Measuring progress – an ABS approach

Introduction – why the ABS developed Measures of Australia's Progress

The past decade has seen growing public interest in assessing whether life in Australia and other countries is getting better, and whether the level of (or pace of improvement in) the quality of life can be sustained into the future. Although most regard Gross Domestic Product (GDP) as an important measure of progress, there are many who believe that it should be assessed in conjunction with other measures of progress. This is the prime reason the ABS looked for an alternative approach.

A national statistical agency like the ABS has an important role to play in providing the statistical evidence that will allow assessments of progress to be made by users – those who formulate and evaluate policy, researchers and the community. Through its publications, electronic releases of data and other means, the ABS provides a rich array of statistics relevant to assessing progress. But the very size of the information base means that it is not so accessible to many people. Moreover, most ABS products provide a window into one or a few aspects of life in Australia – say, health, education, income, water – whereas a comprehensive assessment of progress demands that these aspects of life are examined together.

One outcome of measuring and reporting on progress is to make sense of the world we live in. One of the purposes of using indicators to describe progress is that they represent key aspects of a complex reality in an informative way.

At the highest level, macro indicators can reduce the complexity of all the details and processes of the broad domains of national life to a few (seemingly) simple measures. A good example is GDP which incorporates all of the detail of national economic activity to single number which encapsulates the concept of economic growth. Because such measures are fairly easily digested, they can be useful in encouraging economic debate and they lend themselves to publication in the media.

However, to be truly useful in facilitating change, the development of such indicators must involve two other key players: researchers and government. The former group is needed to ensure a sound scientific basis for the concept or idea being measured, while the latter is needed to provide the assessment of social preference (through democratic political processes) and to, ultimately, develop and implement relevant policy.[1]

Measures of Australia's Progress (MAP) provides a digestible selection of statistical evidence that will allow Australians to make their own assessment of whether life in Australia is getting better. MAP is not intended as a substitute for the full array of statistics – indeed, the ABS hopes that many readers will be led to read our other publications on the aspects of society, the economy and the environment that particularly interest them.

There are many different views of what progress means and how it might be measured. Some issues that arise when developing a publication like MAP include –

- What core concept is being addressed by MAP?
- What model or other view of the real world underlies the statistical evidence presented in MAP? – in particular, how does MAP deal with the complex interactions within and between society, the economy and the environment?
- On what basis were the selection and presentation of statistical evidence decided? How did the ABS decide what aspects of national life should be included, and what statistical indicators should be used to encapsulate those aspects? What presentational model did the ABS adopt and why?
- Any assessment of whether life is getting better is unavoidably based on values and preferences, so whose values and preferences are reflected in MAP, and at what points during the writing (and reading) are they applied?

What is meant by "national progress"?

Progress is one of a cluster of related concepts that also includes wellbeing, welfare, quality of life, sustainability and even happiness.

- *Wellbeing or welfare*, which is generally used to mean the condition of being well, contented and satisfied with life. It typically includes physical, emotional, psychological and spiritual aspects of life.
- *Quality of life*, which is linked strongly to (sometimes as synonymous with) wellbeing and can also be used in a collective sense to describe how well a society satisfies people's wants and needs.
- *Sustainability,* which considers whether an activity or condition can be maintained indefinitely. Although it has most commonly been used when considering the human impact on environmental systems (as in 'sustainable fishing'), it can also be extended to economic and social systems.

The ABS provides statistics relevant to some of these concepts as they bear upon some aspects of life in Australia – see, for example, *Measuring Wellbeing* (ABS cat. no. 4160.0), *Australian Social Trends* (ABS cat. no. 4102.0) and *Environment by Numbers* (ABS cat. no. 4617.0).

The distinguishing features of MAP are that it adopts progress as its central concept and that it tries to take a comprehensive view of progress, embracing the social, economic and environmental aspects of Australian life.

MAP does not provide a tight definition of progress; rather its aim is to 'provide statistical evidence about whether life in Australia is getting better'. Some readers of MAP have argued that the ABS should make explicit its definition of national progress, and even that the ABS should describe the future state towards which Australia should be progressing. In the ABS's view, specifying such a desired future state would be inappropriate for a national statistical agency. It is, however, possible to say some more about the notion of progress that underlies the design of MAP. Also, as discussed later, different Australians have different views of what constitutes progress.

Different approaches to these issues might be taken by, say, a policy agency or an academic researcher or an interest group or a private citizen. This essay sets out the approach that the ABS thinks appropriate for a national statistical agency.

Notions of progress

Thinking about progress and allied concepts (such as wellbeing and the good society) has exercised philosophers from the time of Socrates. Answering the question 'Is life getting better?' is not straightforward. It is clear, however, that to understand progress one must examine many aspects of people's lives – their health, the quality of their environment, their incomes, their work and leisure, their security from crime, and so on. So progress is multidimensional. Moreover, the dimensions of progress are intertwined. To earn more income, people may need to work longer hours and so have less leisure time. Increased industrial activity may generate more money to spend on health care, but it might also lead to more air pollution and hence to poorer health.

For this publication, we have chosen to adopt progress as our primary concept. Progress here encompasses more than improvements in the material standard of living or other changes in the economic aspects of life; it also includes changes in the social and environmental areas. It encompasses:

- The major direct influences on the changing wellbeing of the Australian population.
- The structure and growth of the Australian economy.
- The environment – important both as a direct influence on the wellbeing of Australians and the Australian economy, and because people value it in its own right.

While most would agree on the desirability of progress in, say, health, work or environmental protection, there is no universally accepted view of the relative importance of these aspects of Australian life. This publication contains an array of objective measures of progress; readers can apply their own subjective valuations to decide whether that array of measures implies that Australia is, on balance, progressing and at what rate. The measures (or indicators) can be loosely associated with one of the three broad domains of progress (economy, society and environment), although some relate to several domains. But the number of indicators associated with a domain is not a measure of the domain's relative importance to overall national progress.

This publication focuses on aspects of progress that are, in principle, susceptible to some objective measurement (e.g. life expectancy and educational qualifications). We have tended to avoid indicators that are either intrinsically subjective (e.g. happiness) or, while somewhat more objective, do not at present have generally agreed measures (e.g. political freedom). These aspects of life are important to Australians, but they do not yet lend themselves to statistical expression. That said, the ABS acknowledges there is growing interest in life satisfaction (or happiness) as an important aspect of life in Australia and so this edition of MAP includes an essay which outlines some of the recent research into life satisfaction and the issues associated with its measurement.

Various temporal perspectives are provided within the publication. The major focus is on the history of progress over the past ten years in key economic, social and environmental aspects of Australian life. But a snapshot of the current (or, more strictly, recent) condition of the Australian economy, society and environment is also provided.

We have not made forecasts or entered into any direct discussion of sustainability. But we have, for some aspects of progress, reported on whether Australian stocks of assets (human, natural, produced and financial, and social assets) are being maintained.

Many aspects of progress relate to one another, and it is important to understand some of those links when assessing overall progress. The issues of concern that are considered span important aspects of life in Australia and enable readers to assess the country's capacity to maintain a healthy economy, society and environment.

Approaches to measuring progress

Most attempts at measuring progress begin with a model or paradigm. A paradigm provides a context for the dimensions of progress that one is trying to measure. It helps to identify gaps in the available measures. It can also be used to place a given approach within the discourse on progress, welfare, sustainability, etc.

There are two steps to applying the chosen paradigm. First, one defines and applies a mechanism for choosing what aspects of progress are to be measured. Second, one decides how each aspect is to be measured and how the measures are to be presented.

Mechanisms for choosing aspects of progress

The ABS considered three broad approaches to choosing what aspects of progress to measure:

- Referring to international standards or practice.
- Referring to current policy issues and debates.
- Referring to the views of stakeholders and the general Australian public.

International standards or practice. Some international statistical initiatives, such as the United Nations' Human Development Index (HDI), consider only a very few issues of concern common to all nations and so take quite a narrow view. (The HDI uses life expectancy, education and command over resources needed for a decent living (income)

to assess development.) Others use a larger number of issues. But some issues of concern in Australia are almost uniquely Australian (salinity, for example, affects few other countries; and while much of western Europe is preoccupied with road congestion, this is not (yet) a major issue here – at least not when compared to the scale of congestion problems in the UK, for example). We examined international standards and publications when listing aspects of progress. But because of this publication's Australian focus, we did not judge it necessary to confine our list to aspects of progress for which international comparisons are possible. On occasion we refer to other countries' data when they are useful for setting Australian progress in context (in the area of health, for example), and an article compares some key progress indicators across OECD countries.

Policy issues. Some statistical initiatives aim to choose measures which relate directly to government policy – the European System of Social Indicators, for example. Many aspects of progress included in this publication are potentially useful for assessing policy. However, they were not chosen with that in mind. *Measures of Australia's Progress* is meant to inform public discussion of national progress, rather than be used as a scorecard for government policy.

Public opinion. Other projects in this field have asked the public about what aspects of progress should be measured. Approaches used or suggested include:

- Appealing to the choices and emphases expressed in current government policy (on the ground that policy reflects preferences expressed by the electorate).
- Using opinion polls and other attitudinal data to assess the relative importance that people place on different aspects of national life.
- Using polling or otherwise, to make a direct, summary assessment of whether Australians feel that life has got better or worse.

In the ABS's view, these approaches may be appropriate for other investigators and other purposes, but they are not appropriate for a national statistical agency.

We have not polled members of the public directly, but we have gathered broad views about what should be measured – first, by directly consulting stakeholders and experts in the fields of economic, social and environmental measurement; second, by distilling the views expressed during the ABS regular user group discussions regarding what data should be collected and published; and third, during a wide-ranging consultation process (in 2001 when the first issue of Measures of Australia's Progress was being written, and in further consultations after it was released). The second edition reflected changes arising from that feedback. To maintain consistency in reporting over time we have not made any major changes for this edition but plan to review the publication and progress indicators before the next full edition.

Whichever mechanism is used, it is important to remember that society's views of progress, and of what is important, change over time, and that there are also some aspects of progress – governance and democracy, for example – that are seen as important now, but for which there are no agreed statistical measures yet. The issue of ongoing statistical development is discussed in more detail at the end of this section.

Alternative values and preferences

Whose values and preferences	*Publication and author(a)*
Community priorities	*Tasmania Together*, Tasmanian Parliament
Government policy priorities	*The European System of Social Indicators*, The European Union
International priorities	*The Human Development Index*, United Nations

(a) See Appendix II for more information.

The treatment of values, preferences and emphases

Any overall assessment about whether life is getting better unavoidably appeals to values and preferences.

Most obviously, values and preferences are invoked when readers survey any body of statistical evidence and make their assessments about the direction and pace of progress. For example, faced with statistics revealing that the life expectancy of Australians has lengthened during the past decade, average income has risen and more land has been degraded by salinity, one reader may judge that there has been progress and another that there has been regress. Even if all or most Australians attached much the same relative value to different aspects of life, it would be difficult to arrive at a one-line or summary judgment about whether life has got better or worse. Arriving at such a one-line judgment would be even more vexed in the face of widely diverging values and preferences.

Some commentators on MAP have argued that issues of value and preference must also be faced by the writers of such a publication. How, for example, does one decide which aspects of national life should be included, or which statistical indicators should be used to encapsulate those aspects? How does one decide on the balance of the publication across the various aspects of national life? Choices of this kind must be made – otherwise, the ABS would simply point readers to the full array of statistical publications and invite them to make their own selection of evidence and assign their own weightings. Such a course may be suitable for experts, but would be unhelpful to most people.

Deciding how measures of progress should be presented

Three broad approaches to presenting the chosen indicators of progress were considered – the one-number approach; the integrated accounting approach; and the suite-of-indicators approach.

Alternative presentations

Presentation	*Publication and author(a)*
Suite of indicators	*Securing the Future*, United Kingdom Department of the Environment, Food and Rural Affairs
One number	*The Genuine Progress Indicator*, The Australia Institute
Integrated accounting framework	*SESAME*, Statistics Netherlands

(a) See Appendix II for more information.

The one-number approach combines data about progress across a number of fronts (such as health, wealth and the environment) into a single composite indicator. Such composite indicators can be set in contrast with narrower indicators such as GDP. The ABS considers that it is more appropriate for others to develop such composite measures (see box).

The accounting framework approach presents social, economic and environmental data in one unified system of accounts, measured in various units. Potentially this is a powerful tool for analysts, and a detailed set of accounts will complement indicators. However, such a complex system may be too difficult to interpret for anyone wishing quickly to form an overall view about Australian progress. Most importantly, Australia is still a long way from being able to develop such a system, although some environmental accounts (e.g. energy) have been developed to link the economy and the environment. The Dutch System of Economic and Social Accounting Matrices and Extensions (SESAME) is one of the most mature sets of integrated accounts – more details of SESAME are in Appendix II.

The suite-of-indicators approach sets out key aspects of progress side-by-side and discusses the links between them; readers make their own evaluations of whether the indicators together imply that Australia is on balance progressing and at what rate. This is the approach used in *Measures of Australia's Progress*. The approach makes no overall assessment about whether the array of statistical indicators presented implies that life is getting better or worse. Instead, the suite of indicators leaves each individual reader to apply their own values and preferences to the evidence, and to arrive at their own overall assessment of national progress.

The ABS already publishes sets of indicators relating to economic, social and environmental concerns. *Measures of Australia's Progress* brings together all three domains by providing a set of headline indicators of progress that are tracked over time. In our view, this approach strikes a balance between the potential oversimplification of the one-number approach and the complexity of the accounting framework approach. The approach has been used by other countries, for example in the United Kingdom where the government produces a publication *Securing the Future*.

One-number approaches to measuring progress

Although a good deal of effort has been put into trying to develop a single measure of progress (most notably the Genuine Progress Indicator, and the Human Development Index), consensus about the merits of the approach and about particular implementations still appears a long way off. There is no doubt that composite indicators are appealing. The demand for an alternative to that important indicator, GDP, is an argument in favour of a one-number approach.

However, difficulties arise when one wishes to combine several indicators into one number. The components of composite indicators are usually measured in different units – life expectancy (in years), income (in dollars), air pollution (in particles per volume of air), etc. Some compilers of composite indicators express the components in index form, then calculate a weighted or unweighted mean; others convert the components to a common unit of measurement, typically some estimate of their economic value or cost. But neither technique removes the basic issue – namely, that any composite indicator is based on some judgment regarding the relative weights to be applied to the components. Is a one-year increase in average life expectancy to be weighted more heavily than, less heavily than or equally with a 5% decrease in greenhouse gas emissions?

There is, therefore, a danger that a composite index will oversimplify a complex system and give potentially misleading signals.

There is still a debate about extending the scope of economic valuation into non-economic areas. Although attaching dollar values to changes in life expectancy, say, is usually done for methodological convenience, it might send the wrong signals. For example, E.F. Schumacher wrote, "To press non-economic values into the framework of the economic calculus...is a procedure by which the higher is reduced to the level of the lower and the priceless given a price".

Potential shortcomings of the suite-of-indicators approach

Although we adopted the suite-of-indicators approach, it is not without its problems.

- The choice of indicators could not be made using statistical criteria alone; it has required us to exercise judgment albeit based on the views of experts. Any of thousands of measures of progress could have been chosen, but we present just 14 headline dimensions, most of which use one headline indicator. Although we explain the criteria we have used to select headline indicators, there is an irreducible element of judgment, both in choosing the dimensions of progress to include and in choosing the statistical measures for those dimensions of progress.
- We have not included indicators for every aspect of progress that some Australians regard as significant. Some (such as a happiness indicator) are not included because such areas of progress are inherently subjective (although we do discuss the issues around measures of happiness and life satisfaction in a feature essay for this edition). Some (such as a single indicator for family and community) are not identified because there is not yet a consensus about the concept that one should measure. Some are not yet included because ABS data construction work or other statistical development is still in progress.

Choosing the progress indicators

The progress indicators presented in this publication were chosen in four key steps.

- First, we defined three broad domains of progress (social, economic and environmental).
- Second, we made a list of potential progress dimensions within each of the three domains.
- Third, we chose a subset of dimensions for which we would try to find indicators, and determined whether each would be a headline or supplementary dimension.
- Fourth, we chose an indicator (or indicators) to give statistical expression to each of those dimensions.

This was an iterative process and several steps were revisited after listening to the views of the many people we consulted during the publication's development. More information about our selection of dimensions and indicators is provided in the section – *A framework for measuring progress*.

Domains of progress

Most commentators consider that progress relates to issues clustered around broad areas of concern (*domains of progress*). Each domain in turn comprises a number of dimensions of progress. Domain boundaries can be drawn in several ways.

- The two-domain view: human concerns and environmental concerns.
- The three-domain view: economic concerns, societal concerns, and environmental concerns.
- The four-domain view: concerns about aggregate material wellbeing and economic development, society and equity, democracy and human rights, and the environment and nature.

In choosing measures for this publication we adopted the three-domain view, although in presenting the measures we have grouped them into four areas of progress. These areas relate to individuals; the economy and economic resources; the environment; and living together.

The choice of a view is largely a matter of convenience; the view is a tool to help choose or present the measures. The view we have adopted does not purport to be a model of a world in which the environment, economy and society can be separated. The three domains used in choosing the measures comprise one system: the economy depends on a functioning society which in turn depends on a functioning environment and economy. And although some concerns can, for the convenience of discussion, be attached loosely to the economy, the society or the environment, they are all of importance to other domains – education and training, and work, for example, are of both social and economic importance; air quality is of economic, social and environmental importance.

Dimensions of progress

To identify the major dimensions, the three domains were considered in detail and partitioned into a number of dimensions of progress to ensure that the important aspects of economic, social and environmental progress were considered.

Once a list of dimensions of progress that might be presented had been compiled, we selected the subset that would be presented. These were divided into headline and supplementary dimensions. A balance had to be struck – if we showed too many dimensions, readers would not be able to assimilate them; if we showed too few, important aspects of progress would be omitted, and the overall picture might be biased. Ten to twenty dimensions seemed about right, and the choice of those was guided by a wide variety of people from inside and outside the ABS.

Currently, MAP is structured around 14 headline dimensions which reflect key aspects of life in Australia. In addition, there are five supplementary dimensions, which although not given headline status are included in MAP in recognition of their relevance to the progress story.

During the design of MAP, we were guided by past and current ABS consultations. The ABS has a systematic program of consulting users of statistics about our statistical frameworks, surveys, products and analyses. Through this program, thousands of government agencies, academic researchers, businesses and business councils, community organisations and individual Australians have told the ABS what they think it is important that we measure. Our initial choices were tested through several further rounds of consultation undertaken specifically for MAP.

The final choice of measures was made by the ABS after taking account of the full spectrum of views. In so far as such selections are value-driven, they are distilled from the values and emphases expressed by the user community.

From domains to dimensions

Economy. We began with the systems of economic accounting that guide the ABS program of economic statistics, and concentrated on the major stock and flow variables represented in those systems.

Society. We began by considering key dimensions of social concern, which are underlaid by a view of fundamental human needs and aspirations. The ABS program of social statistics is guided by a social concerns framework, the design of which has drawn on many other frameworks and initiatives, such as those developed by the UN, the OECD and the European Union.

Environment. We began by considering major ecosystems and environmental resources that are recognised in international frameworks such as the System of Economic and Environmental Accounting.

Indicators of progress

Our next step was to find an indicator to express each of these dimensions of progress. Our selection of indicators was guided by expert advice and by the criteria described in the box.

Such a small set of indicators cannot paint a full picture of progress, and so supplementary indicators are included. Some supplementary indicators give more information about dimensions of progress that are already represented by a headline indicator; others extend beyond the dimensions covered by the headline indicators.

We recognise that our sifting process means that this publication is both partial and selective – partial because not every dimension of progress is included, and selective because progress in each of the included dimensions is measured using just a few indicators.

The set of headline indicators plays a special role in MAP, and particular considerations of values and preferences arise. MAP presents several hundred indicators overall; to assist readers in gaining a quick understanding of the bigger picture about national progress, MAP presents a more compact suite of fourteen headline indicators, covering the fourteen headline dimensions (some headline dimensions have more than one headline indicator, and some have none).

Headline indicators are distinguished from others by their capacity to encapsulate major features of change in the given aspect of Australian life. And an additional criterion was applied to them – namely, that most Australians would agree that each headline indicator possessed a 'good' direction of movement (signalling progress, when that indicator is viewed alone) and a 'bad' direction of movement (signalling regress, when that indicator is viewed alone). This good-direction / bad-direction distinction raises unavoidably the question of values and preferences.

Once the ABS had drafted its initial list of candidate headline indicators, it undertook extensive consultation to test whether the list accorded with users' views. Whether a reader agrees with the ABS choice of headline indicators or not, he or she is free to peruse the whole suite of several hundred indicators in MAP and to assign high weight, low weight or no weight to each, as his or her own values and preferences dictate.

Some readers of MAP have tried to infer an ABS view about the relative importance of the different aspects of Australian life from the number of aspects discussed under the various headings, or from the number of headline indicators or the number of indicators overall. No such inference can or should be drawn. It is not for the national statistical agency to say what relative importance should be accorded to, say, changes in health, income or air quality. The ABS based its decision about how many indicators to present not on relative value but on statistical grounds – is it possible to find one or a few indicators that would encapsulate the changes in the given aspect of life?

Criteria for choosing progress indicators

When deciding which statistical indicators should be used to encapsulate each aspect of Australian life, we did not have a comprehensive or longstanding body of users' advice to rely upon. For some aspects – health, crime, income, productivity and air quality, for example – there was already some broad consensus regarding indicators that would meet MAP's criteria. But for other aspects – social capital, knowledge and innovation and biodiversity, for example – the effort to develop statistical indicators is more recent, and stakeholder agreement has not yet been reached. Thus, during the development of MAP, the ABS undertook wide-ranging consultation with experts and the general community of users regarding the indicators that would be ideal for each aspect of Australian life and the best approximations to those ideal indicators that are currently available. For the newer or less settled aspects, MAP generally provides an array of indicators and invites readers to form a view about progress.

Our first step was to take each dimension of progress in turn, and to ask 'Why is this dimension particularly important to Australia's progress? What are the key facets of progress in that dimension that any headline indicator should seek to express?'

There were usually several competing indicators that might be included. We chose among them by reference to criteria, such as the following.

Indicators should focus on the **outcome** rather than, say, the inputs or other influences that generated the outcome, or the government and other social responses to the outcome. For example, an outcome indicator in the health dimension should if possible reflect people's actual health status and not, say, their dietary or smoking habits, or public and private expenditure on health treatment and education. Input and response variables are of course important to understanding why health outcomes change, but the outcome itself must be examined when one is assessing progress.

It was also judged important that movements in any indicator could be associated with progress by most Australians. For instance, one might consider including the number of divorces as an indicator for family life. But an increase in that number is ambiguous – it might reflect, say, a greater prevalence of unhappy marriages, or greater acceptance of dissolving unhappy marriages.

Applying this criterion depends crucially on interpreting movements in one indicator, assuming that the other indicators of progress are unchanged. For example, some would argue that economic growth has, at times, brought environmental problems in its wake, or even that the problems were so severe that the growth was undesirable. Others would argue that strong environmental protection might be retrograde to overall progress because it hampers economic growth. However, few would argue against economic growth or strong environmental protection if every other measure of progress was unaffected: that is, if growth could be achieved without environmental harm, or if environmental protection could be achieved without impeding economic growth. Of course, although keeping other things equal might be possible in theory, it seldom, if ever, occurs. The links between indicators are important, and *Measures of Australia's Progress* discusses these links once trends in the individual indicators have been analysed.

Other criteria included an indicator's availability at a national level and as a time series. A full list of our criteria for headline progress indicators is in Appendix I.

Deciding what attributes to measure

Once the ABS had decided on the suite-of-indicators presentation style and on the domains and dimensions of progress, there were still choices to be made regarding the characteristics or attributes of each dimension that should be measured. This is best explained through an example – say, the Health dimension. A comprehensive statistical compendium about health in Australia might present data on:

- health outcomes / the health status of the Australian people – e.g. life expectancy or the occurrence of disease or disability
- health risk factors / pressure points – e.g. patterns of diet, exercise, smoking and occupation that might point to future health outcomes
- financial and other resources (or inputs) expended on health improvement – e.g. government and private current and capital expenditures, the health workforce
- process measures – e.g. the number of people receiving health treatments
- performance metrics – e.g. productivity, efficiency and effectiveness ratios for health service delivery.

Whenever the available statistics support it, MAP focuses on outcomes, that is on things that provide direct measures of whether life in Australia has been getting better. For our headline health indicator, we sought a measure that encapsulates major elements of health outcomes for the whole Australian population. And the best available single measure at present is life expectancy at birth, which is supplemented by other aspects of outcomes such as the burden of disease.

For this and other dimensions of progress, statistics on other attributes are also presented in MAP. But the aim is always to assist the reader to make an overall assessment of historical trends in outcomes or of key influences on outcomes. So for example, the data on life expectancy trends and the burden of disease are supplemented by data on risk factors such as obesity, exercise and smoking – to assist readers who are interested in forming a judgment about past influences on (and the likely future course of) health outcomes.

For several environmental dimensions, outcome-based data are supplemented by discussions of the programs and resources directed to environmental amelioration, such as conservation reserves, revegetation and other efforts to address salinity, rates of water use, and so on.

The data on educational attainments are supplemented by process measures such as school retention rates that influence past and future trends in attainment.

The data on income and wealth are supplemented by performance metrics such as competitiveness that exert a key influence on past and future improvements in material wellbeing.

Is it possible to sum or otherwise combine indicators? To illustrate – changes in national wealth can be summarised well in one indicator (real net worth per capita), whereas half a dozen indicators are needed to depict significant changes in knowledge and innovation.

The place of values and preferences in MAP is well illustrated by its treatment of income distribution and equity. Many Australians believe that a more even distribution of income would represent progress; some would argue that, other things equal, any shift to more even distribution would be an improvement; others would argue only for a somewhat more even distribution than at present – say, one that reduces extreme disparities between high and low incomes. Other Australians would not accept that more even distribution of income would represent progress. Thus, when developing MAP, the ABS decided that measures of income distribution should appear only as supplementary indicators, not as headline indicators. Likewise, associated with many other dimensions of progress, MAP compares and contrasts the circumstances of different groups in the population.

The treatment of linkages

A change in one aspect of national life is almost always associated with changes in others. Even if the linkages between the different aspects were relatively simple ('when this variable goes up by this amount, that variable goes down by this amount'), the occurrence of linkages poses problems for anyone developing a publication like MAP. And, of course, real-world linkages are much more complex.

One must decide how to present linkages between aspects of progress to the reader. To present particular linkages rigorously (and to present the full network of linkages comprehensively), one would need to provide a model of interactions between and within Australian society, economy and environment. The ABS puts considerable effort into developing statistical frameworks and data models that encapsulate the characteristics of entities (individuals, households, businesses, government agencies and other organisations) and the transactions, interactions and relationships between them. That work is informed by and seeks to assist 'scientific' models of the world; but developing such scientific models is not the business of a statistical agency. And a full-blown presentation of such models would be unsuitable for a publication like MAP.

On the other hand, ignoring linkages between the different aspects of progress could imply that an assessment of past progress can be achieved by a simple summation of changes in the indicators, or that a vision of future progress can be achieved by sketching a desirable or probable trajectory for each of the indicators. To forestall such an oversimplified view, the introductory chapters of MAP include a general discussion of 'How the progress indicators relate to one another'; and the chapter on each dimension of progress includes a short discussion of links to other dimensions. These discussions have been distilled from the large body of Australian and overseas research, and have been tested through user review.

Continuing development

These headline indicators form a core set of statistics for reporting on Australian progress. But those we have chosen will change over time, because, for example:

- Thinking may change about what is important to national progress.
- There may be conceptual developments relating to one or more dimensions of progress (such as social cohesion).
- There may be statistical developments that allow us to measure aspects of progress for which we do not at present construct indicators (such as human capital).

The commentary accompanying each headline indicator discusses what an ideal progress indicator might be for each dimension. The conceptually ideal indicators may, in some cases, help guide the continuing development of Measures of Australia's Progress.

Endnotes

1 OECD, 2005, OECD 2005 Statistics, Knowledge and Policy: Key Indicators to Inform Decision Making 'The Reduction of Complexity by Means of Indicators: Case Studies in the Environmental Domain'.