MAKING NEW ZEALAND STRONG

A discussion paper from the Sustainable Development Forum

11 April 2003

1. Summary

In *"The Government's Approach to Sustainable Development"* (August 2002), the Government described a wide range of activities across the government sector.

This document was followed by the *"Sustainable Development Plan of Action"* released by the Minister for the Environment on 31 January 2003.

These two are part of a series [1]:

> *... issued by the government to focus and reorient government policy and decision-making and processes. The others were Growing an Innovative New Zealand (the Growth & Innovation Framework) and Key Government Goals to Guide the Public Sector in Achieving Sustainable Development.*

The Sustainable Development Forum welcomes the contribution the government is making in this area. In addition, we would like to record our interest in the topic of development of policy for Sustainable Development (SD), and make suggestions as to how a strategy could be developed. To this end we have prepared this paper, both as a basis for discussion within our membership and also for use by government when considering this very important policy area.

In reviewing the above-mentioned documents, we respond with five key recommendations:

1. **Develop a National Strategy for Sustainable Development (NSSD) using the 'strong sustainability' approach**
2. **Consider and apply practical tools for measuring sustainability over time.**
3. **Establish a National Council for Sustainable Development (NCSD) responsible for developing leadership in sustainable development.**
4. **Re-write the Government's Draft Principles in line with 'strong sustainability principles'.**
5. **Obtain additional information in order to determine the most appropriate strategy for sustainable development**.

2. Background

At the initial Forum (SD Forum) held on 14th February 2002 at the Royal Society of New Zealand Office in Wellington, a steering group was set up to examine issues raised. That group in turn set up three subgroups to work on the issues. These reported back to the membership at the second SD Forum held at the University of Auckland, 28-29th November 2002.

One subgroup (responsible for the authorship of this paper) was created to review New Zealand SD policy, with membership Klaus Bosselmann, Rachael Brown, Annette Lusk,

Wendy McGuinness, Gael Ogilvie and John Peet (leader). We were subsequently joined by Bruce Glavovic, Carol Boyle and Jim Salinger.

We were initially given the task of examining Government (SD) policy in the lead-up to the World Summit on Sustainable Development (WSSD) in Johannesburg. In the event, the Government's final resource material for WSSD was not available in time for a considered response, so we decided our focus should move to the Government's SD proposals, initially published in August 2001 in draft form (*Proposal - New Zealand Sustainable Development Strategy*), then in August 2002 *(The Government's Approach to Sustainable Development*) and most recently in January 2003 (*Sustainable Development for New Zealand Programme of Action*). This discussion paper responds chiefly to second and third documents.

While members of the subgroup had specific concerns about some aspects of the Government's SD policy, our approach has been to provide a complementary vision to the Government, that incorporates the principles of Strong Sustainability together with a practical framework for further policy work. We applaud the Government's initiatives to date, and look forward to development of a cohesive strategy that shows how long term outcomes can be achieved via short to medium term objectives. This paper examines the current situation and considers how we can work to achieve long-term well-being for New Zealand and all New Zealanders.

3. Introduction

World-wide, there is a substantial level of concern about the deteriorating state of the total global environment and of many of the ecosystems within it. Alongside this is a parallel concern that, globally, human welfare is not improving at a rate such that the disadvantaged of the world can see some real prospects for improvement in their lot, let alone that of future generations.

Key to these issues is their strong and complex interconnectedness, linked by knowledge that the physical scale of economic activity in the world is almost certainly much greater than can be supported long term by the global ecological life support systems. This, the *problematique* of Sustainable Development, is probably the most important major policy issue of our time.

4. The New Zealand context

The NZ Government has been responsible over the last three years for promoting a shift from competition and reliance on economic growth alone, to include cooperation and a focus on sustainable development. There are six national goals, aimed at addressing the vision of *"... development of a prosperous and confident knowledge society ..."* [2]:

- *economic transformation;*
- *social development;*
- *Māori development;*
- *environmental sustainability;*
- *infrastructural development; and*
- *innovation.*

It is within this context that current NZ Government understanding of "development" and "sustainability" should be seen.

The government has made significant commitments to the philosophy and practice of sustainability, supporting the concepts developed in *The Government's Approach to Sustainable Development* and the *Sustainable Development for New Zealand Programme of Action*. Some quotations in this context follow:

> *New Zealand has made great strides in achieving sustainable development, particularly over the ten years preceding the World Summit on Sustainable Development, to be held in Johannesburg this year. Ten years after the United Nations Conference on Environment and Development, we can be assured that the founding concepts of sustainable development have been widely accepted - most New Zealanders now know of the importance of balancing social, economic and environmental objectives.*
>
> (The Prime Minister's Foreword to a draft document assessing NZ's sustainable development over the last decade, published in June 2002 [3])

> *The New Zealand government .... is committed to a comprehensive policy programme which is environmentally, socially, and economically sustainable. Central to that approach are partnerships with all sectors of society, taking a long term view of issues, and taking into account the effects of actions on all dimensions of society - social, cultural, economic and environmental.*
>
> *New Zealand accepts the international challenge of achieving sustainable development. In the past, we have tended to take for granted that we have a clean green environment and that that would always be the case. It is now recognised that a sustainable future does not just happen.*
>
> (Minister for the Environment, in the country report presented at WSSD in Johannesburg [4])

> *... the government is committed to ensuring that New Zealand is at the forefront of international efforts to be economically, socially and environmentally sustainable.*
>
> *The central issue is how we achieve sustainable economic growth in a manner which enables us to improve the wellbeing of all our peoples without compromising the quality of the environment.*
>
> (The Prime Minister, in a press release accompanying publication of The Government's Approach to Sustainable Development report [5] (August 2002), shortly before the WSSD in Johannesburg)

> *... priorities ... such as economic growth, the implications of international population change for New Zealand, decoupling of economic growth from environmental harm, governance for sustainable development ....*
>
> (The Minister for the Environment, in her Foreword to The Government's Approach to Sustainable Development, August 2002)

Definitions of sustainable development have also been articulated by the government:

> *Development is sustainable when it achieves stable or increasing wellbeing over time for both people and the environment.*
>
> [SD is] *"... an approach to decision making rather than an end in itself"*, [and further, there are] *"... two important guides to understanding sustainable development."*
>
> *The first is a series of draft principles, which set out the government's approach to what sustainable development means in more detail. The government proposes that when it comes to a decision, it should be possible to check whether these principles have been applied to a decision.*

The second is the government's vision for New Zealand, which was first used in the Growth and Innovation Framework. This is where the government wants sustainable development to take us.

(From *The Government's Approach to SD*)

"... growing our economy is vital for the social growth of New Zealand"..... "But the growth we have must be sustained over a number of generations." .... *"The initial focus is on water quality and allocation, energy, sustainable cities, and child and youth development."*

(Minister for the Environment, *The SD for NZ Programme of Action*)

The *Programme of Action* identifies a vision for New Zealand and specifies a programme of action which focuses on four major issues – water, energy, sustainable cities and child and youth development. In addition, six government goals to guide the public sector in achieving sustainable development have also been drafted [6]. These are:

- *Strengthen national identity and uphold the principles of the Treaty of Waitangi*
- *Grow an inclusive, innovative economy for the benefit of all*
- *Maintain trust in government and provide strong social services*
- *Improve New Zealanders' skills*
- *Reduce inequalities in health, education, employment and housing*
- *Protect and enhance the environment.*

The vision itself does not provide an underlying strategy for achieving sustainability; rather it relies on each sector of the government understanding its role in the vision and the Programme and incorporating it into a unified whole.

Most government agencies have produced their own vision of sustainability, some of which are in opposition to or divergent from that stated in the *Programme of Action*. The vision presented by FRST for their Sustainability Portfolio, for example, provides a much more comprehensive view of a sustainable future than that presented by the *Programme of Action*. On the other hand, the Treasury's *Briefing to the incoming Government 2002 Growing Higher Living Standards for New Zealanders* [7] contains seriously-misleading statements such as:

A 'strong' view of sustainability argues for conservation of natural resources based on the assumption that there will be little or no technological progress or substitution opportunities in the future.

which results in the following statement which threatens implementation of sustainability:

Harmonising growth and environmental objectives is therefore likely to remain an ongoing challenge. One of the best ways we think we can address this is by trying to make environmental policy as growth-friendly as possible.

5. The Current Practice of Sustainable Development in New Zealand

In his August 2002 report [8], the Parliamentary Commissioner for the Environment (PCE) asserted the centrality of the concept of Strong Sustainability, namely that the primary requirement of SD policy is recognition that:

... to function in a sustainable way we must not exceed the capacity of the biosphere to provide for, and absorb the effects of, human activities.

... human society and the economic activities within it are totally constrained by the natural systems of our planet. The economy may expand or contract, and society's expectation and values may change over time, but to function in a sustainable way we must not exceed the capacity of the biosphere to provide for, and absorb the effects of, human activities.

In this context, the Local Government Act 2002 has some important aims, including in Section 3 (d), that the Act:

provides for local authorities to play a broad role in promoting the social, economic, environmental and cultural wellbeing of their communities, taking a sustainable development approach.

At this time, however, it is not clear whether there are any unequivocal scientifically-informed benchmarking techniques available to local authorities, to assist them in identifying or "... *taking a sustainable development approach*", let alone whether such an approach adequately reflects strong sustainability.

The policy issue was addressed by the PCE [9] in 2002, in what was on the one hand a sober and detailed account of progress on SD since the 1992 Rio Earth Summit, and on the other a very clear "wake up" call to the NZ Government. The report made the points that:

... although there are some major gaps in our progress towards SD, there have also been successes ... The big gap in thinking, planning and taking appropriate action until 2000 had been in central government.

An important part of the progression towards more sustainable development is the need for society and governments to clearly recognise the difference between 'environmentalism' and 'sustainable development'. The first can be defined as activism to protect nature from the ravages of the economy while the second is about redesigning the economy itself. Put another way, environmentalism can be considered a movement against pollution, degradation and serious loss of nature while sustainable development can be considered a movement towards new action and behaviours. Until the late 1990s the dominant focus in New Zealand has been 'environmentalism'. We are only now beginning to make the transition to sustainable development and it is generating tensions.

A scan of statutes that cover social and economic matters revealed that none of them incorporated the concept of sustainability, indicating that sustainable development may be perceived and categorised as only an environmental management issue.

6.0 Theory and practice - some concerns

In our opinion, the aims of the Government's approach and programme are admirable, and recognition of the vision and principles most encouraging. Each part, and each of the initial focus items, is important and relevant.

Nevertheless, as people who have been involved in SD research for, in some cases, up to 25 years, we on the sub-committee have a number of important concerns, as follows:

- Economic growth, of itself, does not automatically correlate with improved wellbeing for

all. There is evidence that, over recent years, any correlation that may have existed in the past is much less obvious today;

- Decoupling of economic growth from environmental harm offers considerable advantages in the short term but is severely limited by technological possibilities in the longer term;
- Our current western capitalist system requires business to meet financial objectives only – otherwise entities would be penalised by the market and not sustainable. This encourages inequitable development, greater consumerism, and processes/systems that do not take account of environmental and social impacts. To allow for consideration of environmental and social performance – and hence move closer to a sustainable future - will therefore require a fundamental rethink of our current systems. We need a financial and regulatory regime that provides incentives for environmentally and socially responsible behaviours.
- Sustaining economic growth over a number of generations, while at the same time decoupling it from environmental harm, involves assumptions about technological possibilities that appear to contravene well-known laws of physics;
- Addressing issues in apparent isolation discourages a whole-systems approach to SD that would allow for identification of priorities and give early warning of unsustainable trends;
- The difficulty with the government's stated SD policies is that, while both vision and principles are clearly enunciated and entirely commendable, there is no explicit or implicit evidence as to whether they are in fact attainable, whether physically, technologically, economically, socially or environmentally.

The approach being adopted by the Government seems to be one of laudable and well constructed objectives and principles, together with some high priority projects. The fundamental "systems" thinking, however – about how we currently pass laws, generate taxes, improve and regulate performance for both our private and public sector entities - is not addressed within the currently available public statements.

As economist Clive Hamilton commented at the ECO conference last year [10]:

> *We're often told and it's simple to believe, that we can have it all - economic growth and the environment if we do it cleverly. It's a convenient view for politicians and business people who say they're committed to sustainability. But there is certainly a conflict between economic growth and environmental protection.*

A review paper by the economist Paul Ekins made a similar point [11] a few years ago:

> *Achieving this technological transformation, however, and being able to respond further should it prove insufficient to adequately reduce environmental damage, depends in my view on two radical shifts in orientation: the adoption of ecological sustainability as the principal economic objective in place of economic growth, and the development of a new accounting system to reflect the ecological contributions to and impacts of economic activity, and to clarify the relationship of production growth to economic welfare.*

In addressing these questions, it is reasonably well known that each independent government policy goal needs an independent policy instrument. In the context of this paper, there are actually three critically-important independent policy goals facing world governments today; *allocation, distribution and scale* [12]. The three goals (the ends) must be clearly distinguished from each other, and from the policy instruments (the means) available for each of them.

- *Allocation* is the process of linking the supply of goods and services to the demand for them. It may be achieved by several means, including sharing or rationing. Where appropriate and where properly harnessed, however, competitive markets are usually both simple and economically efficient means to this end.
- *Distribution* is an ethically-driven end, in that it reflects a society's attitude to social - including intergenerational - justice. Social welfare, education and health are areas in NZ where direct or indirect income transfers are used to provide services to citizens.
- The third issue, that of *Scale*, has been largely absent from government policy in the past, and remains one which is usually considered to be "too hard" (as illustrated by, for example, Auckland's growth management problems and recent Government moves to spend large amounts on motorway construction). It reflects the fact that all activities of society involve the use of resources and production of wastes. To avoid damage to the web of life, and therefore to human society, the volume of wastes must be kept within the absorptive capacity of the natural environment into which they are dumped (see below).

The most appropriate policy answer to the issue of scale is the relatively simple one of reducing flows of raw materials used by an economy, thereby reducing outflows of waste and pollution from it. The most direct means is to concentrate on the use of fuels such as coal, oil and gas, since they are directly polluting and intimately related to other pollution from industries. Related means address the use of water, air, soil and other critical resources. This approach demands a drastic improvement in resource productivity, so that much more economically-useful output is obtained from a given quantity of physical resource input.

One response has been the call for an "environmental Plimsoll line", analogous to that which defines an absolute limit to the load which a ship can carry. The ship's load can be well or badly balanced, even when the water line is well below the Plimsoll line. But if the water line is above the mark, rearranging the load in an optimally-efficient manner will be of little help. Arguably, those who are obsessed with allocation (the function of competitive markets) to the exclusion of scale deserve the criticism that they are rearranging deck chairs on the Titanic.

The economist Herman Daly put forward two rules to describe the relationship of an economy or a project to its environment, if strong sustainability (i.e. genuine sustainability, rather than the outward appearance of, commonly termed "weak") is to be achieved [13]:

The Output Rule	*wastes ... should be kept within the assimilative capacity of the local environment:*
The Input Rule	*for renewables harvest rates of renewable resource inputs shall not exceed the regenerative capacity of the natural system that generates them.*
	for non-renewables depletion rates shall equal the rate at which renewable substitutes are developed by human invention and investment.

Regrettably, NZ has little to celebrate, in terms of its current performance in relation to these criteria.

Following these rules in most situations will require a phase-in period. That period should not be too long, since it is urgent to reflect them in economic policy development and achieved outcomes as soon as possible. Since the rules reflect physical criteria, it is also clear that the physical and natural sciences, together with engineering, are the central professions involved in

their implementation. (The Natural Step™ organisation has developed closely-related criteria to assist firms in developing policies to reflect the rules)

The following simple equation, due to the ecologists Paul and Anne Ehrlich [14], has been suggested as a useful general tool for addressing long-term issues of economic growth.

Total Social Impact = Population * Affluence * Technology Impact

or **I = P*A*T**, where Population (P) is expressed as a number; Affluence (A) as consumption of resources per person (R/P), commonly GDP per capita; and Technology Impact as the per unit amount of resource used (I/R) by an appropriate function, perhaps primary or fossil energy consumption per unit of GDP (which can be directly related to e.g. pollution emissions).

With today's values indexed to 1, this simplifies to the reference situation: I = 1*1*1 = 1

To illustrate the use of this equation, assume that we in New Zealand proceed along conventional lines of development, with 4% annual increase in GDP (as proposed by the main political parties) compounded over the next 25 years. Assuming no increase in population and no improvements in technology, the Social Impact 25 years hence will be around $(1 + 0.04)^{25} = 2.7$ times current levels.

Put another way, if we want to keep the total Social Impact constant at today's relative level under those conditions, then Technology Impact will have to improve (i.e. reduce) at the same 4% annual rate as Affluence is increasing, ending at a value of (1 divided by 2.7 =) 37% of today's level.

Technologically, significant improvements are indeed achievable in the short term, but are subject to severe limitations in the long term. Nevertheless, there is a vital point that science and engineering can contribute to the discussion. It is, that if continued growth in Affluence (A, e.g growth in GDP) is to continue "*... over a number of generations ...*", then the ability of technological improvements to reduce Technology Impact (T) to an extent sufficient to stabilise Total Social Impact (I) will steadily and inevitably decline. This is due to inexorable laws of physics. The result will be increased Social Impact and further reductions in sustainability.

Integration of the environmental, social, economic and other dimensions of SD is a complex process, where the social and economic dimensions exist within, and are at all times subject to, constraints set by the (physical and biophysical) laws of nature. The relationship between the three sectors is, in reality, not a simple one among more-or-less autonomous equals, but one that is extremely complex, highly dynamic and rapidly evolving. Perhaps most important of all, the relationship is of a hierarchical nature, in which society exists as, and only as, a sub-set of the environment of New Zealand (itself a subset of the global ecosystem of Planet Earth), and the economy, in turn, exists as a sub-set of society. This perception reflects the biophysical scientific basis for the principle of Strong Sustainability.

Both economy and society depend upon physical resources - ultimately all derived from the environment - and reject wastes back to that same environment. This functional relationship is fixed by immutable laws of physics. The ability of technology to reduce the physical inputs and waste outputs of production of goods and services is substantial, but is nevertheless inherently limited by the physics of production processes.

At a time when overall government policy (and that of business and trade unions) is resolutely one of continued economic growth, "eco-efficiency" or "green production", while helpful in

the short term, can do no more than give a breathing-space, if growth in the output of goods and services for "... *a number of generations*" remains the *sine qua non* of government policy. Using terms such as "smart growth", "balanced growth" or "sustainable growth", while appealing, are means to avoid facing up to reality.

It is this limited understanding of the meaning of "development" as growth in GDP that is the central problem (although recent reported comments by the Prime Minister at the Knowledge Wave Conference in February 2003 indicate that this perception may no longer be dominant, in that the old ways of looking at economic growth are beginning to be seen as outdated). It remains a problem from which technology cannot rescue us. As the Executive Director of the New Economics Foundation in the UK pointed out recently [15], in a response to the inadequacies of current economics: "*It's time to adopt new models of prosperity*."

Concepts such as "Triple Bottom Line" (TBL) or notions such as "balanced approach", while admirable in their intentions, will only take us so far. For many organisations there may be some additional win/wins - producing better financial results at the same time as being more environmentally or socially responsible. Increased energy efficiency will, for example, be environmentally beneficial and save money.

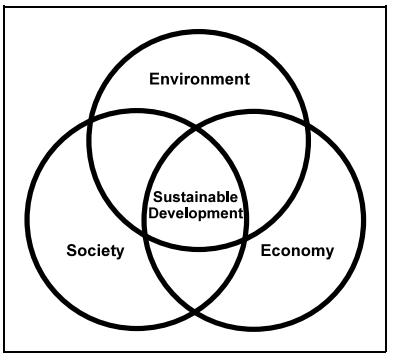

Figure 1 - Weak sustainability

The TBL approach to organisational performance is still, however, "playing around the edges" and cannot be expected to result in a sustainable future. This approach - also known as Weak Sustainability, is illustrated in Figure 1. TBL implies that one can set off "costs" in one area against "benefits" in another, thereby obtaining a "balance" between them, and still achieve "win-win" for the whole system.

In practice, the economic dimension normally takes precedence over the others, implicitly on the assumption that economic benefits can be set off against environmental costs. This is illustrated, semi-humorously, in Figure 2.

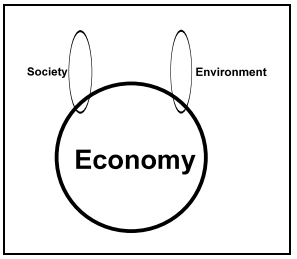

Figure 2 - The usual situation?

The weak sustainability approach largely ignores the hierarchical interrelationships, interconnections, feedbacks, nonlinearities and discontinuities that exist between the parts of the real, complex open system and hence fails to reflect the consequent scientific complexities and indeterminacies involved with addressing issues of sustainability and of development.

Strong sustainability, on the other hand, affirms the need for a fair distribution of resources and opportunities between current and future generations, but also emphasises the basic hierarchical relationship, that this must occur within a physical scale of economic activity that preserves the underlying (and unsubstitutable) ecological life support systems. Figure 3 (drawn similarly in the PCE's report) also incorporates Mitchell's proposals for the technical disciplines involved [16].

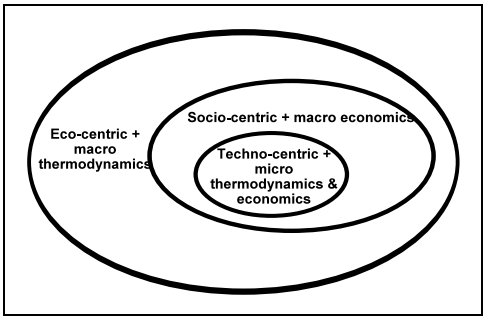

Figure 3 - Strong sustainability

In order to get to the stage of examining possible means to the ends of social justice and scale, it is obvious that the ends have to be determined first. We must not look to markets (allocative tools) until we

have first clarified such questions as the desirable extent of income transfers (distribution), and by how much to reduce energy and resource flows (scale). These are, in our opinion, ethical questions to be answered by the people, with economists, ecologists and engineers involved as expert consultants in a community-wide process.

The complexity of the overall problem was described by Ekins when he pointed out [17]:

> *The debate about economic growth has focussed attention on three extremely important sets of questions, which remain unanswered and extremely relevant today, concerning the current level and likely future increase of human economic activity. These questions are:*
>
> *(a) Is such activity having an environmental impact which, at best, reduces the economic possibilities in the future and, at worst, is likely to precipitate widespread collapse? (The ecological sustainability debate.)*
>
> *(b) Is such activity generating a range of negative social and environmental effects that actually outweigh many of the benefits of current affluence and of its nominal increase? (The welfare-from-growth debate.)*
>
> *©) Is such activity in market economics producing intense competitive and individualistic pressures that not only prevent individuals from enjoying their affluence, as in (b), but also undermine the cultural and moral fabric of society on which the economy itself actually depends? (The social sustainability debate.)*

To our knowledge, none of these questions has yet been conclusively answered in the negative.

In its current SD policy initiatives, the government is clearly trying to address all three. Question (a), however, while considered seriously at such fora as WSSD, is still treated as if it exists independently of, and in some senses is subservient to, the issue of economic growth, with the implication that by making claims that one has policies for "*decoupling of economic growth from environmental harm"* the question is adequately addressed.

Whether all three facets of growth are practically - as opposed to theoretically - achievable, individually and/or collectively, is still, and is likely to remain, a matter of dispute. It is probable that it can only be resolved by a root-and-branch integration of (a) ecological science, expressed (*inter alia*) in environmental and resource accounts, (b) economic indicators, such as those incorporated in national and corporate accounts, and (c) social indicators relevant to ethical issues such as equity and social justice. This could be one of the key initial tasks of the proposed National Council (or Advisory Body) for Sustainable Development (NCSD) described in the associated paper presented to the SD Forum.

As Ekins points out [18], approaches to these questions *also:*

> *... provide an opportunity to invest the term 'sustainable development' with some deeper human, social and institutional significance, which may prove as important to its realisation as the mere development of and implementation of eco-technologies.*

7. Achieving Sustainability in New Zealand

While the opportunity for environmental management and managing matters of national importance exists within the Resource Management Act, successive governments in NZ have been and still are reluctant to grasp the nettle and start seriously addressing some of the

systemic issues that prevent the country as a whole from treating SD as the cornerstone of long term strategy. The Local Government Act 2002 is intended to be a significant development in this respect, but despite the good words and intentions, realistic policy responses to go beyond what the PCE refers to as "*... environmentalism ... as a movement against pollution, degradation and serious loss of nature ....*" to achieve "*... a movement towards new action and behaviours.*" [19] are not.

In this context, the claim [20] in the Government's *Programme of Action*, that it "*.... takes into account the PCE's report ....*" appears to be directly contradicted by the subsequent statement "*But the growth we have must be sustained over a number of generations. Therefore, we need to plan for that growth so that we don't add to our problems.*"

In practice, however, most politicians, while acknowledging the old saying that "a week is a long time in politics", do accept the need to develop policies for the medium term. The commonly-used units of finance, however, following the arithmetic of compound interest (e.g. via the positive discount rates used in economic analysis) effectively constrain the time frame of interest in economic policy development (and implicitly, Treasury's time frame) to at most 10-20 years and usually very much less. But issues of sustainability extend over generations, and involve time periods of 50-200 years and more. This is implicitly acknowledged in the *Programme of Action*'s reference to the idea that "*.... the growth we have must be sustained over a number of generations.*" For this reason, conventional political-economic perspectives need extension via scientifically-informed opinion, alongside community-generated moral and ethical insights.

Most people are familiar with the WCED (Brundtland Commission) definition that refers to *"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs".* This definition is almost universally adopted, and is vague enough to be all things to all people.

In order to move forward, we need to take the next step, which requires systematically setting out the path to SD, with achievable milestones being the signposts on the road. These milestones must be measurable, verifiable, comprehensive and agreed government policy. Without such milestones; we will continue to hide behind a strategic direction rather than a strategy to develop a co-ordinated and measurable approach to sustainable development. In this context, the recent experimental report by Statistics New Zealand [21] is a useful contribution, but needs more work and wider consultation (both of which are already under way), before becoming part of the journey towards sustainability.

A weak sustainability approach is implicit in these reports and in the *Draft Principles*. In our opinion, the Government needs to expand its thinking to move away from the notion that the environment is the *"... natural resource base of economic and social development"* (as implied in the heading of Chapter 6 of *The Government's Approach to SD*).

This reductionist view implicitly reduces the complex web of life on this planet to a subsystem, with Nature the extractive and waste disposal sector of an ever-growth economy, all implicitly there to satisfy the requirements of a single species, humanity. It is illustrated in Figure 4 (after Daly [22]).

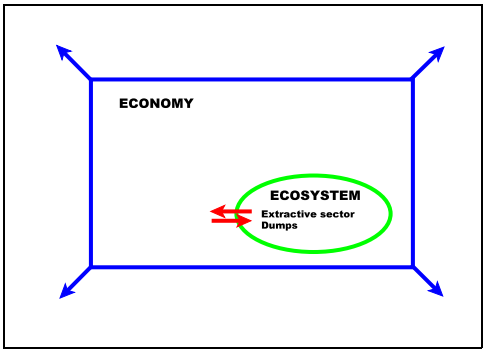

Figure 4 Ecosystem seen as a subsystem of the macroeconomy

In this model, and within the mindset from which it

comes, it is not even obvious that there could be such a thing as *uneconomic* growth of the macroeconomy (i.e. growth beyond a point at which total social costs exceed benefits). Growth (normally defined in terms of GDP), is the central aim of economic policy in virtually all countries, and the default expectation is for it to be continued without limit. This approach, typical of a generation ago, is in our opinion neither appropriate nor relevant to the needs and objectives of 2003 and beyond. It ignores the critical issue of incorporating the policy dimension of Scale into an environment dominated by policies of Allocation and Distribution.

Examples from *The Government's Approach to Sustainable Development* 2002:

- *The Government will take account of full environmental, social, cultural and economic opportunities and consequences in making decisions affecting the wellbeing of current and future generations in the following way*. (Emphasis added)

  [The statement then lists 8 aims [23], of which the first is] *We will seek to understand and consider the positive and negative long-term and short-term impacts across social, cultural, environmental and economic spheres in our decision making.*

  - The question then arises, how can one "*take account of full environmental, social, cultural and economic opportunities and consequences ...*" when one is still aiming to *"... seek to understand ..."*?
  - And in the real context of systemic complexity described above, and implicit in the appropriate aim to "*seek to understand*", how can one *ever* be sure one really understands a system of such complexity? These are not trivial questions for the sciences involved in sustainable development, and should not be sidelined or ignored by the policy development process.
  - The idea (p 10) that *"Development is sustainable when it achieves stable or increasing wellbeing over time for both people and the environment*", does not explain how the term "wellbeing" applies to the many complex (and in most cases, barely understood) components of the myriad of NZ ecosystems, which in turn are subsets of the global environment (that is, unless the environment is simply seen as a resource base as in Figure 4).
  - Priorities listed in the Minister's Foreword are *"... economic growth, the implications of international population change for New Zealand, decoupling of economic growth from environmental harm, governance for sustainable development, and implementation of the Local Government Bill*" (p 5). These are not independent from each other, but no clear framework emerges whereby they can be seen as parts of a coherent whole, let alone whether they are simultaneously achievable.
  - In Chapter 5, *"Sustainable Patterns of Production and Consumption"*, there is the acknowledgement that *"In line with all developed countries, New Zealand has shown a declining pattern of sustainability in most aspects of its production and consumption over the last ten years"* (p 29). As a response, the report points to *"Creating more innovation, more skills, more wealth"*, with specific attention to energy efficiency and renewable energy and giving as examples tourism, transport, forestry and fishing.

    While we agree, particularly with the two energy topics (energy efficiency and renewable energy), we note some important points that relate to these four areas:

- The jet fuel implications of the tourism industry make it among the most resource-intensive and (worldwide) most polluting sectors of all in the NZ economy (mainly, but not only, in the specific sense of greenhouse gas emissions) [24]. Simply encouraging "eco-tourism" within New Zealand does nothing to reduce the ecological footprint of each tourist's travel to, within and away from NZ.
- The *NZ Transport Strategy* [25] has, as one of five main objectives, *"to ensure environmental sustainability*". To achieve this, policies such as *"Reducing the impact of transport on the environment*" and following the *National Energy Efficiency and Conservation Strategy* [26] *Transport Programme Action Plan* are proposed. These all have the potential for significant improvement in the delivery of transport services with reduced fuel use and environmental damage, but none of them can be realistically claimed to be sustainable, particularly if associated with growth over "*... a number of generations ...*".
- Tree growth and harvesting are, in principle, sustainable. While a significant proportion of Forestry production is still relatively unprocessed and exported as such, an increasing proportion is processed within NZ to anything from sawn timber to books. It is well known that these processes are in most cases, far more resource-demanding than forestry itself. Even log exports have substantial transport requirements. So there is a sense in which Forestry cannot be separated, as a sector, from its downstream consequences of fossil fuel use, greenhouse gas emissions, air and water pollution and so on.
- Fishing is another example. The fishery ecosystem may be sustainable, but fishing vessels use very large quantities of fossil fuel, especially in deep sea operations, and there is no great likelihood of other than modest improvements in technical efficiency of the industry.

These examples show how important it is not to be over-ambitious about the possibilities for "*... decoupling economic growth from environmental harm ...*", and how important it is to think clearly through several levels of complexity before rushing to conclusions. It is not just the ecosystem, the forest or the fishery that must be sustainable, but humanity's use of them, and that is by far the greater problem..

- Economic growth is, from one point of view, a central plank of SD policy, via the clause (p 14) "*... if New Zealand is to achieve our economic objective of returning to the top half of the OECD per capita income ladder ....*". This implies the major policy objective that GDP growth must be increased, and the Treasury Briefing paper [27] devotes considerable attention to this idea.

  It is suggested that *"... high value innovation ...*" is the appropriate response, and no doubt this would be a valuable contribution. But the assumption that economic growth can be effectively decoupled from environmental resource use and associated harm via high value innovation or otherwise, in any really major way within a reasonable time scale, is technologically dubious. Auckland is an obvious example, where what is often claimed to be sustainability policy is in reality nothing more than growth management, and is highly unsustainable.

What is arguably more important is to reassess the measures of economic activity that purport to relate to social and cultural wellbeing and investigate replacement of current measures such as GDP by criteria (of which the Genuine Progress Indicator [28] is one) that are claimed to better measure the real flows of goods and services, at the same time correcting for the flows

of bads and disservices. Then we would understand whether technological innovation and economic growth are actually improving wellbeing and sustainability, rather than simply continuing current economic activity with some greenwashing (also see Ekins, op cit).

That changing the statistical basis for evaluation of "wellbeing" and "growth" would be a politically difficult task is something we would readily acknowledge. However, it is becoming increasingly clear that continuation along the present path of relying upon GDP and similar measures is virtually certain to be, long-term, destructive of the options for future generations. We believe there is no alternative, in that it is time to change direction, as the PCE put it, "... *towards new action and behaviours*."

In this context, it is worth noting that the central scientific and technological issues described above are not new. Probably the most influential of the experts who have put forward related arguments to our own are von Weizsäcker, Lovins and Lovins, in their book "Factor Four" [29]. In an analysis of the "Limits to Growth" debate they make the comment:

> *They are right in saying that efficiency won't be enough. If exponential growth* [in GDP] *goes on at a rate of 5 per cent per annum, the entire Factor Four efficiency revolution would be eaten up within less than 30 years!*

Similarly, in the follow-up book "Natural Capitalism", by Hawken, Lovins and Lovins [30], is the comment:

> *Eco-efficiency, an increasingly popular concept used by business to describe incremental improvements in materials use and environmental impact, is only one small part of a richer and more complex web of ideas and solutions. Without a fundamental rethinking of the structure and the reward system of commerce, narrowly focussed eco-efficiency could be a disaster for the environment by overwhelming resource savings with even larger growth in the production of the wrong products, produced by the wrong processes, from the wrong materials, in the wrong place, at the wrong scale, and delivered using the wrong business models. With so many wrongs outweighing one right, more efficient production by itself could become not the servant but the enemy of a durable economy.*

Hawken et then describe four principles that are very valuable pointers to a way forward. Regrettably, these seldom get as much attention as eco-efficiency in the popular press, but need to be treated as of probably greater importance, long-term.

Examples from the Government's *Sustainable Development Programme of Action*, 2003:

- *The programme highlights the importance of thinking differently and taking into account the economic, environmental, social and cultural dimensions of issues when we are making decisions.*
- *Economic growth through the Growth and Innovation Framework is the government's goal and sustainable development is the way in which we will reach that goal. The Sustainable Development Programme of Action and the Growth and Innovation Framework support each other. We are talking about the quality of growth.*

Despite the good intentions explicit in the first quotation above (with which, incidentally, we warmly agree), the second quotation confirms that "... *thinking differently*... " remains firmly within the old framework of weak sustainability, which, as discussed above, is inherently incapable of delivering real sustainability.

- *Partnership is at the heart of the government's approach, because we recognise we cannot achieve sustainable development on our own. We are inviting other sectors and enterprises to share the path to our common future.*

  This gives local authorities a mandate to take the lead in achieving sustainable development locally.

  There will be greater integration across the government sector when policy is being developed.

  ... sustainable development is at the core of all government policy.

Again, we warmly support the words used in these statements. However, the weak sustainability framework within which they are expressed detracts considerably from their relevance, and, in our opinion as expressed above, makes them inherently incapable of achieving real sustainability. That there will be improvements in key indicators as a result of the four specific policies described in the *Programme of Action* (water quality and allocation, energy, sustainable cities and child and youth development) is both to be expected and to be applauded. But the concentration on them to the exclusion of a framework that fully integrates them into an overall "big picture" that is scientifically-supportable as well as ethically-driven is a long way away.

9. Where To From Here?

As a means of initiating discussion on the issues raised above, it is important to recognise that what we are implying, by concentrating on strong sustainability, is a radical change in the way we as a society run our affairs, personally, locally, nationally and internationally. That this is in response to a sense of urgency about addressing the worst examples of global and local environmental, social and economic concerns is important. Perhaps more important for policy purposes is that it also implies the urgency of reassessing our goals as a nation, and in particular changing the way we assess the costs and benefits of what we do (the *"... structure and reward system of commerce ..."*, as Hawken et al describe it, quoted above), when used as guides to action.

<u>Recommendation 1</u>: Develop a National Strategy for Sustainable Development (NSSD) using the 'strong sustainability' approach.

Mainstream viewpoints (especially those of economics and ecology, but including sociology and technology) appear to be at loggerheads with each other in interpreting whether any particular form of development is indeed sustainable, let alone how to measure it using criteria of generally-agreed scientific validity. In the meantime, the hegemonic power of (Treasury) neoclassical economic thinking remains in charge, as illustrated in its 2002 Briefing paper. Under these situations, it is perhaps not surprising that government still puts the economy at the centre of national focus, apparently not realising that a successful economy can only be obtained as a natural outcome of a healthy, educated society, and that both rely for sustainability on a healthy and carefully stewarded environment.

In order to be able to know whether New Zealand is making an improvement in sustainability, in particular whether the strategy is producing the desired outcomes, it is imperative that practical tools be identified and used for measuring results. There continues to be debate over the relevance of GDP as a measure of performance, and there is increased questioning about

whether a modified GDP formula could be beneficial, or to what degree other tools (e.g. developed from the Statistics NZ report) could be used to provide more comprehensive and appropriate feedback mechanisms to decision makers and the public. This, too, is acknowledged by the government, for example via the above-mentioned comments attributed to the Prime Minister at the recent Knowledge Wave Conference. It is also referred to in the *SD Programme of Action*, where it is claimed that the Statistics NZ "*... indicators will provide us with a more broadly-based measure than GDP, and will inform the development of future programmes of action*".

Recommendation 2: Consider and apply practical tools for measuring sustainability over time.

It is imperative that the Government applies intellectual leadership and stewardship in order to escape the limitations of current approaches. We would envisage this independent thought being accessed by creating a Taskforce such as a NCSD (below), similar to that currently being applied in the areas of innovation and biotechnology.

Recommendation 3: Establish a National Council for Sustainable Development (NCSD) responsible for developing leadership in sustainable development.

The associated paper for this SD Forum, "*Proposed Terms of Reference for a National Council (or Advisory Body) for Sustainable Development*" expands on this recommendation in detail.

Recommendation 4: Re-write the Government's *Draft Principles* in line with "strong sustainability" principles.

To date, the Government documents provide no clear evidence that the strong sustainability meaning of SD is fully understood.

Recommendation 5: Obtain additional information in order to determine the most appropriate strategy for sustainable development.

In order to determine the most appropriate strategy, a considerable amount of relevant and timely information must be collected and assimilated. To this end, we raise a number of questions that we consider may help scope out both the problem and the solution. It is our hope that these questions may provide a framework for further consultation, ideally via the proposed NCSD and in close consultation with Statistics NZ.

1. **The Past**

   What have been the trends regarding NZ's economic, social and environmental capital over the past twenty years for each sector? What processes are causing direct and indirect damage to the quality of the environment, economy and/or social and physical health? What are the current "costs" of environmental degradation?

2. **Scenario Analysis - Status Quo**

   What effects can be foreseen from continuation of current trends over the next twenty years? How far can we expect substitutes for these damaging activities (e.g. efficiency improvements or changes in consumer demands) to occur "automatically", that is, without

policy intervention? Under what assumptions? What potential do they have for replacement of damaging activities within the twenty-year time span?

3. Scenario Analysis – Policy/Regulatory Options

What policy/regulatory options are available to the NZ Government, in order to maximise the net effects? It would be valuable to consider these effects in terms of weak sustainability and strong sustainability outcomes.

4. Assessing scenarios

What would be the costs and benefits of each option in terms of: Economic growth? Consumption? Employment? Equity? Health? Biodiversity? Resources?

5. Deciding the optimal scenario – public commitment

To what degree are New Zealanders prepared to pay the costs for the benefits (identified in 4) above) of creating a sustainable future? Are New Zealanders sufficiently informed about the real costs and benefits to make the necessary choices?

10. Implications for a National Strategy for Sustainable Development (NSSD)

(See associated paper to this SD Forum: *Proposed Terms of Reference for a National Council (or Advisory Body) for Sustainable Development*)

The most common framework in which these (and related) questions are discussed in other countries is a National Strategy for Sustainable Development (NSSD). The development of NSSDs resulted from the 1992 Rio Earth Summit, in particular AGENDA 21. To date more than seventy nations, including twenty OECD countries have adopted a NSSD in some form or other. New Zealand is not one of them.

- The Netherlands was the first country to adopt a strategy for SD (1989) and it has been consistently updated and implemented. The Dutch NSSD penetrates all policy areas and sets specific targets and timetables for incrementally shifting economic growth limitations to sustainability objectives.
- In the USA, the Report of the President's Council on Sustainable Development (1996) and the Strategy Plan of the Environmental Protection Agency (1997) initiated a number of new strategies aiming for SD.
- In Europe, all EU member states and several other countries have adopted NSSDs since 1997. In addition, the EU adopted the European Union Strategy for Sustainable Development in 2001.

Although NSSDs vary widely in scope and content, most of them were not imposed by Government, but resulted from extensive SD dialogues within society. The ‘bottom-up’ approach seems typical.

Even a rough comparison with other countries shows that New Zealand has fallen behind the international trend. After being among the world's first countries to adopt a more principled approach to environmental decision-making (Resource Management Act 1991), very little has been done to build on that and initiate a public debate on SD.

Failures on the part of the NZ Government include the following:

- It has never produced or initiated a report analysing the current situation and addressing e.g. questions 1 to 5 above in Recommendation 5 (a National Report);
- Until very recently, Government had no inter-ministerial arrangement for a SD strategy (a prerequisite for a NSSD). While the *SD Programme of Action* is a step forward in this respect, it has a long way to go to satisfy the needs of a strong sustainability SD policy;
- A NSSD does not yet exist, and the recent reports on the *Government's Approach to SD* and the *SD Programme of Action* make no mention of involving civil society in a process that would be a prerequisite for a NSSD, other than "partnerships" with local government, mayors and "appropriate Maori authorities".

A first step towards a NSSD was taken by the release of the PCE's report last year. While the report identifies deficiencies of the past and recommendations for the future, it cannot replace a National Report. Such a report would require a comprehensive and detailed analysis that can only be provided by experts and representatives of civil society groups. Most European countries produced National Reports of such nature before embarking on NSSDs.

A NSSD cannot be successful unless negotiated by all sectors involved. This is one key lesson to be learned from other countries. In the case of Germany, for example, the Government initially appointed a National Committee for Sustainable Development of chosen experts (mainly scientists), designed to make recommendations. This Committee lacked credibility among the various stakeholders. That is why, in 2001, a new Council for Sustainable Development was established, this time representing all major sectors of society and independent expertise. The Council successfully negotiated a NSSD with Government and now monitors its implementation; the acceptance of the NSSD within society was greatly enhanced.

In conclusion, the NZ Government has some way to go to advance a credible SD policy or NSSD. Currently, it lacks a practical framework to acknowledge the principles of Strong Sustainability. The SD Forum, while strongly critical of some aspects of current Government policy, is ready and willing to offer substantial support to any moves to extend and improve current policies.

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