraged people to respond. However, the short time scale for reply, and the fact that further revisions had already been made to the document by the Sustainability Indicators Working Group during the consultation period reduced the usefulness of the consultation exercise.

Table 4.3: The responses to the questionnaire sent out with the second public consultation draft of the Sustainability Indicators for Fife report

	(a) USEFUL		(b) BEST WAY TO MEASURE		(c) DIRECTION OF TREND	
	YES	NO	YES	NO	YES	NO
Food etc	16	2	16	5	9	6
Homelessness	16	3	11	6	14	3
Average earnings	17	2	16	2	17	1
Benefits Unemployment	} Not on questionnaire					
Cycling	17	4	13	7	13	7
Access for people with disabilities	15	4	14	4	15	3
Infant mortality	17	1	16	1	16	1
Cervical cancer screening	17	0	16	0	15	1
Road Traffic Accidents	15	1	13	3	12	6
Crime	16	2	14	3	13	5
Nursery Education	18	1	16	2	16	1
Library Membership	15	3	16	1	14	2
Voluntary Organisations	16	3	13	4	12	5

Voting in local elections	14	4	13	2	14	2
Derelict and contaminated land	18	1	16	2	14	4
Semi-natural habitats	18	1	16	2	14	4
Open land	17	2	15	3	16	3
River quality	19	0	17	1	14	5
Quality of water supply	19	0	15	3	13	4
Food	17	0	13	2	14	2
Household waste	16	2	14	3	12	4
Sewage	17	1	14	3	12	4

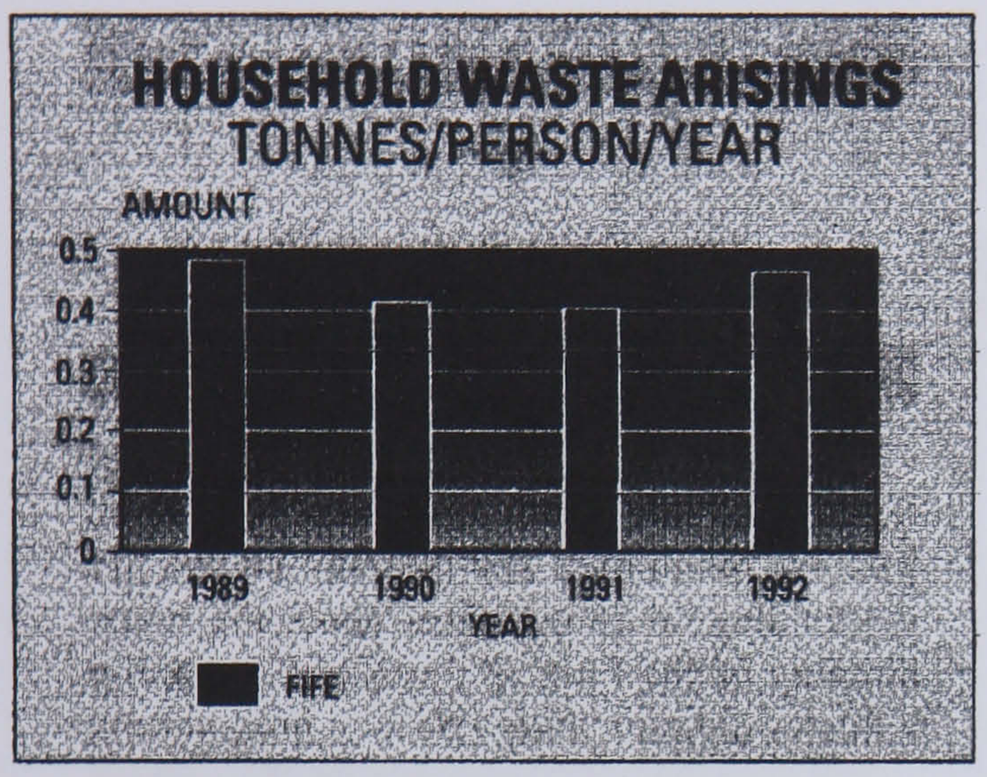
Table 4.3 was included in the Study Report to summarise the responses given by consultees to the questions about each indicator. However, there was not a strong relationship between the feedback given in the questionnaire and the written comments made. For this reason both the comments and questionnaire responses were taken into account in revising the indicators for the final draft of the Fife-wide report. In general the most critical comments had the greatest impact on the redrafting of the report, particularly the comments on the need for a more global perspective.

4.4.6 The Final Draft of the Sustainability Indicators for Fife Report

Discussion at the Internal Working Group meeting on 23rd January focused on the need for the report to have a more global perspective, and for each indicator to be more explicitly measured against the four principles of sustainability, and for clearer guidance for future action to be included for each indicator. A revised format for the presentation of the indicators was tabled and this was further revised by the Working Group.

Figure 4.10a Indicator Sheet for Household Waste included in the Final Sustainability indicators for Fife Report page 1 (FRC,1995a).

Use of Resources



HOUSEHOLD WASTE

Household waste generated per person per year in metric tonnes.

BACKGROUND

The amount of household waste being created in Scotland is increasing. This increase is mainly due to increases in consumption, and in the use of packaging of, for example, processed foods. Most household waste is dumped in landfill sites as this is cheaper in cash terms than recycling materials. Currently less than 4% of household waste in Scotland is recycled.

SUSTAINABILITY ISSUES

Reducing the amount of waste that is produced by cutting down on the consumption of non-renewable resources, is essential, yet changes in retailing practice with an increase in larger shops has been accompanied by a decline in the re-use of materials such as returnable glass bottles, which are being replaced by plastic bottles and aluminium cans.

"Unsustainable patterns of production and consumption are increasing the quantities and variety of environmentally persistent wastes at unprecedented rates.. A preventative waste management approach focused on changes in lifestyles and in production and consumption patterns offers the best chance for reversing current trends". (Agenda 21).

The UK Government has set a target that 25% of all household waste should be recycled by the year 2000. As well as reducing the demand for natural resources and reducing the amount of harmful materials which are being put back into the environment, recycling also creates jobs. However no targets have been set by the government for the re-use of recycled materials which would create the demand which would make the economics of recycling more attractive.

Current waste disposal methods are inadequate for the types of wastes involved. Landfill sites can be a source of contamination to soils and ground water and can affect the health of people and animals. They also produce methane which increases global warming.

ANALYSIS OF THE INDICATOR

From the available data it is difficult to identify a trend in the amount of household waste that is being dealt with by the District Councils per person per year. The level in 1992 (0.49 tonnes), was fractionally lower than in 1989 (0.51 tonnes), but in the intervening years the figures were closer to 0.4 tonnes.

In principle the ratio of household waste per person per year appears to be an effective indicator of performance, and is one which allows comparisons to be made over time and between areas. However, it has been very difficult to obtain accurate and up-to-date information on this indicator, even at a

Figure 4.10b Indicator Sheet for Household Waste included in the Final Sustainability indicators for Fife Report page 2 (FRC,1995a).

Use of Resources

District level. There have also been changes in the regulations and in the definitions which make it difficult to make comparisons.

The other problem with this indicator is that household waste is only a small fraction of the total waste produced in Fife (only 8% in 1992). While reducing household waste is clearly an important issue, it is necessary to act to reduce the total amount of waste being produced by all sectors. The provision of up-to-date figures to enable accurate monitoring to take place is also a major issue.

DATA AND INFORMATION SOURCES

Scottish Abstract of Statistics.

District Councils (Environmental Health Departments)

HOUSEHOLD WASTE

Inconclusive

EVALUATION OF THE INDICATOR

Volumes and methods of disposal of household waste are, together, an important issue of sustainability in terms of environment and future conditions. There are also questions of equity of impact in terms of location and means of disposal.

On current figures, and in the absence of time-series data, it is difficult to determine a trend.

THE WAY FORWARD

Change lifestyles to reduce consumption, thereby reducing the amount of waste produced;
Reuse and recycle goods and packaging by environmentally sound means;
Promote environmentally sound waste disposal and treatment;
Promote participation in turning waste into re-usable resources.

The information for each indicator that was used in the final report was divided into the following section:

- **Graphic** - this shows the trend over time;
- **Background** - this outlines the importance of the issue in Fife or in Scotland;
- **Sustainability issues** - this section explains the relationship between the issue and the principles of sustainability, and draws together linkages with other issues and indicators covered in the report;
- **Analysis of indicator** - this section explains why this particular indicator is being used to measure the issue, what the data means, and how the issue might be measured more effectively in the future;
- **Evaluation** - this section uses the four principles of sustainability to make an assessment as to whether the trend of this indicator is towards sustainability, away from sustainability or inconclusive;
- **Data and information sources** - these notes provide a guide to where more information can be found;
- **The Way Forward** - This section identifies actions which could be taken to move this indicator towards sustainability. Actions were not identified for all the indicators, and views about appropriate actions were sought as part of the continuing consultation and updating process around the Sustainability Indicators for Fife Report.

Figure 4.10a & b gives an example of this final indicator format for Household Waste.

A small number of additional comments and questionnaire responses were received long after the deadline. In all cases the feedback they contained emphasised that the revised approach taken in the Final draft of the Sustainability Indicators for Fife Report was an improvement on the approach taken in previous drafts.

4.4.7 Initial Indicator Selections and the Final Sustainability Indicators for Fife Report

Table 4.4 shows the 20 indicators selected for inclusion in the final draft of Sustainability Indicators for Fife Report. 10 showed a trend away from sustainability, 4 showed a trend towards sustainability, and 6 do not show a conclusive trend.

Table 4.4 Indicator Trends in the Final Sustainability Indicators for Fife Report

Moving Away from Sustainability

- homelessness,
- long-term unemployment,
- poverty,
- land quality,
- biodiversity,
- quality of surface and underground water,
- pleasant urban environment,
- food supply: agriculture,
- food supply: fisheries,
- energy

Moving Towards Sustainability

- life expectancy,
- infant mortality,
- nursery education,
- safety for pedestrians and cyclists

Inconclusive

no clear trend in the data

- crime

no trend because data not available in a comparable form for more than one year

- affordable warmth alternative means of transport,
- air quality,
- household waste,
- sewagetreatment and disposal

4.4.8 The LGMB Menus and the Final Sustainability Indicators for Fife Report

The Study Report included an analysis of which indicators were used in the final report as at 14th February 1995, in relation to those chosen from the LGMB menus at the 15th August SIWG meeting. This is included as Table 4.5. The numbering system used in the table relates to the LGMB menus and indicator numbers (see Table 4.2 above). There are some minor discrepancies between this data and the indicators that appeared in the published version of the 'Sustainability Indicators for Fife 1995' report. This illustrated the difficulties presented by trying to write up an analysis of a document that is still under revision.

Table 4.5 Indicators chosen at the 15th August 1994 SIWG compared with Indicators and supporting information included in the Final Sustainability Indicators for Fife Report

Category A Indicators
Indicators where data were expected to be available on a regional basis.
22 Category A indicators were selected for data collection of which 7 were included in the final draft, 3 were included in a revised form, 4 were included in the commentary as background information, and 8 were dropped.

1.2 Domestic waste production per capita per annum
Included in final report. Time series from 1989. Trend inconclusive due to poor data quality. Limitation of indicator is that it only covers 8% of total waste production in Fife.

1.6 Water abstraction rate per capita/per capita consumption
Dropped before 1st draft.

2.5 Tonnes of sewage discharged untreated or incinerated
Revised indicator used: Proportion of Fife population whose sewage is discharged, largely untreated into the sea. This focuses on a local issues. Figures also included in the commentary covering the amounts of sewage sludge used on agricultural land and for land reclamation in recent years. Snapshot for 1990 only. No trend.

2.10 Percentage of river mileage in class one
Figure (70%) **included in commentary** for Water Quality indicator

3.5 Area of protected natural or semi-natural habitats
Figure **included in commentary** for Land Quality indicator

4.3 Percentage of local demand for water met from local resources
Statement that all demand is met from local resources **included in commentary** for Water Quality indicator

5.1 Number of homeless households in temporary accommodation
Revised indicator: Number of homeless households

5.3 Percentage of local authority dwellings empty
Dropped after 2nd draft once homelessness data became available.

5.4 Percentage of population with drinking water below EC standards.
Figure (0%) **included in commentary** for Water Quality indicator.

6.2 Rate of long-term unemployment
Included in final draft. Data from 1986. Trend away from sustainability.

7.3 Infant mortality/1000
Included in final draft. Data from 1974. Trend towards sustainability.

8.5 Kilometres of dedicated cycle routes
Revised: Length of signed cycle routes (Provision for cyclists).

8.6 Investment in public transport as a percentage of expenditure on roads
Dropped after 1st draft as the use of an input measure, did not mean that the outcome was moving towards sustainability - the investment in public transport is rising, but car usage is continuing to increase.

9.2 Violent crimes/1000
Included in final draft as part of Crime indicator , but problems about the level of reporting and the fear of crime.

9.3 Burglaries/1000
Included in final draft as part of Crime indicator, but problems about the level of reporting and the fear of crime.

9.6 Number of reported rapes/indecent assaults
Included in final draft as part of Crime indicator, but problems about the level of reporting and the fear of crime.

10.1 Children under 5 in nursery/preschool as a percentage of total
Included in final draft. No trend.

10.2 Pupil/teacher ratio
Dropped after 1st draft

11.6 Percentage of electorate voting in local elections
Dropped after 2nd draft as it was unclear what the relationship was between levels of voting and sustainability.

11.7 Number of responses to local plan or similar consultation document (Environment Charter questionnaire)
Dropped after 1st draft as this did not measure the outcome of the work.

12.4 Library use per capita
Library membership data collected, but **dropped** after 2nd draft as the relationship between library membership and sustainability was unclear.

13.8 Number of tree preservation orders
Dropped after first draft as it was not felt to be a useful measure of sustainability issues.

Category B Indicators

Indicators expected to require further work. Within the remit of the project work was expected to be focussed on definition and appraisal.

12 Category B indicators were selected for data collection of which 3 were included in the final draft in a revised form, 2 were incorporated into the commentary of an indicator and 7 were dropped.

1.10 Area of open land lost to development
Revised, used increase in urban area in final draft as Land Quality indicator

2.8 Area of contaminated land
Dropped after 2nd draft as it was not possible to separate data for derelict land and contaminated land so the sustainability issues were unclear.

3.6 Change in population of Red Data Book species
Dropped as 'they are particularly rare in Fife'(!).

6.8 Total number of child day care spaces available (at Fife wide and local level)
Dropped before 1st draft.

7.7 Percentage of population covered by cervical cancer/breast cancer screening programmes and take up
Included in commentary of life expectancy indicator.

7.9 Road traffic accidents/1000
Revised to pedestrian and cyclist accidents as this was felt to be a better assessment of sustainability.

8.1 Percentage of population within 400 metres of public transport
Dropped as data not available and level of service is an important issue, but an indicator sheet was included on Access to Basic Services.

8.3 Percentage of population 'within x metres of basic services' (eg. health centre, food shop, post office/bank, school)
Revised version included in final draft based on numbers of sub Post Offices. Future work on travel time budgets and proximity of local services is planned.

11.3 Number of voluntary groups
Dropped after 2nd draft as increasing numbers of voluntary groups may be positive or negative. Exploring other indicators of voluntary group activity for use in the future.

12.2 Percentage of population living > 1 km from accessible green space of recognised value.
Dropped before the 1st draft.

12.3 Percentage of public buildings with disabled access or facilities for the physically impaired.
Data for FRC buildings **included in commentary** of Access to Basic Needs indicator.

13.7 New trees planted per capita
Dropped as no reliable data was available.

A further group of indicators (**Category C**) was felt to have interesting potential for further exploration.

5 Category C indicators were selected for further investigation of which 1 was included in the final draft, 2 were included in the commentary as background information, and 2 were dropped.

Sighting of bats - dropped

Nitrate levels in bore holes for water extraction - used as Water Quality indicator

Local democracy (number of surgeries,usage, advertising of surgeries) - dropped

Women & domestic violence - included in commentary for Crime indicator
Cycling proficiency - included in commentary for Provision for Cyclists indicator.

Table 4.5 starts with the original selection of indicators made by Fife staff on 15th August 1994 and the final range of indicators and supporting information used in the Sustainability Indicators for Fife Report. Table 4.6 starts from the LGMB Menus and looks at the indicators and supporting information used in the Sustainability Indicators for Fife Report. The reason for including this data in the Study Report was stated as:

> "Several of the indicators that were used in the final draft of the report were in the menus, or were very similar to menu indicators but were not selected initially for testing." (FRC, 1995b: 22)

This is important because it suggests that some of the issues of the balance of the Fife report more clearly rest with Fife staff and the original selection of indicators rather than with limitations in the range of possible indicators proposed in the LGMB menus. Although not stated in the Study Report, it was the case that the LGMB menus were not really refered to between August, when the initial selection of indicators was made, and December / January when I was checking whether we had included at least one indicator for each of the LGMB's 13 themes. Table 4.6 was generated to demonstrate that we had sought to fulfil our task as a pilot authority of testing one indicator from each of the LGMB themes. It was during this process that it became clear how much extra work we had made for ourselves by not refering back to the LGMB menus when we sought to discard an indicator as inappropriate. At that point we always sought to devise 'our own' indicator rather than checking whether there was a useful alternative suggested in the LGMB menus.

Table 4.6 LGMB Menus and the Sustainability Indicators for Fife Report

1. Resources are used efficiently and waste is minimised by closing cycles;

1.2 Domestic waste produced per capita per annum
1.9 1.9 % of housing stock with energy rating of 8 or greater:
Revised for Affordable warmth indicator - average energy rating.

1.10 Area of open land lost to development: Revised, used increase in urban area

2. Pollution is limited to levels which natural systems can cope with and without damage;

2.5 Tonnes of sewage discharged untreated or incinerated
Revised indicator used: Proportion of Fife population whose sewage is discharged, largely untreated, into the sea.
2.10 Percentage of river mileage in class one
Figure (70%) included in commentary for Water Quality indicator

3. The diversity of nature is valued and protected;

3.3 Maintenance or percentage increase of populations of characteristic species/indicators of species assemblages: *used macrophytes in ponds*

In addition the following indicators are felt to have value for further investigation for use in future work on Sustainable Fife Indicators:

3.7 Percentage of farmland covered by farm conservation plans
3.8 Percentage of land farmed organically

4. Where possible, local needs are met locally;

No menu indicators used, but work carried out on meeting local food needs locally, with information collected on fish, and work is ongoing on the distribution of locally grown food.

5. Everyone has access to good food, water, shelter and fuel at reasonable cost;

5.1 Number of homeless households in temporary accommodation
Revised: Number of homeless households
5.4 Percentage of population with drinking water below EC standards.
Figure (0%) included in commentary for Water Quality indicator

6. Everyone has the opportunity to undertake satisfying work in a diverse economy. The value of unpaid work is recognised, whilst payments for work are fair and fairly distributed;

6.1 People living below the poverty line: *Revised people receiving income support*
6.2 Rate of long term unemployment

7. People's good health is protected by creating safe, clean, pleasant environments and health services which emphasise the prevention of illness as well as proper care of the sick;

7.1 Percentage of smokers: incorporated into commentary of life expectancy indicator
7.3 Infant mortality / 1000
7.7 Percentage of population covered by cervical cancer screening programmes and take up rate: *incorporated into commentary of life expectancy indicator*
7.9 Road traffic accidents: revised into pedestrian and cyclist accidents

8. Access to facilities, services, goods and other people is not achieved at the expense of the environment or limited to those in cars;

8.3 Percentage of population within X metres of a Post Office: *Not possible to collect as time trend data 'not available'*
8.5 Kilometres of dedicated cycle routes
Revised: Length of signed cycle routes

It is recommended that the following indicators are included in future reports:
8.2 Average travel to work distance
8.9 Passenger miles by mode per capita

9. People live without fear of personal violence from crime or persecution because of their personal beliefs, race, gender or sexuality;

9.2 Violent crimes / 1000
9.3 Burglaries / 1000
9.6 Number of reported rapes / indecent assaults

There are problems about the level of reporting and data on the fear of crime are which not available but would be desirable:
9.1 Percentage of population feeling safe to go out at night.

10. Everyone has access to the skills, knowledge and information needed to enable them to play a full part in society;

10.1 Children under 5 in nursery / preschool education as a percentage of total. *Data not available but desirable for collection:*
10.3 Percentage of population in adult education or training *(although this does not measure the quality of the input or the usefulness of the content).*

11. All sections of the community are empowered to participate in decision making;

None of the indicators found to be useful. Community Economic Development indicator and Decision Making indicators under development.

12. Opportunities for culture, leisure and recreation are readily available to all;

None of the indicators were found to be useful.

13. Places, spaces and communities combine meaning and beauty with utility. Settlements are "human" in scale and form. Diversity and local distinctiveness are valued and protected.

None of the indicators were found to be useful

4.5 The Limited Frame of the Study Report

4.5.1 Thin and Linear Description

The Study Report presents the project as a linear sequence of events situated in the context of the LGMB pilot project and of Fife's stated reasons for participation given in Fife and the LGMB's terms. However, the Study Report does not question the intentions or meanings that organised the action of the project process. For example, the framing given by the LGMB project, of a six month study starting just prior to the summer holiday period and finishing just after Christmas, seeking to involve a population area of 350,000 people, placed considerable limitations on the model of participation available to the community. This was described as a limiting factor but the models of participation that were actually possible with such a short timescale, and the fundamental contradictions between the stated

intentions with regard to community participation and the considerable limitations posed by the timescale and workload framed by the LGMB were not explored in any detail.

The thin, linear description, backed with an analysis based only on the final indicator selections, means the project process is not presented as a as "a text that can be interpreted" (Denzin, 1989) beyond being able to read a certain amount into the omissions and lack of detail in the report.

> "Thin description simply states facts"
>
> Denzin, 1989:32

The Study Report was not intended to be a critical analysis of the whole project process. The framing of the report was given by the Sustainability Indicators Working Group on day four of my contract:

> "This will be a technical document which details issues about choosing indicators, data quality and absent data. It will also set out the consultation approach that was used, the feedback this generated and the way in which this was used to evaluate the appropriateness of particular indicators."
>
> (FRC, 1994f: 2)

The production of the Study Report was seen as a central element of my role as 'Project Consultant'. At the time I held the view that it was important that it was produced according to the framing given by the SIWG seeing this as a trade off that I needed to make in order to retain access to participate in the project. I did not at any stage seek to reframe the Study Report to include a more critical analysis of the framing of the whole project process. This contrasts with my approach to other aspects of the project as I consistently sought to encourage the SIWG to reframe the community consultation and to encourage a stronger sustainability framing of the project. I felt that to try and reframe both the Study

Report and the Sustainability Indicators for Fife Report was unrealistic - although with hindsight this may simply have been a reflection of my relative inexperience as a Consultant in this setting.

4.5.2 A Focus on Process

One of the results of the decision to accept the SIWG members' framing of the Study Report was that it developed the characteristics of a snowball: as the project progressed the Study Report picked up a range of additional issues perceived to be 'essential' elements of the document. This had a considerable impact on the timing of the peak workload of producing the Study Report - as the content in terms of indicator selection, and negotiations regarding of elements of the recommendations ran right through into the final week of my contract as Project Consultant. Combined with my much increased role in the rewriting of the Sustainability Indicators for Fife report in the final 6 weeks of the project this workload did little for the analytical quality of the Study Report.

I tended to prioritise the recommendations that would help to take forward further work on sustainable development indicators in Fife within the broader Local Agenda 21 initiative. This, however, left me little time to explore how the individual indicators which became a part of the final Sustainability Indicators for Fife Report had been arrived at. I made no attempt to explore the iterations of development of individual indicators over the full course of the project. This deficiency was ascribed to the uncertainty over what the final selection of indicators would actually be. However, although it would have been difficult to choose which indicators to track to provide a comprehensive overview, it would have been quite possible to illustrate the Study Report with an example of each iterative stage. The Homelessness and Food: Fisheries indicators were agreed at the end of January so either of these could have been used in this way.

4.5.3 Sustainability Indicators for Fife: Conclusions, Lessons and Recommendations Identified in the Study Report

With the benefit of hindsight it is easy to identify that the structure of the Study Report - particularly the separation of conclusions, lessons and recommendations - made the report convoluted, repetitious and hard to read. As Project Consultant this was entirely my work, and I must take responsibility for these shortcomings and the impact they had on the usefulness of the report as a learning tool. Using the same frame of analysis but a more straightforward structure the contemporaneuos analysis of the project could have been much stronger. However the intensity of the work at that time meant I was really too closely focused on crafting the individual 'trees' to stand back and reflect on the 'wood' as a whole. Re-reading the Study Report I feel that many important points were made regarding the learning from the Fife Sustainability Indicators Pilot. However, the lack of an appropriate theoretical structure for looking at the process and content in context mean many of these points are buried in the text and tables presented within the Study Report.

Sustainability Indicators for Fife: Conclusions

The conclusions drawn in the Study Report concentrated on the process of devising the Sustainability Indicators for Fife Report. The focus of the Study Report on the limitations of the pilot period rather than on what was successesfully achieved was unfortunate and can be seen as a feature of the frustration I felt during that hectic final few weeks. These comments do not do the project justice however as the feedback subsequently received regarding the Sustainability Indicators for Fife Report was generally very positive and the work is still used as a good practice example despite the time elapsed and the proliferation of other local indicators examples (IdEA, 2000).

Figure 4.11 gives the text of the concluding section of the Study Report concerning the production of the Sustainability Indicators Report.

Figure 4.11 Conclusions of the Study Report:
The Process of Producing the Sustainability Indicators for Fife Report

"The Sustainable Seattle project which received particular attention in the framing of the LGMB project, took place over nearly two years. 150 people were involved in the Civic Panel which held four plenary meetings in addition to individual and committee work. The Civic Panel identified 99 indicators, which were then subject to a technical review. Only after this process was data collection started. The LGMB project did not carry out such extensive consultation on the indicators prior to putting them out to pilot authorities for testing.

The very short time scale for the LGMB project, and the stipulation that at least one indicator was used from each menu meant that those involved in selecting and collecting data on the indicators were discouraged from thinking through what would be the most appropriate indicators to measure local sustainability, and which data sources could be explored in order to see if useful sustainability indicators could be developed.

In Fife 39 indicators were adopted at a very early stage in the Project, and attempts were made to collect data for all of them. Of these 8 were included in the final draft of the Report, 6 were included in a revised form, 8 were included as in the data used as part of the written in the commentary for indicator sheets covering related issues, but 17 (almost half the original selection) were dropped before the final report stage.

The menu driven approach, combined with a reliance on published data sources also created the risk that the selection of indicators would not give a balanced view of what was happening locally. Some of the indicators eventually used in the final draft of the Fife-wide report were very similar to options in the LGMB menus which were not selected initially but were subsequently identified as being important in to sustainability in Fife.

The short time scale for the project meant that there was initially a reliance on easily accessible published data sources. These predominantly relate to inputs (money, materials) and outputs (reports, conferences etc) but there is relatively little easily

accessible information on outcomes and on quality of service. This could have masked the need for better information on outcomes as it was not being sought.

The LGMB menus are relatively strong for quality of the environment and some aspects of use of resources and basic needs, but the indicators recommended for community aspects are very weak. This led to the collection of data on indicators that really do not measure sustainability issues effectively."

FRC 1995b:24-25

The section of the Study Report presenting conclusions about the Sustainability Indicators for Fife Report goes on to look at 'The Role of the Report in Future Work Towards a Sustainable Fife' (see Figure 4.12). This addresses several key issues:

- the importance of monitoring and reporting being linked to action towards sustainable development;
- the negative impact of jargon on widespread understanding of 'sustainable development' issues;
- the importance of the inclusion of global and intergenerational perspectives in 'sustainable development';
- the need for partnership working with other organisations across Fife to deliver sustainable development objectives; and,
- the need for sustainability indicators work to be integrated into existing programmes of work rather than being additional.

Each of these points really requires more elaboration of the evidence upon which it is based. It would also be useful to have a more detailed explanation of how these points could be more successfully addressed in practice.

Figure 4.12 Conclusions of the Study Report:
The Role of the Report in Future Work Towards a Sustainable Fife

"The primary purpose of monitoring sustainability issues in Fife is to ensure that

appropriate action is being taken to move towards sustainability. The monitoring process needs to be integrated into a comprehensive programrne of objective setting, policy formation, allocation of resources, target setting and the monitoring and reporting of sustainability indicators.

The work on sustainability indicators in Fife is only at a very early stage, but already the process of undertaking the project and the findings it has produced are felt to have been a valuable learning process about sustainability issues and the actions necessary to tackle them for those involved Internal Working Group and the level two pilots in Glenrothes, Benarty and the East Neuk.

The jargon which is commonly used to explain sustainability is a huge barrier to widespread understanding and involvement. A much better initial response has been achieved in Fife by asking simple questions (eg what are the good bits about living in Glenrothes/what are the bad bits and what action needs to be taken etc) and through focussing on 'quality of life and quality of the local environment' rather than using the terms 'environment' or 'sustainability'. There are many people who are not familiar with the jargon of sustainability, but that currently incorporate many or all of the principles of sustainability into their work and lifestyle and it is important that it is people's actions that are the important focus of attention, not the language that is used to describe what is being done. One example of this is that there appears to be considerable scope for developing partnerships with groups who have historically had a 'social' focus and have been put off by 'environmentalism'.

It is crucially important that the global and the intergenerational perspective are central in future action. For this reason information has been collected on a number of 'thinking tools' which may be of value in explaining the impacts of the day-to-day decisions of people in Fife on people and the environment across the world, these include the concepts "ecological footprint" and "environmental space".

Many of the issues monitored through the Sustainability Indicators for Fife Report are not under the direct control of Fife Regional Council. However, the Regional Council has recognised in its Sustainable Development policy that through taking action itself an example can be set to local businesses and households and that the Regional Council can also create appropriate conditions for others to take action towards sustainability. The Regional Council also promotes working through partnerships: with communities, with businesses, with other public sector agencies

and with central government agencies. Moving towards sustainability will require the principles of sustainability to be fully integrated into the work of all these bodies.

If future work around Sustainability Indicators is perceived to require a lot of additional resourcing or additional work it is unlikely to succeed in the medium term. This should not be a major hurdle, as successful implementation of sustainability indicators is about finding more effective ways of carrying out the roles and responsibilities of the Authority so that sustainability is built into all its work, rather than carrying out lots of additional work to counteract the effects of the way that tasks are currently carried out.."

FRC 1995b:25-26

The section on 'lessons' covered two types of issues. The initial two paragraphs (Figure 4.13) addressed further process issues: the scope for refining indicator choices prior to starting to collect data, and the narrow ownership base of the indicators selected for the Sustainability Indicators for Fife report which resulted from the initial indicators selection process.

Figure 4.13 Lessons of the Study Report: Selecting Indicators

"The Role of the Report in Future Work Towards a Sustainable Fife.
In terms of staff time and in terms of engaging more people in the process of consultation, it would have been more valuable to refine the list of indicators more rigourously prior to data collection. This could have produced a more coherent set of indicators based on local and global issues with strong crosslinkages between the issues.

There is a danger that the approach promoted by the LGMB Project involving the selection of indicators from a pre-set list by a relatively small group of officers divorces the data collection and monitoring exercise from the wider tasks of setting objectives, identifying policies and taking action. Although some collaborative working has been possible, relatively few people will have a sense of 'ownership' of these indicators as an effective way of measuring progress towards sustainability in their areas of work."

FRC, 1995b:26

These points could just as easily have followed on from the earlier section covering conclusions regarding the process of producing the report. These are points about how the framing of the pilot project constrained the outcomes that could be achieved.

The next 3 paragraphs of the 'lessons' regarding the Sustainability Indicators for Fife Report covered data-collection, communication and target setting(Figure 4.14). The use of the term 'could' rather than 'should' implies that a possible course of action is being suggested rather than a clear recommendation being made. Given that these proposals had already been discussed by SIWG members and agreed by the Depute Director, Economic Development and Planning, prior to the production of the final draft of the Study Report the tone is surprisingly tentative.

Figure 4.14 Lessons of the Study Report: Data collection, Communication and Target Setting

"Monitoring the Sustainability of Fife requires a regular cycle of data-collection, analysis and publicity. Because data-collection and analysis of a large number of indicators at once is time consuming and unwieldy, and because a report containing all the indicators is off-puttingly large, a rolling programme over several years may be an effective way of tackling Fife-wide Sustainability monitoring. This would:
- maintain the momentum of the project by having a continuous cycle of work;
- maintain the profile of reporting, particularly if 4 or 5 indicators were reported on annually;
- fit with the cycle already established for the Action Programme for the Charter for the Environment;
- give a discrete and relatively predictable workload that could be incorporated into the normal workload of the department.

The whole Sustainable Fife Indicators report could be re-published at any point in the cycle, but could normally be circulated in a loose-leaf format, with individuals and organisations being sent annual updates. This approach would require a clear set of data collection and analysis procedures to be set down for each indicator so that the

tasks can be carried out consistently by different people.

A rolling programme would also enable the targets to be improved incrementally. Targets could be set for a five year period based on a clearly identified programme of actions. The indicators then take their rightful role as a review mechanism of the actual outcomes of the policies and actions of the organisation in terms of meeting its stated objectives and values.

FRC, 1995b:26-27

These 'lessons' were not really insights that came out of the process of drawing up the Sustainability Indicators for Fife Report. They were really ideas I had developed, as a result of contact with other Local Agenda 21 initiatives, as possible ways the Fife's sustainability indicators process could be taken forward following the pilot. These ideas were tested on the SIWG and refined in the light of their feedback.

The importance of the Study Report containing clear proposals for work continuing on beyond the pilot had been stressed to me by several SIWG members. Because the Sustainability Indicators pilot was the first piece of work carried out by Fife Regional Council which explicitly addressed Local Agenda 21 there was also pressure to include proposals in the Study Report covering mechanisms of participation and the involvement of stakeholders that would be of value to the wider Local Agenda 21 process. This effectively created an role for the Study Report which went beyond documenting activity during the current pilot. This added to the workload and to the sense that the final version of the Study Report was seeking to cover a considerable amount of ground. The final 6 paragraphs of the'lessons' section deal with mechanisms for participation (Figure 4.15).

Figure 4.15 Lessons of the Study Report: Mechanisms for particiaption in work towards sustainability

"Other departments and other non-local authority organisations need to be active participants in work towards sustainability. This will include finding approaches which enable meaningful participation in decision making. One model which has been used successfully in decision making on sustainable development elsewhere is 'roundtables'.

Roundtables could be established with a clear set of tasks:

- to identify relevant work and organisations that need be taken into account in the process of monitoring and acting on sustainability issues in Fife
- to identify key issues that need to be addressed,
- to identify policies and actions which aim to improve performance on these issues
  - to identify targets for improvement
  - to identify indicators to measure change towards or away from Sustainability

The 'Roundtables' do not have to be based on newly created groups, some of these activities could be incorporated into the work of existing fora. Fife currently has an active Women's Network, an Elderly Forum, and fora for people with disabilities and for ethnic minorities. There is also the Green Business Fife network. There is currently no Fife-wide Youth forum. It will, however, be important to be clear about how existing representatives on the fora are selected, how representative the existing fora are and who they report back to.

It will be necessary to develop mechanisms which encourage each roundtable to take an holistic view and incorporate the values and principles of sustainable development, including global and intergenerational perspectives, into work undertaken on issues, actions target setting, and monitoring around sustainability. This could include the provision of briefings, the provision of training, and the use of cross-forum working groups on particular issues which report back to each forum .

If a range of fora are to be used a mechanism is essential that brings together the ideas and recommendations for action that are generated by these fora. There is also a need to incorporate the experiences and expertise being developed in the local areas pilots and through the Internal Working Group of the Sustainability Indicators Project. A mechanism also needs to be identified to incorporate partnership with

other organisations into the Sustainable Fife Roundtable process. This could be via the ad hoc working groups, or through regular conferences.

A rolling programme approach would give scope for more detailed refinement of each indicator during the first five year cycle. The consultation process to date has been helpful in refining the current selection of indicators, but in order to make the exercise more robust it would be useful to spend more time on detailed consultation on each indicator. This is closely related to the need to develop a process of target setting and the development of associated policies and action programmes to ensure that these improved standards are met.

FRC, 1995b:27-28

The final section of the material on The Sustainability Indicators for Fife Report was headed 'recommendations'. These were 'process' recommendations regarding how to take forward work on Local Agenda 21, and within this strategy how sustainability indicators would play a role (Figure 4.16).

Figure 4.16 Recommendations of the Study Report

"Short term It is recommended that:
It is recognised that Sustainability Indicators are an important element of the work being carried out in Fife towards sustainability and are incorporated into future programmes of work. Work should continue to develop, monitor and publicise locally relevant indicators at a Fife-wide level.

The Sustainability Indicators for Fife Report is used as the basis for continued consultation and refinement of the most appropriate ways of measuring the effectiveness of action towards sustainability at a Fife-wide level.

The appropriateness of incorporating work on sustainability into the remit of the existing Chief Executive's fora, and Green Business Fife be investigated. This will include an assessment of the existing role and remit of each forum, the representativity of each forum and the mechanisms in place for reporting. It will also include an assessment of the value of providing training and briefing materials in order to assist the forum members in integrating sustainability issues into their existing programmes of work.

The formation of fora to represent other stakeholder groups including youth, voluntary and campaigning organisations, and trades unions should be investigated.

The role of each forum with regard to sustainability would include identifying sustainability issues, identifying actions which they feel would move practice towards sustainability, identifying targets for improvement over the next 5 years, and identifying the most appropriate ways of measuring whether progress is being made towards achieving these targets.

The work of these fora would feed into an umbrella 'Sustainable Fife Roundtable'. This would have three strands:

(i) Ad hoc working groups which would comprise representatives from any of the stakeholder fora which would meet to look at particular issues.

(ii) Regular conferences to which all stakeholder forum members and others interested in sustainability issues would be welcome, this would give an opportunity to encourage an holistic viewpoint, and to discuss global/local perspectives.

(iii) A 'top-table' comprising representatives from each forum, representatives from the local pilot areas, and officers of the Fife Regional Council Departments. This group would be the channel by which recommendations are submitted to the Planning and Environment Committee and possibly other Regional Council Committees in order that the views of the Sustainable Fife Roundtable are incorporated into the policy, investment priorities, and actions of Fife Regional Council.

The Sustainable Fife Roundtable process also needs to incorporate the development of partnerships with other organisations.

Medium term

The fora would have a role as a communications network about sustainability issues which would incorporate the communities, groups, and organisations which they represent. They should be encouraged to develop awareness and action on sustainability. This may include briefings, publications and training opportunities. Funding and staff support would need to be allocated to cover the increasing workload that this widening role would bring.

The Sustainable Fife Indicators Report be updated on a rolling review basis and published and publicised at appropriate intervals. Individual indicators can be published in a loose-leaf format on an annual basis.

Linkages should continue to be developed between the Fife-wide indicators and other programmes of work using data sets available at local area level."

FRC, 1995b: 28-29

The Study Report contained a further Section entiled "Relating the Fife Sustainability Indicators Project to Work Towards a Sustainable Fife"(Figure 4.17). This addressed the indicators trends and data issues.

Figure 4.17 Relating the Fife Sustainability Indicators Project to Work Towards a Sustianable Fife

The overall findings of the Sustainable Fife Indicators Report raise two primary questions:

(i) why so many of the indicators are moving away from sustainability;

(ii) why do so many of the indicators lack a clear trend.

Why are so many of the indicators moving away from sustainability?

The conclusions identified in the Study Report were that:

In the case of basic needs indicators the main factors behind the worsening inequality between those in well-paid, secure jobs and those on low incomes appear to be:

(i) legislative and fiscal policy at a UK level, for example VAT on fuel, restrictions on public sector spending on low cost housing, the poverty trap created by the current thresholds and conditions of entitlement to welfare benefits.

(ii) government and corporate employment priorities which focus on economies of scale, centralisation of services, the replacement of labour with mechanisation and computerisation, and increasing competition in a global marketplace.

In the case of quality of the environment and use of resources indicators the main factors are the current patterns of production and consumption.

These conclusions were not backed up with any evidence to support the assertions they contained.

Why do so many of the indicators lack a clear trend?

The following indicators do not show a trend. In some cases the lack of a trend is due to a lack of consistent monitoring or availability of data, in other cases it is because there is adequate data available but the data does not show a clear trend.

•**Reported crime** - the data is available at a Fife level, but the trend is inconclusive and it is recognised that many crimes go unreported.

•**Provision for cyclists** - work to improve provision for cyclists is at a early stage and it is unclear whether there is any resultant increase in the use of bikes for transport.

•**Air quality** - the current pattern of monitoring of air quality is insufficient to draw conclusions about trends at a Fife-wide level. There are concerns about the impact of increasing car usage on urban air quality, including the impacts of Fife commuters in urban areas outwith Fife.

•**Household waste** - it has proved difficult to obtain accurate and up to date information for this indicator, so no conclusion has been drawn, although patterns of consumption of packaged foods and consumer goods suggest the trend is away from sustainability.

•**Sewage** - There is only data for 1990 so no trend can be determined.

•**Affordable warmth** - data was only available at a Scotland-wide level. Two out of three District Councils within Fife had not carried out energy audits of property. Scottish Homes had carried out relevant survey work but would not release the data for use in the Sustainability Indicators study.

•**Life expectancy** - the data is available at a Fife level, but there is considerable variability year to year and no conclusive trend.

•**Nursery education** - the data is available for Fife Regional Council run nurseries which does not show a conclusive trend, but without data for the private sector establishments conclusions cannot be drawn about the overall trend in provision.

FRC, 1995b: 36-37

Two of the indicators identified at the Study Report stage (Feb 1995) as

inconclusive, life expectancy and nursery education, were subsequently identified in the published report as moving towards sustainability. There was no additional data gathered or presented. This suggests that a different interpretation regarding the conclusiveness of data was made by Fife Research and Information staff.

The following issues were identified as important and data sets sought to illustrate trends. At the Study Report stage they were identified as inconclusive, but in the published report the issues were written up as 'holding sheets' and no attempt to identify a trend towards or away from sustainability was made.

"• **Skills and training** - this is recognised as an important issue that needs to be monitored, but it has not been possible to identify a single indicator that can be used to monitor the wide range of work taking place.

• **Community economic development** - this is recognised as an important issue that needs to be monitored, but it has not been possible to identify a single indicator that can be used to monitor the wide range of work taking place.

• **Decision making** - this is recognised as an important issue that needs to be monitored, but it has not been possible to identify a single indicator that can be used for monitoring." FRC, 1995b: 37

The section covering linking indicators to action (Figure 4.18) stressed why issues of process are important in shaping the indicators chosen to evaluate whether Fife is seen to be moving towards or away from sustainability. However, the Study Report did not really present the evidence on which this guidance was based. This issue will be addressed again in section 4.7.

Figure 4.18 Linking the Indicators Project to Action Towards a Sustainable Fife

"This Study Report has focussed heavily on the process of the Sustainability Indicators Project. This is because the process is important. The process determines who gets involved in deciding what issues are important, which indicators are selected to measure them, and how this information is used.

The variability in the responses to the quality of life questionnaire in different communities, the different perspectives brought to the Internal Working Groups; and the differing views submitted to the consultation drafts of the Fife-wide Report all illustrate the way in which the process has shaped the outcomes. The lengthy discussions in the Internal Working Group, and the widespread consensus towards the end of the project that a more global perspective was essential were an example of the way in which the project has served as a learning process for all those involved.

The learning process of moving towards sustainability in Fife or worldwide needs to be widespread and comprehensive, and each individual brings different experiences and attitudes to the process.

The Sustainability Indicators for Fife Report is seen as a starting point in developing sustainability indicators for Fife. The views of people and organisations in Fife are seen as fundemental to the development of future work on indicators in terms of identifying issues, proposing actions, setting targets and monitoring progress. Moving towards a "Sustainable Fife" will require changes in values, policies and actions by people across a wide range of situations and places. Moving towards sustainability will be the collective effect of many individual actions, but these individual actions will be made considerably more powerful if the economic and political structures that currently opposed sustainability are amended.

Local authorities have a pivotal role, and Fife has a particular opportunity to build on the sustainability work carried out to date. As the new unitary authority it will assume responsibility for an increased number of functions in April 1996."

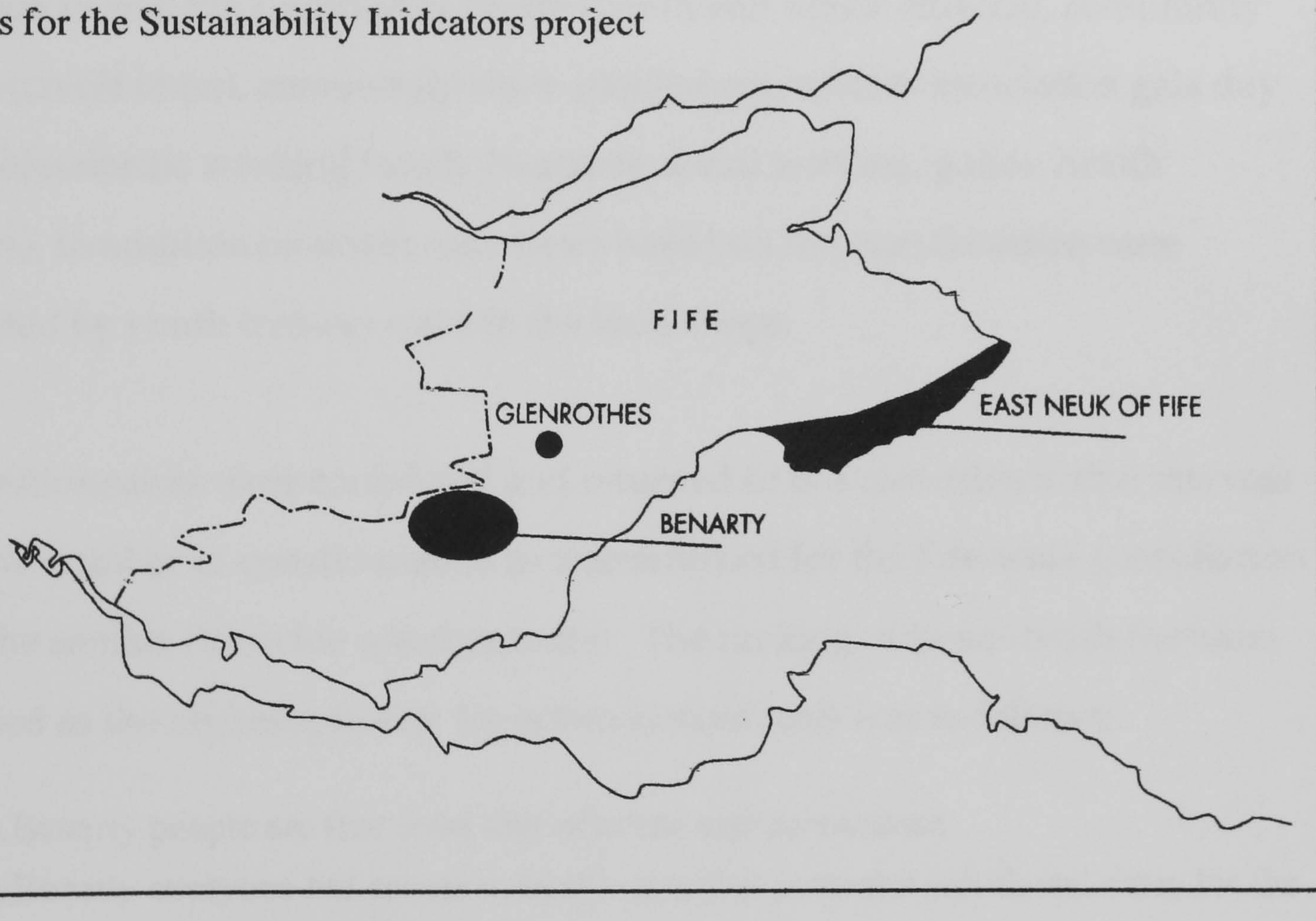
FRC, 1995b: 37-38

4.6 The Community Pilot Areas

The large population and the diversity of the communities within Fife made seeking meaningful community involvement very difficult at a Fife-wide level. There is no Fife-wide newspaper and umbrella groups and community councils do not exist everywhere. For this reason it was agreed at an early stage in the negotiations with the LGMB that three local pilot areas would be chosen which would give scope for more detailed consultation.

4.6.1 Selecting the Local Community Pilots and Choosing the Consultation Approaches

Figure 4.19 Map of the Fife Community Pilot Areas for the Sustainability Inidcators project



The local area pilots were selected on the basis of geography, the types of issues likely to arise, and the existing community networks. The SIWG discussed various alternatives and selected the following areas: Benarty, three ex-coalmining

communities in west Fife; the East Neuk, 13 coastal communities in South East Fife; Glenrothes a new town in central Fife (seeFigure 4.19). Communities across Fife were not notified about the Sustainability Indicators pilot and none of the 'selected' communities were consulted regarding whether they wished to take part before the SIWG made its selection decision.

4.6.2 Benarty

The local group formed to co-ordinate work on this project comprised Community Education staff, the Manager of the local Community Centre, the Manager of the Social Needs Strategy Outreach Office, and an Adult education worker. The group revised the Fife-wide questionnaire to make it more locally relevant and then arranged for it to be distributed via the community school (sports and adult education users), the community centre (youth and senior citizens), community groups (credit union, community store, playgroups, tenants association gala day etc), professionals working locally (teachers, social workers, police, health workers). In addition on-street interviews based on the questionnaire were conducted by youth trainees outside the local shops.

142 questionnaires were completed and returned (it is a coincidence that this was the same number of questionnaires as was returned for the Fife-wide consultation using the similar Fife-wide questionnaire). The ranking of issues (with the issue identified as the highest priority for action ranked one) was as follows:

1. In Benarty people are free from fear of crime and persecution
2. In Benarty everyone has access to health care that promotes health and cares for the sick.
3. In Benarty food, water, housing and fuel are available to everyone at an affordable price.
4. In Benarty everyone has access to satisfying work with fair pay.
5. In Benarty where possible, local needs are met locally.
6. In Benarty everyone has access to education, skills, training and information.
7. In Benarty access to shops, schools, health and leisure facilities is not dependent on

car ownership.

8. In Benarty health is protected by a clean safe environment.
9. In Benarty voluntary work and unpaid work are recognised as a valuable contribution to maintaining communities.
10. In Benarty waste is kept to a minimum.
11. In Benarty everyone can take an active part in decision making about issues that affect them.
12. In Benarty damage to the environment by pollution is kept to a minimum.
13. In Benarty local nature is protected and enhanced.
14. In Benarty everyone has access to opportunities for leisure, culture and recreation.
15. Benarty is pleasant to live and work in.
16. In Benarty everyone has the opportunity to spend time with family and friends.

Crime featured higher in Benarty than in the Fife-wide returns, this may have been influenced by an armed police stake out in the area at the time the questionnaires were being completed! However, the perception of local community workers is that crime would have featured as a prominent issue at any time. Meeting local needs locally features higher than in the Fife-wide returns, whereas damage to the environment by pollution features much lower.

There was interest in taking this work forward, but the jargon that surround the presentation of sustainability issues to date was unhelpful in getting people interested and involved. Discussion took place regarding the scope for training local community education staff in a range of techniques known as 'Participatory Rural Appraisal' (PRA). The purpose of this would to be to map people's perceptions of the area. These techniques have a number of uses:

(i) to make clear that people have differing perceptions of the area

(ii) to make clear that there has been substantial change over time

(iii) to develop discussion of sustainability issues without getting tied up in the jargon.

In December 1994 I arranged for a PRA consultant/ trainer, to make a

presentation to Community Education staff about how these techniques have been used in other communities in Scotland. This was felt to be a useful way of identifying issues and from this generating priorities for action and indicators to measure progress. However, a debate over which department ought to fund future PRA activity meant this work was not pursued.

Discussions also took place about the scope for developing approaches to tackle the issues highlighted in the questionnaire, for example with the local Crime Prevention Panel and the Benarty Environment Group. The Benarty group were also interested in piloting the basic needs indicators currently being developed.

4.6.3 East Neuk

The selection of the East Neuk as a pilot area was based on the view that there was 'a well developed local network of Community Council Chairs and Regional and District Councillors' in the area at the time of the pilot (Terwey, 1994). A presentation was made to them about the indicators project, the opportunities for participation and the scope for development of local indicators. The feedback at the meeting was enthusiastic, although it did not generate a widespread response from the public at this stage, and there were only 24 questionnaires returned from the East Neuk.

The following priorities were identified in the questionnaire returns:

1. People are free from the fear of crime or persecution.
2. Everyone has access to health care that promotes health and cares for the sick.
3. Food, water, housing and fuel are available to everyone at an affordable price.
4. Damage to the environment by pollution is kept to a minimum.
5. Everyone has access to satisfying work with fair pay.
6. Everyone has access to education, skills, training and information.
7. Where possible, local needs are met locally.
8. Health is protected by a clean safe environment.
8. Everyone can take an active part in decision making about issues that affect them.

10. Access to shops, schools, health and leisure facilities is not dependent on car ownership.
10. Waste is kept to a minimum.
12. Towns and villages are pleasant to live and work in.
13. Local nature is protected and enhanced.
14. Everyone has access to opportunities for leisure, recreation and culture.
15. Voluntary work and unpaid work is recognised as a valuable contribution to maintaining communities.
16. Everyone has the opportunity to spend time with family and friends.

The first three priorities were the same as the priorities identified by Benarty residents. Minimising damage to the environment was ranked higher (4th compared with 12th in Benarty). Participation in decision making was also ranked higher (8th equal compared with 11th in Benarty). Voluntary work was ranked lower (15th compared with 9th in Benarty) although priority placed on paid work was very similar in the responses from both communities (5th in the East Neuk and 4th in Benarty).

A further meeting was held in January 1995. This looked at the top five issues prioritised in the questionnaire responses. The meeting was run as a workshop, looking at the good and the bad characteristics of the East Neuk in relation to these issues and the specific actions that should be taken. After this meeting it was felt that the stage had been reached where progress was likely to be made more effectively by working in individual villages and drawing up specific programmes of action. Elie, Earlsferry and Pittenweem were interested in continuing further with the project and one or two other villages were seen to have potential for getting more involved. It was also felt to be useful for the East Neuk Communities group to prepare a report, with the assistance of the Regional Council, setting out the work that has been undertaken on the project up to the end of the pilot period. However, the pressure to complete the Sustainability Indicators for Fife Report meant that staff time and focus shifted away from supporting the community pilots and no further work was completed within the pilot period.

4.6.4 Glenrothes

Contact was made via local press articles, the local network of Tenants and Residents Federations, the local College, and local Community Education workers. Because the strategy in Glenrothes was not to work through an existing network, but to work with several different types of groups, it took longer to move from the stage of engaging interest in sustainability to focussing on local actions which can be taken.

A brief presentation was made to the Federation of Tenants and Residents Associations in Glenrothes and this was followed up by a letter to the secretary of each Association. However, the wind-up of the Glenrothes Development Corporation has meant that the Tenants and Residents Associations were very busy with detailed consultations about the handing over of property. As a result only one Tenants Association became actively involved. Rather than using the 16 theme questionnaire, the approach adopted in Glenrothes was to ask straight forward questions: 'what are the good bits about living in Glenrothes', 'what are the bad bits about living in Glenrothes'. This elicited detailed answers from people and meant that they were not constrained to the preset agenda of a questionnaire.

The Collydean Tenants Association took an active role and one of their members circulated forms, with care to make sure that people of a range of ages and circumstances were asked to take part. Interest was expressed in following the approach used by the '100 households project' in Leicester. This started off with a group of households focussing on one issue (crime) and then the impetus generated from successful action on one issue was developed through to other initiatives which met community needs and environmental needs. These included environmental awareness raising, recycling, and a voluntary 20 mile per hour speed pledge. The student environment representative at Glenrothes College tried hard to engage interest from other student representatives, but felt there needed to

be an event which would brief the students about sustainability issues before any significant level of participation was likely to be forthcoming.

The possibility of developing a youth forum for Glenrothes was also explored. This was seen as a useful element of the Glenrothes consultation in that it was seeking to ensure that the views of young people are taken into account in local sustainability work. It was felt to be a useful way of testing out mechanisms for identifying potential participants, developing briefing and training materials and seeking to ensure that the members of the Forum are working to involve others in work towards sustainability.

4.6.5 The Community Pilot Areas: The Conclusions Drawn in the Study Report

Although the LGMB had stated that:

> "The effectiveness of the pilot stage will depend upon mobilising all sectors of the community, from policy-makers to individual citizens, to play an active role in choosing and then working with the indicators."

the very short time scale to undertake the pilot meant that it was extremely difficult to engage active participation by community groups in choosing and using local indicators.

In the Fife Community Consultation Pilot areas the focus of the project was on the identification of local issues, and the development of mechanisms for taking action on these issues, with the aim of developing indicators as a monitoring tool in the future. Adopting different approaches in each community was intended to enable the project to try to build on existing experience about the most appropriate routes and methods of consultation in each community. However, it also made it

difficult to gain feedback on whether the effectiveness of any particular approach was dependent on the dynamics of the community on which it was being tested.

It took about two months to get the project started in Benarty because of the need to provide briefings and information, and for those who were being asked to take part to consult with their colleagues. Perhaps as a result of that necessary attention to detail about who should be involved at the outset, it was the Benarty group who generated the most feedback in the form of the 142 theme questionnaires returned. Considerable interest was been expressed in the scope for taking the project forward and several options were identified for further work.

In the East Neuk the interest of the communities group was engaged relatively rapidly, but it took longer to turn that interest into engagement by the public, and there were questions raised about the extent to which Community Councils felt it was necessary to consult with members of the community which they 'represent'. The workshop techniques that were developed to present the the ideas behind sustainability to the Community Councils in the East Neuk may be transferable to other groups.

In Glenrothes the lack of a single network through which the project could be disseminated slowed the progress of the project, but also offered good longer-term opportunities for developing work on sustainability. The Collydean Tenants Association, the College, and the local network of youth clubs all had an ongoing interest and mechanisms are being developed to turn this interest into action.

The Community Consultation Pilots provided an opportunity to carry out direct discussions with groups and individuals about sustainability issues and the reasons why monitoring change is important. This was seen as offering a more effective learning opportunity than completing a postal questionnaire or reading a

large consultation document. Personal contact and the chance to ask questions and get further information meant that those actively involved in the Community Consultation pilots had a greater opportunity to develop their understanding of sustainability issues.

The jargon of sustainable development was felt to be a huge barrier to widespread understanding and involvement. This was more marked in the community pilots than with the questionnaire about Sustainability Indicators for Fife as many of the consultees who responded to the questionnaire had had previous contact with sustainable development jargon. In the community pilots a better initial response was achieved using by asking simple questions (eg. what are the good bits about living in Glenrothes/what are the bad bits), and through focussing on 'quality of life and quality of the local environment' than either 'environment' or 'sustainable development'. However, because it is easier to engage people's interest by taking a quality of life based approach there is a risk that the global context is not made clear to people. The Sustainable Fife Indicators Report sought to tackle this, but there was less emphasis on the global context in the Community Consultation Pilots.

Consultation and participation cannot be rushed. Each of the Community Consultation Pilots was at an early stage when the LGMB pilot period ended and although the decision was taken at the beginning of the Project to run beyond the pilot period meant that there should have been an opportunity to extend the work, in practice this follow-through was patchy.

4.6.6 Recommendations from the process of Community Consultation in Local Pilot Areas

The Study Report made a series of recommendations regarding the community consultation pilot areas. These focused on extending specific programmes of work begun during the pilot period, and making linkages with other organisations to share learning to date.

It is recommended that:

"The importance of continuing work on sustainability through the Community Consultation pilots is recognised. This work is at an early stage but it is already engaging the interest of members of the communities.

In Benarty the process of reporting back the findings of the project to date is completed. In addition the implementation of a pilot project using 'Participatory Rural Appraisal' techniques should continue to be investigated with a view to enabling the communities to carry out a detailed appraisal of local issues and making linkages with global impacts. This would form the foundation for developing approaches to tackling the issues raised and identifying indicators to measure progress.

In the East Neuk work should continue in individual villages and will involve drawing up specific programmes of action. It is also felt to be useful for the East Neuk Communities group to prepare a report, with the assistance of the Regional Council, which will set out the work that has been undertaken to date.

The lessons learnt in the East Neuk concerning the involvement of community councils can be applied to other community councils within Fife Region and also elsewhere in Scotland. It is therefore proposed that approaches be made to the Scottish Office, with any support available from Association of Scottish Community Councils, to develop the techniques used in the East Neuk with a limited number of other Community councils and to prepare worksheets so that other Community Councils can undertake this work on their own if they wish.

In Glenrothes the scope for taking an enabling role in the development of a

> community led project focussing on a group of households in the Collydean area, similar to the 100 households project in Leicester, is investigated. That work continues to develop interest at the College and also that the scope for developing a youth forum for Glenrothes is being explored."
>
> FRC, 1995b: 35

Although it featured in introduction rather than in the conclusions, lessons and recommendations of the Study Report the following four questions came to be seen as 'where the community consultation process should have started':

> Are the basic needs of local people being met?
>
> Do the lifestyles of local people compromise the ability of people in other places to meet their needs?
>
> Are local people being encouraged to improve their quality of life?
>
> Is the environment being cared for to ensure that future generations are able to meet their own needs?

4.7 A Dialectical Journey To A New Way of Thinking About Sustainability Indicators for Fife

4.7.1 Awareness of the limitations of the Study Report

The thin description used in the Study Report, while factually correct, omits a lot of important detail about what shaped the decision making of Sustainability Indicators project. It tells the reader relatively little about the content of the indicators sheets or the technical details of why a particular data set was used or rejected. It also fails to address the sustainable development framing of the Sustainability Indicators for Fife Report and how this framing changed over time. These frame changes had a considerable impact on the assumptions that are

written into the final textual description for each indicator.

At the end of the Fife project I was aware that the absence of this material would make it hard for those reading about the project to understand the context in which the Sustainability Indicators for Fife report had been developed and how this may help to put into perspective its relative weaknesses and strengths. These omissions would reduce the value of Study Report as a tool for sharing the experience of the Fife project as others who wished to develop sustainability indicators in a Local Government would find it hard to identify the similarities and differences between the context in Fife in 1994/95 and the context of their own practice situation. It was to take me several years to make sense of how to tackle this process of re-orientation and complete a fresh analysis of the Sustainability Indicators for Fife process.

4.7.2 Immersion in the Data Or Drowning in Detail?

When I completed my contract with Fife I had a huge amount of written and experiential data on which to draw for my research. I had made over 400 pages of hand-written notes and gathered almost 5,000 pages of documents generated during the pilot period. These included meeting notes, source materials from which individual indicators and their commentaries had been complied and five separate consultation drafts of the Fife indicators report. I also kept copies of all the responses from consultees to the two publicly circulated drafts of the Sustainability Indicators for Fife report as well as the materials developed in relation to the three community consultation pilots. In addition I also had copies of indicators reports and project summaries generated by the other nine local authorities that became involved as pilots or 'shadows' of the LGMB project and the scoping report and pilot project produced by the LGMB and their consultants. The timescale and framing of the report meant I was only able to draw on a small

fraction of this in writing up the study report. This left much the greater part of the stories about producing the Sustainability Indicators for Fife report outwith the public domain.

My participation in this pilot had been a very intense process. The workload and the stresses involved, especially in the final weeks of the project, were very high. This made it very hard to prioritise my researcher role in the midst of the pressures of being Project Consultant for the Fife project. I came to strongly identify with Gummesson's statement regarding the problems involved in combining the roles of academic researcher and employee:

> "There are substantial problems involved in combining the roles of academic researcher and company employee. The most common are insufficient time for scientific research, and the development of a rather short-sighted perspective as a result of becoming too much a part of the system." (1991: 40)

Because my access to the internal processes of the Fife Sustainability Indicators pilot was dependent on my role as a Project Consultant I felt I had to fulfil the tasks assigned to me as an employee role in order to be able to maintain my research access. Although my contract as Project Consultant was funded by the Scottish Office in practice I was entirely accountable, through line management, to the Depute Director Economic Development & Planning. He appointed me, he chaired the meetings of the SIWG, he made the decision to extend my contract and he signed off the Study Report as complete. I felt I had to behave as 'a part of the system' as Gummesson describes it.

Looking again at the dialectic stages identified by Rowan (1981) explored in Chapter 2 my stage of BEING at the end of the Fife process was equal parts frustration and exhaustion. The rushed nature of the final stages of the project, combined with the community campaigning and University teaching activities to

which I was already committed, created a huge workload. This meant that in my reflections on Fife it was easy to identify further 'attention -to-detail' work that could have improved the quality of both the Study Report and the Sustainability Indicators for Fife Report. However, there had been no further funding available to extend my contract in Fife, and although I carried out some 'tidying-up' of indicator sheets and finding additional appendices for the Study Report well into March, I did not travel through to Fife or attend any meetings after mid-February. I went suddenly from being very heavily involved to having no formal role in relation to the project at all.

My awareness of the limitations of what had been achieved, particularly in relation to genuine participation of Fife residents in the process outweighed any sense of achievement in securing a stronger sustainability framing and improvements in individual indicators in the Sustainability Indicators for Fife Report. As neither Sustainability Indicators for Fife or the Study Report were published until June there was no feedback on what anyone from outside the process thought of the Sustainability Indicators for Fife report. Over the ensuing months the delays in publication of the two Fife reports and the LGMB Sustainability Indicators Project report (which also came out in June) led me to feel that all the pressure to meet tight deadlines was a complete waste of effort.

This stage of BEING also had an impact on the process of MAKING SENSE of the engagement with the Fife project and the outputs resulting from it from a research perspective. It was not easy to jump straight from this immersion to a position of detachment in order to re-analyse the Fife process, and the indicators generated within it. I spent the months immediately after completing my contract in Fife THINKING, particularly about Fife as a research rather than a Consultancy role seeking to address how to MAKE SENSE of the aspects of the Fife work that had not been put in the public domain. Linked to this I was wrestling with issues of

how to COMMUNICATE issues that I felt had strongly shaped the Fife Indicators Project process and the selection of indicators that had not been disclosed in the Study Report.

With hindsight I was still far to close too the material. I had no clearly developed theoretical framework for how I was going to deal with the material which arose from the access opportunity presented by working within the Fife Sustainability indicators project. I have come to agree wholeheartedly with Keynes view that "there is nothing so practical as a good theory" (Keynes, 1940).

4.7.3 Through Conflict and Contradiction Towards Reconciliation and Unity

The struggle I had in identifying a theoretical approach that would reframe the MAKING SENSE and COMMUNICATION stages of the Fife work echos Hegel's perspective on unity. As described in Chapter 2.3.1 Hegel saw unity not as a given fact or an immediately available situation that the mind could passively register. Unity was only understandable as the goal of a complex process of development. Drawing together the linked theoretical approaches described in Chapter 2 and developing and applying them as a theoretical frame for the research on which this thesis is based was neither a short nor a straightforward process.

When the Sustainability Indicators for Fife report was eventually published I was suddenly in demand as a Consultant to advise on other indicators work. At the time I justified these Consultancy roles to myself and others as increasing my understanding of the wider organisational issues in relation to sustainable development indicators, but with hindsight I may have been using the outward movement of PROJECT as a way of avoiding getting to grips with the more isolated process of MAKING SENSE of the data I had already gathered.

I was still endeavouring to address the research implications of the Fife Sustainability Indicators project. My heavily 'positivist' academic training up to that point, and a lack of balancing exposure to the practical conduct of qualitative research, probably conditioned my reaction to the rich written and experiential data I had gathered through my Consultant/Research role in Fife. My reading focused on the need to have a clear research design before any data collection was so much as contemplated. My involvement in Fife had been reactive and I had set out with broad research questions rather than a carefully refined research design. For many months I was not confident that the approach I had taken in Fife could stand up to orthodox tests of scientific reliability and replicability. One effect of this view was that I was wary of presenting the data at all. This became a rather negative cycle within the process of producing a thesis: as I could not write about it was difficult for anyone else to see the nature of the problem and help me find ways of addressing it. I spent a lot of time trying to justify, to myself more than anyone else, why I had not done more when I was working in Fife, or had not carried out the research task differently. An example of this way of thinking was the issue of whether I should have sought to tape meetings - in order to be able to analyse transcriptions of dialogue notes - or not. The following paragraphs come from an earlier draft of this thesis:

> "Participation as an 'insider' also shaped the kind of data recording methods I felt I could use. I considered it to be out of the question to use a tape recorder in either formal or informal meetings. To tape meetings was outside the normal working practices of the local authority and would have raised barriers to being accepted as part of the project team. I took the view that gaining access to the organisational context of the sustainability indicators project required me to be accepted, as far as possible, as a 'useful insider' to the process of taking the project forward. This was a difficult challenge coming into an already established project team, and while only on a short term contract, and I did not wish to risk making this task any more difficult. With hindsight I could, perhaps, have made more of my role as a Doctoral

Student to seek the opportunity to use other data collection methods, but at the time I was not sufficiently sure of my ground to make this case.

An alternative to taping meetings would have been to make detailed dialogue notes from memory soon after each event. However, this would been unrealistically time-consuming as the workload was already very high and the most interesting material tended to be focused in the most high-pressure periods of the project. As well as adding to the time/workload pressures making detailed dialogue notes has been identified as a potential hazard to developing trust in an action researcher/consultant role. Krim (1988) found that using the fieldwork methods of the sociological researcher brought him into considerable conflict with key participants in an organisational development project in which he was a participant/action researcher. He had made notes on his prior perceptions, remembered dialogue from meetings, and analysis of incidents and stored them on a computer. When these were obtained, through accessing his computer records, by those hostile to his development approach it was assumed that he had been illegally taping meetings. The breakdown in trust that resulted had a considerable negative impact on the subsequent development of that project.

Although I carried out some of my role as Project Consultant from my University office my workbase in Fife Regional Council was a desk in an open-plan office shared with 4 other people. Any work undertaken on dialogue notes would have quickly come to the attention of my SIWG colleagues. I did not feel I could afford to take the risk of actions that may be perceived as a breech of trust.

The decision that the adoption of sociological/qualitative research methods that would rely on extensive contemporaneous dialogue would be inappropriate in this context meant I had to forego the option of being able to make a detailed study of the unwritten dialogue that was, nevertheless, crucial to the shaping of the project. This ruled out the analysis of the data using a heavily interpretative approach (e.g. interpretative interactionism, Denzin, 1989), or the intensively self-reflective framing of models of participatory action research such as action inquiry (e.g. Torbert, 1991). Making this choice meant I did, however, retain access to the detailed discussion of the underlying rationale on which the formal decisions made in meetings were based." Rowan, 1996

This exercise in post-hoc rationalisation felt necessary as a way of trying to create a bridge between local government, and Consultant practice in this setting, on the

one side and academic research on the other. Although I was probably being rather harsh with myself in focusing on what hadn't been done, rather than on the huge amount of relevant material I had collected. This arose through a lack of confidence and relevant research experience. The work on indicators projects in the UK that was in the public domain in the late 1990s used thin description (see for example Holland, 1997 reporting on Leicester) and so was of little help as a model for sharing rich, qualitative data. There were plenty of examples of qualitative research in the fields of management and social policy, but a high proportion of these relied on contemporaneous records of dialogue so I could not readily see how I could reconcile established models of MAKING SENSE and COMMUNICATION in management research with the way in which I had engaged in the Fife Sustainability Indicators pilot.

In October 1995 I was approach by Fife Regional Council to make a presentation about the Sustainability Indicators project at the Friends of the Earth Scotland Conference. The aim of the Fife presentation (Appendix 4C) was to give an overview of the process of the Fife project, highlight the findings presented in the Sustainability Indicators for Fife Report, and identify key issues that might be of value to others carrying out work on sustainable development indicators. The text draws heavily on the Fife documents and on the written reports made to the LGMB during the project. As the focus of the task was to summarise and present material that was already in the public domain this did not offer any scope for a fresh analysis of the project data and was effectively a continuation of my previous consultancy role with Fife Regional Council. This meant I was revisting the Fife material with the 'old' consultant frame. This created a further tension carrying out this piece of work concurrently with trying to address the Fife material from a 'new' researcher frame. These issues remained unresolved when I went on maternity leave immediately after the Dunfermline conference.

4.7.4 Looking Anew at the Sustainability Indicators for Fife Process

On my return from maternity leave in May 1996 I returned to wrestling with the THINKING MAKING SENSE and COMMUNICATION stages of the sustainable development indicators material I had gathered around the Fife Sustainability Indicators project. One of the principal difficulties was balancing the requirements identified as 'essential' in undertaking participatory forms of research being conducted by academics 'with' others (see for example: Reason, 1988, 1994a, 1994b, Heron 1996, Torbert, 1991, 1995) with what my previous experience of working within local government led me to believe would actually be possible while still being treated as an 'insider'. This issue of access did not appear to be addressed by many of the authors of guidance on research approaches.

It was the discovery of Gummesson's (1991) book '*Qualitative Methods in Management Research*' (subsequently updated in 2000) that enabled me to realise that this was not a personal struggle, but rather a more widespread issue that is not commonly discussed. Gummesson also addresses the issue of taboo information that has been discovered during the course of the research but has been disregarded in writing up the findings. This was the case with aspects of the Fife Study. I felt that the published version of the Sustainability Indicators for Fife report made the whole process of developing a framework of indicators look smooth and relatively effortless. This masked the considerable efforts involved in identifying and writing up indicators and in framing and reframing the whole report so that it that could reasonably deserve the title 'sustainable development'. Reading the thin description of the Study Report felt rather like watching from a distance as a swan glides serenely across a loch: being too far away to see the webbed feet frantically paddling to provide the propulsion.

Denzin contrasts thin description with 'thick description' and defines it in the

following way:

"Thick description

1. Gives the context of the act;
2. It states the intentions and meanings that organize that action;
3. It traces the evolution and development of the act;
4. It presents the action as a text that can be interpreted." (Denzin, 1989;32-33)

'Thick', or as he terms it 'rich' description forms one component of Gummesson's quality criteria for case study research:

"1) A research project should be conducted in a manner that allows the readers to draw their own conclusions:

- well written, intelligible final report
- a stage by stage account of the research process
- a detailed description of methods and coding procedures
- a well documented and rich description of cases
- cases should be presented (or available on demand) in their entirety in order to facilitate the reader making his own interpretation
- limits of the research project should clearly be explained
- the researcher should inform the reader if taboo information has been discovered during a study but is disregarded in the analysis and presentation"

(Gummesson: 1991, 160)

This is one of 9 criteria set out by Gummesson (the full list is the subject of further discussion Chapter 6). Combining Gummesson's approach to access and his detailed guidance on what should be included in the description of a quality case study, with Rowan (1981) and Reason's (1988, 1994) work on dialectic research cycles enabled me to see the 'good theory' that could unlock the process of MAKING SENSE and COMMUNICATION of the rich Fife material. It enabled me to systematise rather than suppress the dialectical paradoxes presented by the data.

Just as I was getting to grips with this new approach to the Fife data, I took a new job. The opportunity arose to pursue my interest in the development of Local Exchange Trading Systems in my 'home' system in Stirling on a paid basis. Despite the warnings of my supervisor I applied for and secured the post of Project Development Worker with the new 'LETS Make it Better' LETS and mental health project. I undertook the post on job-share basis believing this would leave me ample time to complete my thesis. However, I had underestimated how demanding I would find the work in terms of hours of commitment required and the challenge of building a new project with a community of people facing severe and enduring mental health problems. It appears that I do not have a monopoly on such decisions. Pugh (1994) in addressing 'How Not to Get a PhD' identifies:

> "Taking a *new* job before finishing is a way of not getting a PhD. At the very least it will put off completion for several years (in our experience six to eight years and more), until the intellectual learning curve of the new job allows it."
>
> Pugh (1994)

By December 1996 I had a 'complete picture' of the dialectic and hermeneutic approach I intended to use to systematise the Fife data. However this took me a several years, and a move to a less demanding job, to actually write this up. Chapters 5, and 6 represent the fruits of this effort.