Australian Bureau of Statistics

Reissue

Measures of Australia's Progress: Summary Indicators

Australia

2006 Reissue

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AUSTRALIAN BUREAU OF STATISTICS

EMBARGO: 11.30AM (CANBERRA TIME) WED 31 MAY 2006

ABS Catalogue No. 1383.0.55.001

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INTRODUCTION

WHY THE ABS DEVELOPED MEASURES OF AUSTRALIA'S PROGRESS

Recent years have 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.

In response, ABS produces Measures of Australia's Progress (MAP) which 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.

CHOOSING THE PROGRESS INDICATORS

The progress indicators presented in MAP 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 determine 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. In particular, we identified potential 'headline' indicators which have the capacity to encapsulate major features of change in the given aspect of Australian life.

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. However, to assist readers in gaining a quick understanding of the bigger picture about national progress, these publications also presented a more compact suite of 15 headline indicators, covering the 14 dimensions (some dimensions have more than one indicator, and some have none). Measures of Australia's Progress: Summary Indicators 2006 focuses on these headline indicators.

Our eventual selection of indicators was guided by expert advice and by the criteria described in Criteria for choosing headline indicators. One criterion was regarded as essential to headline indicators - 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,

CHOOSING THE PROGRESS INDICATORS *continued*

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 each edition of 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 social, economic and environmental 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? 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 a range of indicators are needed to depict significant changes in families, communities and social cohesion.

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

THE HEADLINE DIMENSIONS

The following commentaries on the 14 headline dimensions are presented around four broad areas of progress:

- Individuals
- The economy and economic resources
- The environment
- Living together

The table below shows the grouping of the headline dimensions under each of these areas of progress, and provides points of interest from the following commentaries for each dimension.

INDIVIDUALS

Health:

1994 – 2004, Life expectancy increases for men and women.

Education and training:

1995 – 2005, More Australians obtain a non-school qualification.

Work:

1995 – 2005, The unemployment rate decreases.

THE ECONOMY AND ECONOMIC RESOURCES

National income:

1994–95 – 2004–05, Australia experiences significant real income growth.

Economic hardship:

1994–95 – 2003–04, The real income of low income Australians increases.

National wealth:

1995 – 2005, Australia's real net worth per capita rises.

Housing:

2003–04, Housing in Australia is generally good.

Productivity:

1994–95 – 2004–05, Australia experiences productivity improvement.

THE ENVIRONMENT

The natural landscape:

1995 – 2005, The number of threatened birds and mammals rises.

1993 – 2003, The rate of land clearing declines.

The air and atmosphere:

1997 – 2004, Air quality is generally good, even though forest fires have obscured this trend.

1990 – 2003, Greenhouse gas emissions have risen.

Oceans and estuaries:

2002, Most estuaries are largely unmodified and many are pristine.

LIVING TOGETHER

Family, community and social cohesion:

1995 – 2002, More Australians are participating in voluntary work.

Crime:

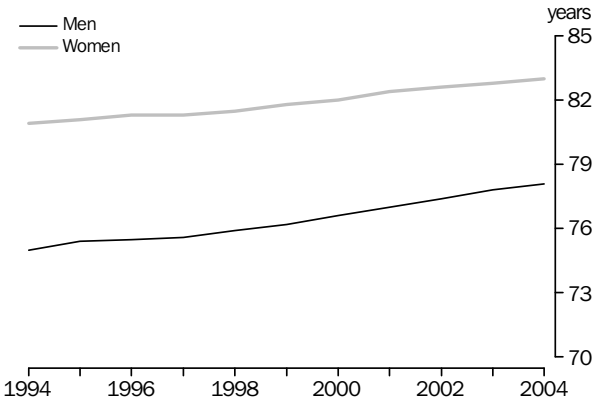
1993 – 2005, Rates of personal crime increase slightly, and household crime rates decrease.

Democracy, governance and citizenship:

1991 – 2001, More long-term overseas-born residents are becoming citizens.

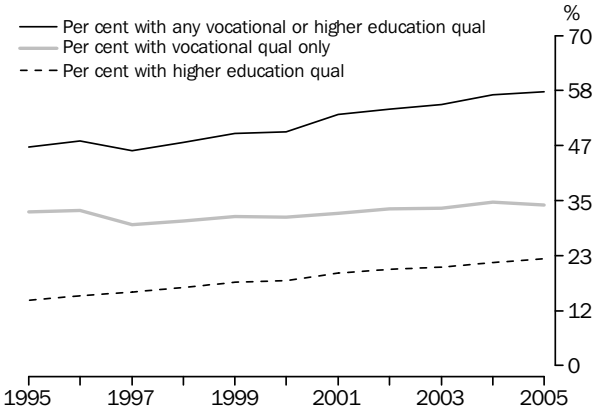
When measuring progress for individuals, we consider three headline dimensions – Health; Education and training; and Work. All three indicators for Individuals suggest progress during the last decade.

HEALTH, Life expectancy at birth



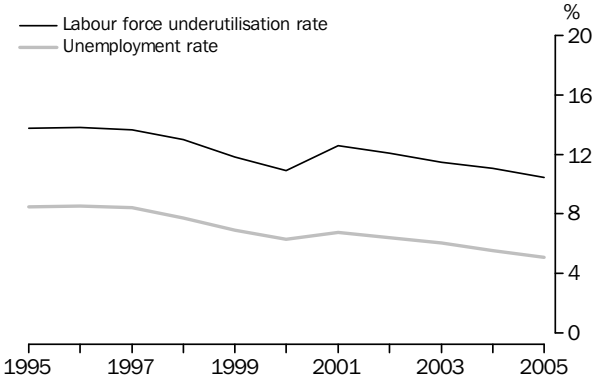
Source: Deaths, Australia, 2004 cat. no. 3302.0. (Endnote 1)

EDUCATION AND TRAINING, People aged 25-64 with a vocational or higher education qualification



Source: Survey of Education and Work, Australia, 2005, cat. no. 6227.0. (Endnote 2)

WORK, Unemployment and labour force underutilisation rates



Source: Australia Labour Market Statistics, April 2006, cat. no. 6105.0. (Endnote 3)

HEALTH

Life expectancy at birth is a measure of how long someone born in a particular year might expect to live if mortality patterns for that year remained unchanged over their lifetime. It is one of the most widely used indicators of population health. It focuses on length of life rather than its quality, but it usefully summarises the health of the population.

Australian life expectancy improved during the decade 1994 to 2004. A boy born in 2004 could expect to live to be 78, while a girl could expect to reach 83 – increases of three and two years respectively. Women tend to live longer than men, and this is reflected in the differences in life expectancy throughout the 20th century. Although a girl born in 2004 could still expect to live more than five years longer than a boy, in recent years life expectancy at birth has increased more quickly for men than for women.

While Australians are living longer than ever before, there is a good deal of debate about whether life expectancy will continue to increase. However, there is no doubt that there is more room for improvement among some groups of the population than among others. In particular, Indigenous Australians do not live as long as other Australians, and the difference is marked.

EDUCATION AND TRAINING

Education and training help people to develop knowledge and skills that may be used to enhance their own living standards and those of the broader community. For an individual, educational attainment is widely seen as a key factor to a rewarding career. For the nation as a whole, having a skilled workforce is vital to supporting ongoing economic development and improvements in living conditions.

The progress indicator used here measures the attainment of formal non-school qualifications. This headline indicator is the proportion of the population aged 25-64 with a vocational or higher education qualification (Endnote 2).
The indicator shows that there has been a rise in the proportion of people with non-school qualifications. Between 1995 and 2005, the proportion of 25-64 year olds with a vocational or higher education qualification rose from 46% to 58%, continuing a trend seen for many decades.

The increase over the last decade in the proportion of people with non-school qualifications is mainly being driven by the substantial increase in the proportion of people with a higher education qualification (i.e. a bachelor degree or above). Between 1995 and 2005, the proportion of people aged 25-64 with a higher education qualification increased from 14% to 23%. The proportion of people whose highest qualification was a vocational qualification was 34% in 2005, a similar level to a decade earlier.

WORK

Paid work is the way most people obtain the economic resources needed for day to day living, for themselves and their dependents, and to meet their longer term financial needs. Having paid work contributes to a person's sense of identity and self-esteem. People's involvement in paid work also contributes to economic growth and development.

The unemployment rate has been chosen as the headline indicator, because of its relevance to the economic and social aspects of work. This rate is the number of unemployed persons expressed as a percentage of the labour force, and is a widely used measure of underutilised labour resources in the economy. The graph also includes the

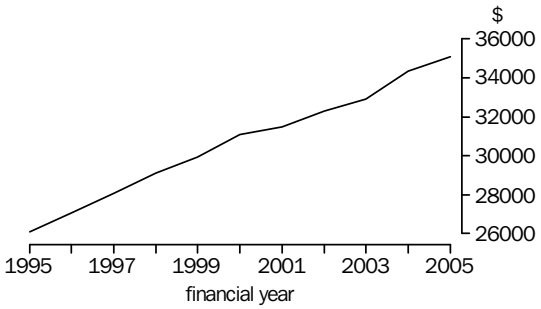
WORK *continued*

labour force underutilisation rate. This is a measure of the number of unemployed and underemployed people, expressed as a proportion of the labor force (Endnote 3).

Measures of underutilised labour such as the unemployment rate are sensitive to changes in the economy. In 1995, the annual average unemployment rate stood at 8.2%, a relatively high value, reflecting the downturn of the early 1990s. Since then it has generally fallen, to stand at 5.1% in 2005. The labour force underutilisation rate fell from 13.8% in 1995 to 10.5% in 2005.

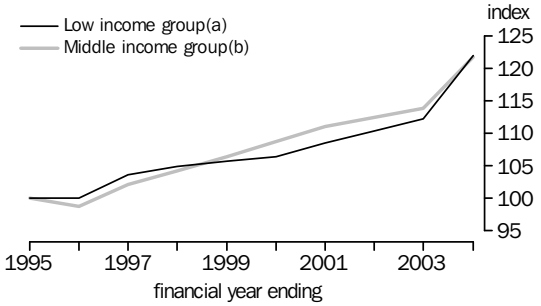
When measuring progress for the economy and economic resources, we consider five headline dimensions (although indicators are only available for four) - National income; Economic hardship; National wealth; Housing; and Productivity. The headline indicators available suggest some progress for these dimensions over the past decade.

NATIONAL INCOME, Real net national disposable income per capita



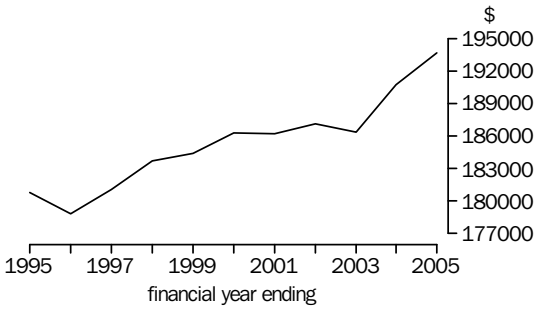
Source: Australian System of National Accounts 2004-2005, cat. no. 5204.0. (Endnote 4)

ECONOMIC HARDSHIP, Average real equivalised disposable household income



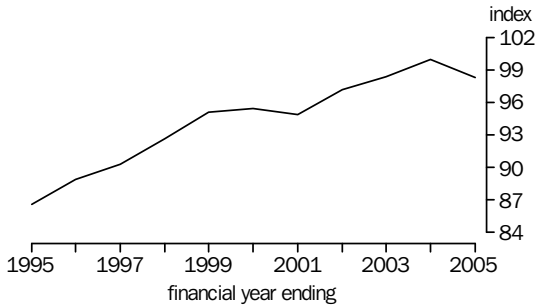
Source: Household Income and Income Distribution, Australia 2003-04, cat. no. 6523.0. (Endnote 5)

NATIONAL WEALTH, Real national net worth per capita



Source: Australian System of National Accounts 2004-2005, cat. no. 5204.0. (Endnote 6)

PRODUCTIVITY, Multifactor productivity



Source: Australian System of National Accounts 2004-2005, cat. no. 5204.0.

NATIONAL INCOME

National income is a measure of Australia's capacity to acquire goods and services for consumption. It is a determinant of material living standards and is also important for other aspects of progress. There are many different ways of measuring income. The headline measure - real net national disposable income per capita - has a variety of features that make it an informative indicator of national progress.

- It is a per capita measure. Total income could rise during periods of population growth, even though there may have been no improvement in Australians' average incomes.
- It is a real measure - it is adjusted to remove the effects of price change. Nominal or current price income could rise during periods of inflation, even though there may have been no increase in Australians' real capacity to buy goods and services.
- It takes account of income flows between Australia and overseas, and is adjusted for changes in the relative prices of our exports and imports (our 'terms of trade'). These international influences on Australia's income can increase or decrease Australians' capacity to buy goods and services.
- It is a net measure - it takes account of the depreciation of machinery, buildings and other produced capital used in the production process. Hence, it reflects the income Australia can derive today while keeping intact the fixed capital needed to generate future income.

Australia experienced significant real income growth during the past decade. Between 1994-95 and 2004-05, real net national disposable income per capita grew by 3.0% a year.

ECONOMIC HARDSHIP

Society generally accepts that people have a right to enjoy some minimum material standard of living, that is, to consume a minimum standard of goods and services. Household income is the major source of economic resources for most households and therefore a key determinant of economic wellbeing. The headline economic hardship indicator shows the growth in average real equivalised disposable income of people close to the bottom of the income distribution (Endnote 5). Although it provides no information about the number of people who might have an unacceptable standard of living, it does indicate whether the average income of people in the low income group is rising or falling.

ECONOMIC HARDSHIP *continued*

The headline economic hardship indicator shows that low income people experienced a trend of rising real incomes between 1994-95 and 2003-04. The average real equivalised disposable household income of low income people is estimated to have risen by 22% over the period, although part of the increase in 2003-04 may reflect improvements to the way income was collected in the survey in that year. For those people who were in this income grouping for the entire period, their rising incomes would on average have provided a capacity to increase their real standard of living, other things being equal. While some would interpret this increase in the real income of the low income group as progress, others would consider that it also needs to be weighed against changes in community standards. Although there is no direct measure of these, one approach is to compare changes with those of 'middle' Australians. And so the chart also shows changes in the real income of people in the third quintile, also estimated to have risen by 22% between 1994-95 and 2003-04.

The headline indicator considers low income which is commonly associated with economic hardship. However, some people have access to other economic resources such as wealth. Furthermore, economic hardship is a multidimensional issue that is often associated with problems such as lack of participation in work, substance abuse, poor health, poor education, poor housing, crime, social exclusion and a lack of opportunity for children. It can also be associated with changes in life fortunes.

NATIONAL WEALTH

National wealth and national income are very closely related. Along with the skills of the work force, a nation's wealth has a major effect on its capacity to generate income. Produced assets (such as machinery and equipment) are used in income-generating economic activity. Income, in turn, provides for saving that enables the accumulation of new wealth. 'Real national net worth per capita' exhibits features that make it an informative indicator of national progress.

- It is a net measure - it shows the amount by which Australia's assets exceed its liabilities to the rest of the world.
- It is a per capita measure - total wealth could rise if the population grew, even though there may have been no improvement in Australians' average wealth.
- It is a real measure - it is adjusted to remove the effects of price change.

Between June 1995 and June 2005, Australia's real net worth per capita rose at an average annual rate of 0.9%. However, the headline indicator does not take account of everything that might be regarded as valuable. For example, it does not include - native forests and other natural assets not used for economic production; or human capital (e.g. knowledge and skills); or social capital (e.g. social networks and trust).

HOUSING

Housing provides people with shelter, security and privacy. Having an adequate and appropriate place to live is fundamental to people's wellbeing, and there are many aspects to housing that affect the quality of people's lives. Dwelling attributes, such as size, number of bedrooms, physical condition, location relative to amenities and services, and affordability, are all important in this regard but there is currently no one indicator that succinctly captures whether people's many needs and desires for suitable housing are being met.

HOUSING *continued*

Housing in Australia is generally good, and Australians are continuing to invest significantly in the homes that they own. In the decade to June 2005, the household sector invested about $400 billion (in current price terms) in new dwellings (excluding land). The value of land and dwellings owned by the household sector at 30 June 2005 represented close to 60% of the value of all assets owned by the sector.

Australians are tending to live in smaller household groups, with the average household size shrinking by 13% over the 20 years to 2001. In 2003-04, while 5% of private dwellings across Australia required an extra bedroom to accommodate the residents of those dwellings, 69% of private dwellings had one or more bedrooms spare. But poor or inadequate housing is currently a problem for some groups, especially for Aboriginal and Torres Strait Islander peoples living in remote areas.

PRODUCTIVITY

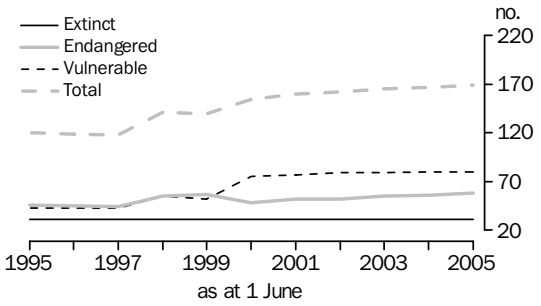
A nation's productivity is the volume of goods and services it produces (its output) for a given volume of inputs (such as labour and capital). A nation that achieves productivity growth produces more goods and services from its labour, capital, land, energy and other resources. Much, but not all of Australia's output growth can be accounted for by increases in the inputs to production. The amount by which output growth exceeds input growth is the productivity improvement. Productivity growth can generate higher incomes. Benefits might also accrue in the form of lower output prices.

Productivity can be measured in a variety of ways. The most comprehensive Australian measure available at present is multifactor productivity for the market sector. Multifactor productivity represents that part of the growth in output that cannot be explained by growth in labour and capital inputs. During the decade 1994-95 to 2004-05, Australia experienced improved productivity growth, and multifactor productivity rose 14% or 1.3% per year on average.

During the past few decades, successive Australian governments have enacted reforms that have sought to create an economic environment favourable to increased competition, better allocation of resources and more innovation. Key policy influences have included reduction of tariffs and other barriers to international trade, relaxation of barriers to international investment, changes to the structure and rates of taxation, domestic competition policy and reforms to financial, labour and other markets. Economists continue to investigate the links each of these varied influences has on productivity growth, and many are not yet well understood.

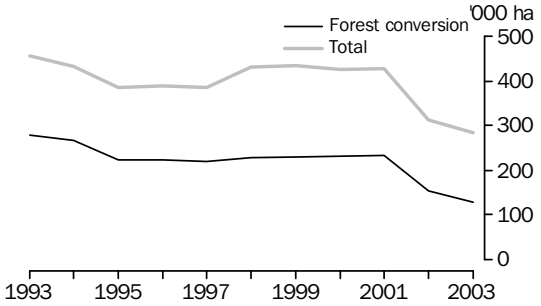
When measuring progress for the environment, we consider three headline dimensions - The natural landscape; The air and atmosphere; and Oceans and estuaries. It is difficult to obtain national time series data that encapsulate the changes in Australia's natural resources. However, for those dimensions where such data are available, progress over the past decade was varied.

BIODIVERSITY, Extinct, endangered and vulnerable birds and mammals



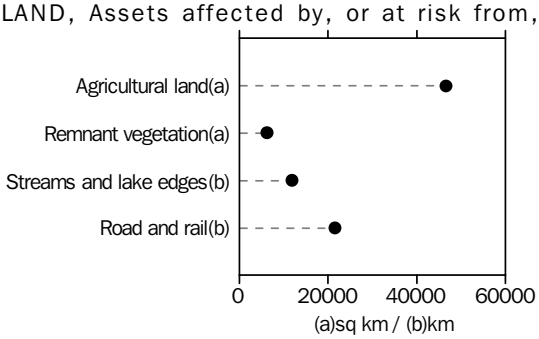
Source: National List of Threatened Fauna, The Department of Environment and Heritage. (Endnote 7)

BIODIVERSITY, Annual area of land cleared



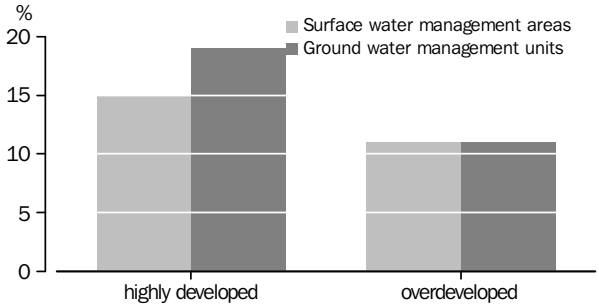
Source: National Greenhouse Gas Inventory 2003, Australian Greenhouse Office. (Endnote 8)

LAND, Assets affected by, or at risk from, salinity – 2000



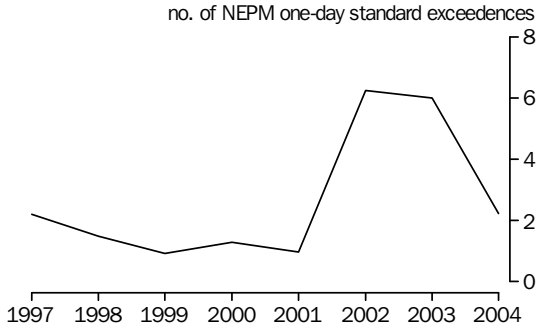
Source: National Land and Water Resources Audit 2001, Australian Dryland Salinity Assessment 2000. (Endnote 9)

INLAND WATERS, Highly developed and overdeveloped water sources – 2000



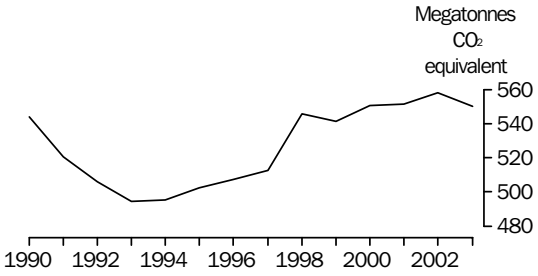
Source: National Land and Water Resources Audit 2001, Australian Water Resources Assessment 2000. (Endnote 10)

THE AIR AND ATMOSPHERE, Urban air quality, days fine particle health standards were exceeded



Source: State environmental protection agencies, 2006. (Endnote 11)

THE AIR AND ATMOSPHERE, Australia's net greenhouse gas emissions



Source: National Greenhouse Gas Inventory 2003, Australian Greenhouse Office. (Endnote 12)

THE NATURAL LANDSCAPE - BIODIVERSITY, LAND AND INLAND WATERS

Biodiversity

No single indicator can hope to encapsulate biodiversity, and so we focus on two aspects: the numbers of extinct and threatened Australian birds and mammals; and the clearing of native vegetation.

Although the numbers of threatened birds and mammals are only a small part of the overall biological diversity, a decline in these groups of species threatens ecological processes and can point to a wider decline in biodiversity. The list should not be construed as a census of threatened species as they can be added to or removed from the list as their status changes or due to improved knowledge (Endnote 7). However, it is as accurate an account of the status of these species as can be currently compiled.

Biodiversity continued

Between 1995 and 2005 the number of terrestrial bird and mammal species assessed as extinct, endangered or vulnerable rose by 41% from 120 to 169 (of which 67 were birds and 102 were mammals). In June 2005 just under half of these species were vulnerable, one-third were more seriously threatened (endangered) and the remaining fifth were presumed extinct. There were increases in the numbers of both endangered and vulnerable species, but the rise in species assessed as vulnerable was much higher (86%) than those assessed as endangered (26%).

Land clearing destroys plants and local ecosystems and removes the food and habitat on which other native species rely. Clearing helps weeds and invasive animals to spread, affects greenhouse gas emissions and can lead to soil degradation, such as erosion and salinity, which in turn can harm water quality. Native bushland has cultural, aesthetic and recreational importance to many Australians. The land clearing estimates include information about forest conversion (land cleared for the first time) and reclearing, both of which have environmental impacts.

The estimated 283,000 ha of Australian land cleared in 2003 is 38% less than the 457,000 ha cleared in 1993. Of the land cleared in 2003, less than half (128,000 ha) was 'converted' (cleared for the first time), which is less than half the area converted in 1993 (279,000 ha).

Land

Australia's soils are old and shallow, and are susceptible to degradation by agricultural activities. Salinity occurs when the water table rises, bringing natural salts to the surface (in sufficient quantity, these salts are toxic to most plants). When trees or other deep-rooted vegetation are replaced with vegetation that uses less water, the water table may rise to cause dryland salinity. Dryland salinity threatens biodiversity, through loss of habitat on land and in water, and also impacts on water resources, pipelines, houses and roads. Areas near water are often worst affected because they occupy the lowest parts of the landscape where saline groundwater first reaches the surface.

In 2000, about 46,500 sq kms (4.6 million hectares) of agricultural land were already affected with a high salinity hazard or in an area at high risk from shallow watertables. The cost to agricultural productivity was estimated at $187 million in 2000, which was less than the cost of other forms of soil degradation, such as over $1 billion due to acidity in the same year.

However, the costs of salinity go further as it can impact on structures, as well as flora and fauna. The salt contained in rising groundwater levels can damage bitumen and concrete and so affect roads, footpaths, housing, pipelines and other assets. In 2000, about 11,800 kms of streams and lake edges, as well as 1,600 kms of rail and 19,900 kms of roads were affected or at risk (Endnote 9).

Inland waters

Water is fundamental to the survival of people and other organisms. Apart from drinking water, much of our economy (agriculture in particular) relies on water. The condition of freshwater ecosystems has a critical impact on the wider environment.

In 2000, about 11% of Australia's surface water management areas were overdeveloped. Another 15% were approaching sustainable extraction limits (i.e. highly developed). Therefore, in 2000 about one-quarter of Australia's surface water management areas were classed as highly used or overused. This proportion was greater for groundwater

Inland waters continued

management units, where 11% were overdeveloped, and a further 19% were highly developed (Endnote 10). Detailed national time series data are not available, but a variety of partial evidence points to a decline in the quality of some of Australia's waterways.

THE AIR AND ATMOSPHERE

Urban air quality

Poor air quality has a range of negative impacts: it can cause health problems, damage infrastructure, reduce crop yields and harm flora and fauna. Air pollution occurs both naturally and as a result of human activities. Australians consistently rank air pollution as a major environmental concern. The headline indicator considers the concentration of fine particles in the atmosphere, a measure of the form of air pollution about which many health experts in Australia are most concerned.

The common air pollutants are found at higher levels in urban and industrial areas than in rural Australia. It is important to note that daily changes in air quality depend on ambient conditions, like wind direction and the monitoring station's proximity to pollution sources. Further, high concentrations of fine particles from irregular events, such as forest fires, can obscure the longer trend in levels produced by regular sources, like car emissions.

Overall, air quality in Australia is relatively good and has generally improved during the 1990s. Fine particle health standards (Endnote 11) were exceeded in the selected urban areas on average between one and two days each year between 1997 and 2001. There was a rise in 2002 and 2003, mainly due to severe forest fires and dust storms around the Sydney and Melbourne areas which caused the National Environment Protection Measure (NEPM) to be exceed on 13 days in Sydney in 2002 and 10 days in Melbourne in 2003. The was also exceeded on seven days in Brisbane in 2002. Sydney and Brisbane recorded one and two day's exceedences, respectively, in 2004.

NET GREENHOUSE GAS EMISSIONS

Global warming is widely perceived as one of the most significant international environmental concerns. Australia's contribution to these international concerns is an important aspect of progress.

The main gases in the atmosphere, nitrogen and oxygen, are almost completely transparent to the sun's rays. But water vapour, carbon dioxide and other gases form a blanket around the Earth, trapping heat - a process called the greenhouse effect. Human activity is increasing atmospheric concentrations of existing greenhouse gases (such as carbon dioxide and methane) and adding new gases such as chlorofluorocarbons (CFCs). Net emissions are estimated using information about total emissions, less any credits from forest sinks (the credits are estimates of how much carbon dioxide has been absorbed by new and expanding forests established in Australia since 1990).

For 2003, Australia's net greenhouse emissions were estimated to be 550.0Mt carbon dioxide-equivalent (CO2-e) (Endnote 12). Based on 2001 emissions, Australia accounts for 3.4% of total industrialised countries emissions. The net amount emitted in Australia in 2003 was a 1.4% decrease on net emissions in 2002, largely reflecting decreases in emissions from land use, land use change and forestry, and from waste. Australia's net emissions in 2003 were 1.1% above 1990 levels. Emissions rose gradually over the period, with the sharpest rise between 1997 and 1998 when emissions from land use change rose rather than fell as they had done during most of the decade.

OCEANS AND ESTUARIES

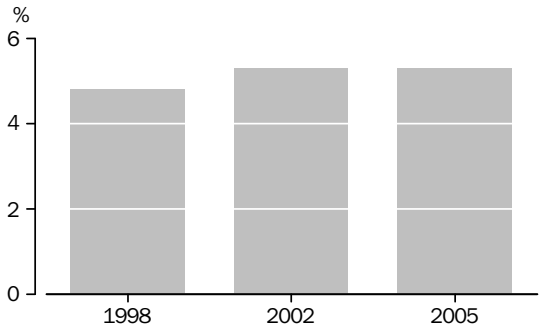
Australia's coastal and marine regions support a large range of species, many of them found only in Australian waters. These regions are also important to Australian society and the economy. Many of the ways in which we use our oceans, beaches and estuaries can affect the quality of the ocean's water and the diversity of life within it. Although this dimension has no headline indicator, it does have important aspects which different organisations have attempted to measure.

One such measure is the Estuarine Condition Index, developed by the National Land and Water Resources Audit (NLWRA). The index assesses the condition of about 1,000 estuaries around the Australian coast. Because estuaries occur at the borders of marine and freshwater ecosystems, they are influenced by the tides and also by fresh water from the land. And so measuring the condition of estuaries not only reports on the state of our oceans, it sheds light on how land use around the water that flows into the estuary is affecting the sea. The more modified an estuary the greater the pressures on it; in 2002 the NLWRA assessed a large proportion (979) of Australia's estuaries and found their condition was:

- near-pristine - 50%.
- largely unmodified - 22%.
- modified - 19%.
- extensively modified - 9%.

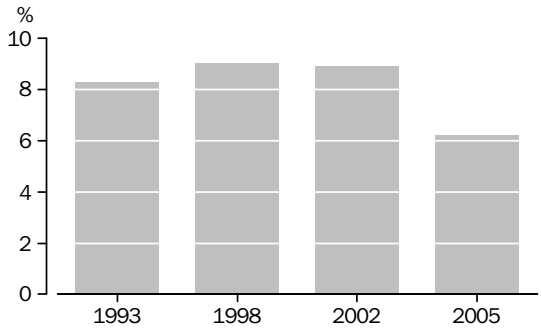
When measuring progress for Living together in our society, we consider three headline dimensions - Family, community and social cohesion; Crime; and Democracy, governance and citizenship. However, headline indicators are only available for the second dimension.

CRIME, Victims of personal crimes



Source: Crime and Safety, Australia, 2005, cat. no. 4509.0. (Endnote 13)

CRIME, Victims of household crimes



Source: Crime and Safety, Australia, 2005, cat. no. 4509.0. (Endnote 14)

FAMILY, COMMUNITY AND SOCIAL COHESION

Family and community are important aspects of society, but there is no single indicator that captures all that might be important. The quality and strength of people's relationships and bonds with others - their family, friends and the wider community - are important ingredients of the level of social cohesion. And a more cohesive society is one in which communities are strong and inclusive, and where fewer people 'fall through the cracks'. When the support offered by people's families and communities declines or is absent, it can contribute to serious social exclusion and problems.

The family can be seen as the wellspring from which some of the dimensions crucial to social cohesion develop, such as trust, social support and the extension of social networks. Most Australians live in households as members of a family unit. A key role of families is to raise capable and functioning people. While couple families are the most common family type, there have been increases in the proportions of one parent families over recent decades. One parent families with dependent children have increased from 7% of families in 1976 to 11% in 2001. (Endnote 15)

The vast range of services provided within communities by groups, clubs and charitable organisations are a crucial adjunct to the care provided by families and the institutionalised care provided by governments. Community bonds can be strengthened through things like volunteering and donating money to groups and organisations in the

FAMILY, COMMUNITY AND SOCIAL COHESION *continued*

community. The likelihood that people will voluntarily give their time to do some work for an organisation or group might be regarded as one of the stronger expressions of social capital, as it involves providing assistance, fulfilling needs and providing opportunities for community engagement. Between 1995 and 2002, the proportion of people aged 18 years and over who reported that they did some voluntary work during the previous 12 months increased from 24% to 34%.

CRIME

Crime takes many forms and can have a major impact on the wellbeing of victims, their families and friends, and the wider community. Those most directly affected may suffer financially, physically, psychologically and emotionally, while the fear of crime can affect people and restrict their lives in many ways. There are other costs as well, including the provision of law enforcement services by the police, courts and associated legal services, and corrective services.

Although it would be desirable to have a single indicator of the cost of crime to society, one does not exist. Instead the headline indicators are two measures of victims of common criminal offences: 'household crimes' and 'personal crimes'. The former refers to actual or attempted break-in and motor vehicle theft. The latter refers to assault, sexual assault or robbery. Personal crimes are not restricted to crimes committed in the victim's home, and so include crimes at people's place of work or study and so on. The victimisation rates for personal crimes are for assault and robbery victims among people aged 15 or over, and sexual assault among people aged 18 and over. The victimisation rates for household crimes are for actual or attempted break-ins and motor vehicle thefts across all households.

Though small, the changes in the prevalence rates for victims of personal crimes between 1998 and 2002 showed an increase from 4.8% to 5.3%. Most of these people were assaulted. Between 1993 and 2002, there was little change in the proportion of households that were the victim of a household crime (an actual or attempted break-in or motor vehicle theft) and it remained at a little below 9%.

DEMOCRACY, GOVERNANCE AND CITIZENSHIP

National life is influenced by both the wellbeing of individual citizens in terms of tangible factors such as income, wealth, health and education and by less tangible factors such as the quality of our public life, the fairness of our society, the health of democracy and the extent to which citizens of Australia participate actively in their communities or cooperate with one another.

It has been argued that a healthy democracy needs citizens who care, are willing to take part, and are capable of helping to shape the common agenda of a society. And so participation - whether through the institutions of civil society, political parties, or the act of voting - is seen as important to a stable democracy. In Australia, enrolment and voting in State and Federal elections is compulsory. In June 2005, the Australian Electoral Commission (AEC) estimated that 95% of eligible Australians were enrolled to vote. However, there were differences in the proportions enrolled among different age groups and the AEC estimates that 81% of eligible 18-25 year olds were enrolled. (Endnote 15)

DEMOCRACY, GOVERNANCE AND CITIZENSHIP *continued*

Standing for public office is another form of political participation. The number of candidates who stand for public office can be considered an indicator both of public interest and motivation in standing for election, as well as commitment from political parties in selecting and supporting candidates to stand in elections. It is not possible however, to gauge the diversity or quality of candidates from information on the number of candidates.

Between 1993 and 2004, the number of candidates standing for election at Australian federal elections increased. Over 1,400 candidates stood for election (1091 for the House of Representatives and 330 for the Senate) at the 2004 federal parliamentary election, compared with 1,200 in 1993. During this period the number of seats in the House of Representatives increased by three from 147 to 150 accounting for some of this change.

ENDNOTES

1 Data for 1993 and 1994 are based on individual years. Data for 1995 onwards are three-year averages, with the year shown being the last year of the three-year period.

2 The percentages for the two bottom lines in the headline indicator graph for Education and training do not sum to the top line. This is because the top line includes people who have a qualification where the level cannot be determined. Some of the people with a higher education qualification (the bottom line in the graph) may also have a vocational qualification. As the data are based on people's level of highest non-school qualification, it is not possible to give the proportions of people with both qualifications.

The educational attainment indicators refer to vocational and higher education qualifications (defined below) which are also called non-school qualifications. Qualifications are defined as formal certifications, issued by a relevant approved body, in recognition that a person has achieved learning outcomes or competencies relevant to identified individual, professional, industry or community needs. Statements of attainment awarded for partial completion of a course of study at a particular level are excluded.

Vocational education qualifications include Advanced Diploma, Advanced Certificate, Diploma, and Certificates I to IV. Higher education qualifications include Postgraduate Degree, Master Degree, Graduate Diploma, Graduate Certificate, and Bachelor Degree.

Non-school qualifications are awarded for educational attainments other than those of pre-primary, primary or secondary education. They include the higher education qualifications and vocational education qualifications listed above. Collectively, this group of qualifications is referred to as non-school qualifications instead of post-school qualifications because students can now study for vocational qualifications, such as certificates and diplomas, while attending high school.

3 The unemployment rate (bottom line in the graph for Work) is the number of unemployed persons expressed as a percentage of the labour force. It is an annual average.

The labour force underutilisation rate (the top line in the graph for Work) is the number of persons who are either unemployed or underemployed (defined below), expressed as a proportion of the labour force. It relates to September each year as a percentage of the labour force.

People who are unemployed or underemployed are defined as follows:

Unemployed - people who were not employed during the reference week, but who had actively looked for work in the four weeks up to the reference week and were available to start work in the reference week.

Underemployed - people working less than 35 hours a week who wanted to work additional hours and were available to start work with more hours and full-time workers who worked less than 35 hours in the reference week, for economic reasons.

4 Reference year 2003-2004.

5 Disposable (after income tax) income amounts are equivalised by applying the OECD equivalence scale. The equivalised income amounts are also adjusted for changes in living costs as measured by the Consumer Price Index (CPI). No surveys were conducted in 1998-99 and 2001-02. The respective data for these two years shown in the graph for economic hardship are just the midpoint values of the previous year and the following year. The base of each index is at 1994-95 and equals 100.

ENDNOTES *continued*

The low income group comprises people in the 2nd and 3rd income deciles from the bottom of the distribution after being ranked, from lowest to highest, by their equivalised disposable household income. The middle income group comprises people in the middle income quintile (5th and 6th deciles) when all people are ranked, from lowest to highest, by their equivalised disposable household income.

People falling into the lowest decile are excluded because, for many of them, the value of their income does not appear to be an appropriate indicator of the economic resources available to them. Their income tends to be significantly lower than would be available to them if they were reliant on the safety net of income support provided by social security pensions and allowances. At the same time, their expenditure levels tend to be higher than those of people in the second deciles, indicating that they have access to economic resources other than income, such as wealth, to finance their expenditure.

6 Volume measure; reference year 2003-2004.

7 Excludes seabirds, marine mammals and animals living on islands far offshore. Extinctions data have been backcast to take account of rediscoveries. Includes subspecies. There is likely to be a time lag between a species being identified as threatened and being listed.

8 Forest conversion is land that has been cleared for the first time. According to the National Carbon Accounting System of the Australian Greenhouse Office (AGO), "the results for 2002 and 2003 will increase when areas of uncertain 'Land Use Change' are confirmed/included during the next update". Greenhouse Gas Emissions from Land Use Change in Australia, Results of the National Carbon Accounting System 1988–2001, AGO, 2003, Canberra.

9 The National Land and Water Resources Audit (NLWRA) defines land as having a high potential to be affected by salinity if groundwater levels are within two metres of the surface or within two to five metres with well demonstrated rising watertables. Remnant vegetation includes planted perennial vegetation.

The NLWRA's salinity projections are based on a range of assumptions and data including an assumption of a continued rate of increase and no change to water balances.

10 Australia has 325 surface water management areas, based on the country's 246 river basins, and 538 groundwater management units (hydrologically connected water systems).

A highly developed water source is one where 70%-100% of the sustainable yield of water is extracted. An overdeveloped water source is one where more than 100% of the sustainable yield is extracted.

11 Data are from representative sites in Sydney (Liverpool), Melbourne (Footscray), Brisbane (Rocklea), Perth (Duncraig) and Adelaide (Thebarton from 1997-2002 and Netley for 2003-04), and have been combined in proportion to each city's population.The data are the number of days when the National Environment Protection Measures (NEPM) average daily PM10 (defined below) standard is exceeded. The PM10 data from each state environmental protection agency (EPA) was obtained using the Tapered Element Oscillation Microbalance (TEOM) method, which continuously monitors PM10 levels in the air averaged over a 24 hour period. 1997 was the first year all of the five EPAs used this method.

Fine particles in the atmosphere come from a wide variety of sources, including soil (dust), vegetation (pollens and fungi), sea salt, fossil fuel combustion, biomass burning (including bushfires) and industry. Particles suspended in air have the ability to penetrate the lower airways of the lung if smaller than 10 micrometres in diameter(referred to as PM10). Increasing evidence suggests the acute health effects

ENDNOTES *continued*

may, in fact, be the result of exposure to very fine particles, such as those smaller than 2.5 micrometres in diameter (referred to as PM2.5). It is these finer particles that are the main cause of urban haze, which typically appears white. Most of these particles are generated by people, rather than occurring naturally. The human health effects are many and depend on the size and chemical composition of the particles. Particles can aggravate existing respiratory and cardiovascular disease and asthma, can affect eyesight and cause allergies.

12 The indicator measures million tonnes (megatonnes) of carbon dioxide (CO2) equivalent emissions. Different greenhouse gases have different effects and remain in the atmosphere for different periods of time. A tonne of methane, for example, contributes as much to global warming as 21 tonnes of CO2. To assess the impact of the different gases together, emissions of each gas are converted to a common CO2 equivalent scale and added. For example, a tonne of methane and a tonne of CO2 would equate to 22 tonnes of greenhouse gases CO2 equivalent.

The data are based on estimates produced using Kyoto accounting methods.

13 The victimisation rates for personal crimes are for assault and robbery victims among people aged 15 or over, and sexual assault among people aged 18 and over.

14 The victimisation rates for household crimes are for actual or attempted break-ins and motor vehicle thefts across all households (private dwellings).

15 According to the Australian Electoral Commission's Annual report 2004-05 "the results of the Sample Audit Fieldwork indicate that an estimated 96% of the eligible population was enrolled for the correct division". Australian Electoral Commission (AEC) 2005, Annual report 2004-05, AEC, Canberra

APPENDIX 1 CRITERIA FOR CHOOSING HEADLINE INDICATORS

HEADLINE INDICATORS

Measures of Australia's Progress is designed for the Australian public, and the commentaries are meant to be easily understood by readers who may not be expert in either the subject matter or statistical methods. In many cases, our choice of indicator has had to strike a balance between considerations of approachability, technical precision, and the availability and quality of data.

The headline indicators in this publication are concerned with assessing dimensions of Australia's progress, not with explaining the underlying causes of change.

In the view of the ABS, a good headline indicator should:

- be relevant to the particular dimension of progress
- where possible, focus on outcomes for the dimension of progress (rather than on say, the inputs or processes used to produce outcomes)
- show a 'good' direction of movement (signalling progress) and 'bad' direction (signalling regress) - at least when the indicator is considered alone, with all other dimensions of progress kept equal
- be supported by timely data of good quality
- be available as a time series
- be available at a national level
- be sensitive to changes in the underlying phenomena captured by the dimension of progress
- be summary in nature
- preferably be capable of disaggregation by, say, geography or population group
- be intelligible and easily interpreted by the general reader.

For some dimensions, it is not yet possible to compile an ideal indicator meeting all these criteria. So a proxy or no indicator has been presented, pending further statistical development work by the ABS or other researchers.

PROCESS OF DEVELOPING HEADLINE INDICATORS

When deciding which statistical indicators should be used to encapsulate each aspect of Australian life, we were guided by expert advice as well as the criteria listed above. 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 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 cohesion, democracy and governance and biodiversity, for example - the effort to develop statistical indicators is more recent, and stakeholder agreement has not yet been reached. 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. In choosing among them, each of the criteria were considered, as illustrated below.

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.

PROCESS OF DEVELOPING HEADLINE INDICATORS
continued

It was also judged important that movements in any indicator could be positively or negatively 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 relating to signal 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 2006* discusses these links after trends in the individual indicators have been analysed

The headline indicators form a core set of statistics for reporting on Australia's progress. But the dimensions 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.

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.

There are countless initiatives at the international, national and sub-national levels around the world.

A selection is mentioned below.

The Australian Collaboration (a group of major national non-governmental organisation peak bodies including: Australian Conservation Foundation, Australian Council of Social Services, Australian Consumers Association, Australian Council for Overseas Aid, Aboriginal and Torres Strait Islander Commission, Federation of Ethnic Communities' Councils of Australia, and National Council of Churches) produced two reports *Where are we going: comprehensive social, cultural and environmental reporting,* and *A Just and Sustainable Australia.* They can be found at:

http://www.australiancollaboration.com.au/booksreports

The OECD's report (2001) *The Well-being of Nations: the Role of Human and Social Capital* covers the integration of societal wellbeing measures with economic and environmental ones. It can be found at:

http://www.SourceOECD.org

The Danish government report entitled *Structural Monitoring International Benchmarking of Denmark*, comparing Denmark's performance on a wide range of social, economic and environmental criteria with a number of countries, can be found at:

http://www.fm.dk/1024/vispublikationesForside.asp?artikelid=4503

Statistics New Zealand's *Monitoring Progress Towards a Sustainable New Zealand*, at:

http://www.stats.govt.nz

In March 2005, the UK Government launched a new Sustainable Development Strategy, called *Securing the Future*, which sets out the vision of sustainable development through to 2020. It builds on the 1999 strategy, *A better quality of life*. The Strategy highlights four priority areas for action: Sustainable consumption and production, climate change and energy, protecting natural resources and enhancing the environment, creating sustainable communities and a fairer world:

http://www.sustainable-development.gov.uk/progress/index.htm

In 2004, the USA's General Accounting Office, as part of their Key National Indicators Initiative published a report - *Informing Our Nation: Improving How to Understand and Assess the USA's Position and Progress*. It can be found at:

http://www.gao.gov/npi

The Irish Central Statistical Office's *Measuring Ireland's Progress*, at:

http://www.cso.ie/publications/measuringprogress/indicatorsreportfull.pdf

Other useful references are provided by the International Institute of Sustainable Development's web site, at:

http://www.iisd.c

BIBLIOGRAPHY

HEALTH

Australian Bureau of Statistics 2004, *Australian Historical Population Statistics, cat. no. 3105.0.65.001*, ABS, Canberra.

Australian Bureau of Statistics 2004, *Deaths, Australia, 2004, cat. no. 3302.0*, ABS, Canberra.

EDUCATION AND TRAINING

Australian Bureau of Statistics 2005, *Education and Work, Australia, 2005, cat. no. 6227.0*, ABS, Canberra.

WORK

Australian Bureau of Statistics 2005, *Labour Force, Australia, 2005, cat. no. 6202.0*, ABS, Canberra.

Australian Bureau of Statistics 2006, *Australian Labour Market Statistics, 2006, cat. no. 6105.0*, ABS, Canberra.

NATIONAL INCOME

Australian Bureau of Statistics 2005, *Australian System of National Accounts, 2004-2005, cat. no. 5204.0*, ABS, Canberra.

ECONOMIC HARDSHIP

Australian Bureau of Statistics 2004, *Household Income and Income Distribution, Australia, 2003-2004, cat. no. 6523.0*, ABS, Canberra.

NATIONAL WEALTH

Australian Bureau of Statistics 2005, *Australian System of National Accounts, 2004-2005, cat. no. 5204.0*, ABS, Canberra.

HOUSING

Australian Bureau of Statistics 2005, *Australian System of National Accounts, 2004-2005, cat. no. 5204.0*, ABS, Canberra.

Australian Bureau of Statistics 2005, Survey of Income and Housing, 2003-2004, data available on request.

PRODUCTIVITY

Australian Bureau of Statistics 2005, *Australian System of National Accounts, 2004-2005, cat. no. 5204.0*, ABS, Canberra.

THE NATURAL LANDSCAPE

Schedules to the *Environment Protection and Biodiversity Conservation Act 1999*.

Australian Greenhouse Office 2005, *National Greenhouse Gas Inventory 2003*, AGO, Canberra.www.greenhouse.gov.au/inventory/2003/index.html#summary, last viewed 27 March 2006.

National Land and Water Resources Audit 2001, *Australian Dryland Salinity Assessment 2000*, audit.ea.gov.au/ANRA/land/docs/national/Salinity_AUS.html, last viewed 27 March 2006.

National Land and Water Resources Audit 2001, *Australians and Natural Resource Management 2001*, audit.ea.gov.au/ANRA/people/docs/national/anrm_report/anrm_productivity.cfm, last viewed 27 March 2006.

National Land and Water Resources Audit 2001, *Australian Water Resources Assessment 2000*, audit.ea.gov.au/ANRA/water/docs/national/Water_Sust_Mgmt.html, last viewed 27 March 2006.

THE AIR AND ATMOSPHERE

New South Wales Environmental Protection Agency (EPA), Sydney 2006; Queensland EPA, Brisbane 2006; South Australia EPA, Adelaide 2006; Victoria EPA, Melbourne 2006; Western Australia EPA, Perth 2006.

Australian Greenhouse Office 2005, *National Greenhouse Gas Inventory 2003*, www.greenhouse.gov.au/inventory/2003/index.html#summary, last viewed 27 March 2006.

OCEANS AND ESTUARIES

National Land and Water Resources Audit 2002, *Australian Catchment, River and Estuary Condition 2002*, audit.ea.gov.au/ANRA/coasts/docs/estuary_assessment/Est_Assessment.cfm, last viewed 27 March 2006.

FAMILY, COMMUNITY AND SOCIAL COHESION

Australian Bureau of Statistics 2001, *Voluntary Work, Australia, 2000, cat. no. 4441.0*, ABS, Canberra.

Australian Bureau of Statistics 2003, *General Social Survey, Summary Results, 2002*, ABS, Canberra.

CRIME

Australian Bureau of Statistics 2006, *Crime and Safety, Australia, 2005, cat. no. 4509.0*, ABS, Canberra.

DEMOCRACY, GOVERNANCE AND CITIZENSHIP

Australian Electoral Commission 2005, *AEC Annual Report 2004–05*, http://www.aec.gov.au/_content/what/publications/annual_report/2005/pdf/AEC0405annual_report.pdf, last viewed 27 March 2006.

Australian Electoral Commission (AEC) 2005, *Behind the scenes, AEC Federal Election Report 2004*, AEC, Canberra.

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