

Standing Committee on Climate Change, Environment and Water

Inquiry into Ecological Carrying Capacity of the ACT and Region

ACT NRM Council

November 2010

The ACT Natural Resource Management Council is pleased to have the opportunity to contribute to this review. The Council is a non-statutory Council that provides advice to the ACT Government and the Australian Government on a package of its investments in the repair and protection of natural resources in the ACT.

The Council recognises that the people of the ACT have impacts on natural resources that lie far beyond its borders. In its natural resource management plan of 2009, “Bush Capital Legacy: Iconic City, Iconic Natural Resources”, the Council proposed that reducing the ecological footprint of the ACT is an essential task to undertake if the ACT is to improve its sustainability. The Plan made the ACT ecological footprint the first target in its plan and proposed that the people of the ACT work towards a reduction of 30% in its per capita footprint by 2030. The Plan points out that if population continues to grow, and at a rate of 1% per annum, a 30% decrease in per capita footprint by 2030 will have resulted only in an actual 10% decrease in the total impact (per capita footprint x population).

In response to the specific terms of reference of the inquiry:

a) The resources available to the ACT in terms of water, energy and food sourced from within the Territory and outside it.

Clearly the ACT sources the bulk of its energy and food, and some of its water from outside the Territory. However, we don't believe that this is a focal issue. Even if we were to develop the infrastructure to generate more energy or grow more food in the ACT, the important issue in terms of ecological impact is the form of energy and the nature of the food production and distribution system. Simply shifting the *same* sort of energy and food production systems from elsewhere to the ACT may have little impact on our ecological footprint because the transport component is only one of many in the production and delivery of food. In some cases, the inherent properties (eg soils, temperature, rainfall) of places can make food production away from its place of consumption more beneficial in terms of footprint. For example, a New Zealand study of the carbon footprint of producing lamb in New Zealand and shipping it to England found that the carbon footprint of NZ lamb production was about one quarter of that for lamb produced in the UK¹. The long shipping journey accounted for only 10% of the carbon footprint of NZ lamb.

There is inadequate data available to make judgements about the desirability of more local food production in the ACT and immediate region on the basis of ecological footprint. Such studies would be absolute prerequisites to making decisions about encouraging local food production so that the ecological benefits can be assured. These decisions would also need to take into account the social benefits of backyard and community gardening and potential regional economic benefits.

b) Effective measures for assessing ecological footprint and carrying capacity.

¹ Saunders C, Barber A and Taylor, G (2006) Food Miles – Comparative Energy/Emissions Performance of New Zealand's Agriculture Industry. Research Report 285, Lincoln University, Christchurch

The Council supports the use of ecological footprint methodology like that developed by the University of Sydney and applied in the last ACT State of the Environment Report. With experience and interaction with the world wide scientific community, the methodology is continuing to be improved. The strength of an integrated ecological footprint measure is that people generally grasp the concept quickly and do not need to understand the detail in order to get the message.

The conceptual basis of ecological footprint measurement is sound but as with all methodologies that integrate across diverse components of what we consider to be 'sustainability', and then put them into a single measure, they must be considered a summary and a guide rather than a precise assessment. When it comes to devising strategies for reducing the footprint, more detailed assessments of the components of the footprint are needed so that action can be targeted on those that contribute the most to the footprint and/or are most amenable to change.

Beyond that there are additional aspects of sustainability that are not picked up in such measures of ecological footprint. For example, pollution (except for carbon 'pollution') of air, land and water would need to be assessed independently of an integrated ecological footprint.

When using an ecological footprint measure that reports footprint on a per capita basis, it is crucial to also report on the aggregated impact of the whole population. Gains in the ecological sustainability of a population that are reached through reducing per capita footprint will be quickly eroded if population continues to grow.

c) Current levels of resource use by ACT residents, including:

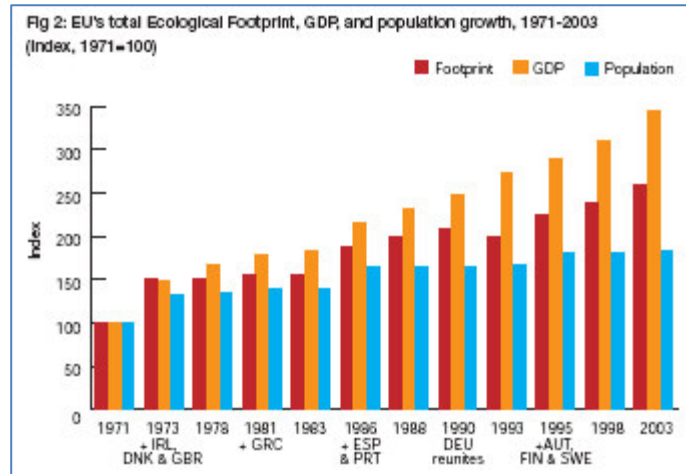
i. The current size of the ACT urban, ecological and carbon footprints and how this compares to national average and similar sized cities globally.

The ecological footprint calculated for the last State of the Environment Report revealed an average ACT footprint that was 17% higher than the Australian average². The key to understanding the reason for this is the strong linkage between wealth and footprint. The ACT has Australia's highest per capita income. In 2004, per capita gross income in Australia was nearly 40% higher than the Australian average (from ABS data catalogues 5220019 and 5220020). Some of this income is saved, but much is spent on goods and services that each come with their own ecological footprint.

The links between wealth and footprint are well illustrated in the following graph that tracks the footprint, GDP and population of the European Union since 1971³. Some decoupling of footprint from GDP is apparent: the footprint rose 140% while GDP rose 240% and population 70%, but it is clear that the additional GDP has pulled the footprint up at twice the rate of increase of population.

² Centre for Integrated Sustainability Analysis (2008) The 2003-04 Ecological Footprint of the Population of Canberra. University of Sydney.

³ Global Footprint Network (2007) Europe 2007. Gross Domestic Product and Ecological Footprint <http://www.wwf.se/source.php/1149816/Europe%202007%20%20GDP%20and%20Ecological%20Footprint.pdf>

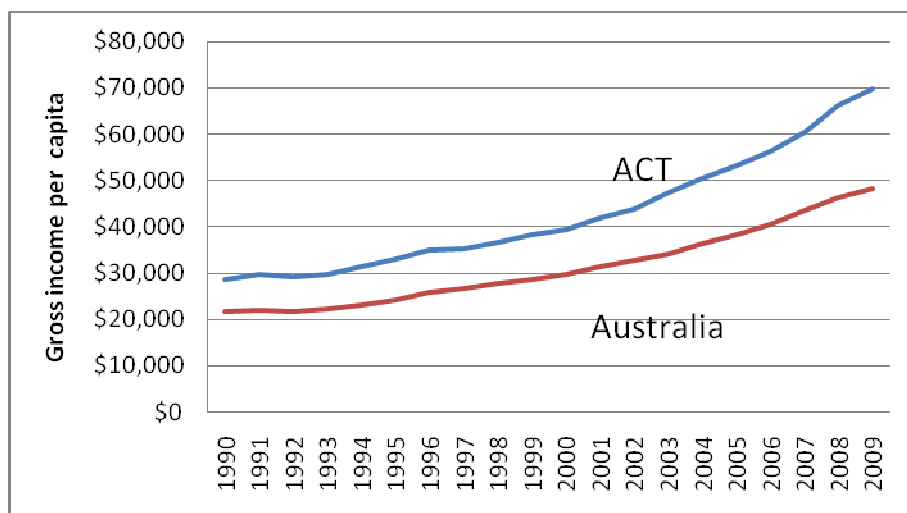


The per capita footprint in Australia as a whole is high by world standards, so the fact that the ACT has the highest footprint in Australia means that the ACT would be rated amongst the least sustainable populations in the world. The EU per capita footprint was 4.7 global hectares in 2003 (data from the same report as the figure above), compared to the ACT measure of 8.5 for 2004. Some care has to be taken in these comparisons because methodological developments over time produces some variation between calculations. Australia was ranked 9th in the world in the size of its per capita footprint in an assessment by the Global Footprint Network after United Arab Emirates, Qatar, Bahrain, Denmark, Belgium, USA, Estonia and Canada⁴.

ii. Trends in resource use in the ACT and the sustainability or otherwise of these trends continuing.

The per capita ACT ecological footprint rose by 15% between 1999 and 2004, according to the same study referred to above. This is consistent with the trend of rising incomes illustrated in the graph below (drawn from ABS data in Catalogues 5220019 and 5220020). Gross per capita income in the ACT rose 24% in the same interval as the footprint rose 15%.

⁴ WWF (2010) Living Planet Report. <http://www.footprintnetwork.org/press/LPR2010.pdf>



The trend in incomes and Australian (indeed global) societies' tendencies to consume more goods and services when they have more money means it is highly likely that the ACT will continue the trend of becoming less sustainable. Only when much more sustainable methods of producing those goods and services can be devised and implemented, and/or people reduce their consumption willingly (unlikely given today's cultural paradigm), and/or global events and forces reduce incomes, will the trend in footprint be turned around.

d) A sustainable level of resource use, in terms of ACT urban, ecological and carbon footprints, for the ACT.

Using the ecological footprint methodology, the Living Planet Report calculates that the planet has capacity to sustainably support the world's population of today if their average footprint was 1.8 global hectares. Since the trend in global population is to continue to increase while the area of bioproductive land remains constant, the amount of bioproductive land available per capita will progressively reduce. If the ACT wants to aim for a genuinely sustainable level of resource use, the target needs to be down near that level.

e) Appropriate ecological carrying capacities based on current, higher and lower consumption models.

No comment.

f) Effective measures for reducing the ACT's ecological footprint.

Making significant progress in reducing our ecological footprint requires behaviour shifts that can be supported and encouraged through market mechanisms like a price on carbon as well as other incentives and educational programs. The Council recognises this need for behaviour change but as a foundational task it is important to establish current levels of understanding so that progress can be effectively measured and monitored. The ACT Government through its ACTSmart programs is providing a useful lead. These programs are being developed using community based social marketing principles and practice, which is improving their effectiveness in shifting behaviours.

Government investment and regulation will also play vital role. For example, requiring food to be labelled with a rating system that reflects the sustainability of its production will be an absolute requirement if consumers are going to change their food purchasing behaviours, and this requires government legislation. The same applies to the footprints of other consumer products.

A significant portion of the ACT ecological footprint (eg high car use) comes from the nature of Canberra's urban design and this will require legislative and incentive measures to address, as well as significant infrastructure investments eg in public transport. Locating more work opportunities closer to where people live eg in Gungahlin would reduce car usage and road congestion.

Urban intensification is important for reducing our ecological footprint but care needs to be taken that not all opportunities for growing food in backyards and community gardens disappears.

Urban centres, such as Canberra are effectively nutrient sinks as food and other materials are imported, and waste products accumulate in tips, infrastructure and waste treatment products. Food waste is a contemporary and growing issue that needs a response such as community collection and composting that encourages recycling of organic matter.

Fundamental to success in tackling our footprint is the need for effective alignment and coordination of actions by all sectors of the community. Building strong partnerships between government and community and business will help ensure better outcomes.

Leadership in developing effective measures can come from any sector and maintaining an open and receptive attitude to new ideas and approaches will also be important in addressing our footprint. This is especially important for governments where there is a natural tendency to stifle innovation and adopt conservative, cautious responses. The challenge will be to promote a culture of innovation because clearly the solutions have yet to be defined for much of what contributes to our current footprint. There is a need to recognise and encourage the role of 'early adopters' in the community, private individuals or organisations who can pioneer the application of new ideas and technologies that demonstrate new ways of living that reduce their ecological footprint.

In designing actions to address ecological footprint, it will be important to ensure that individual actions are tested against their impact on the whole footprint. Governments tend to develop policies and programs in discrete packages and if these are not tested for their broader impact there is a danger that the real outcome will be a deterioration in the footprint, not an improvement. An example is the move to convert flood irrigation systems to pressurised delivery systems which save the water the program intended, but require additional energy inputs. Other examples include replacing equipment and infrastructure with more energy efficient models in order to achieve energy savings, but not taking into account embodied energy in the products; and the ACT Government's decision some years ago to open school enrolment to 'outside area' families, thus contributing to today's practice of transporting school students across Canberra, adding to energy use and road congestion.

g) The environmental, economic and social impacts of reduced resource consumption and a sustainable population

Predicting economic and social impacts of significant change is practically impossible, although they will clearly play a part in helping make choices between reforms in the short term. Big changes often stimulate innovation and new economic opportunities, which are usually under-rated in economic

assessments. The same probably applies to social impacts. People adapt and each new generation has a different set of expectations. There are also likely to be some social benefits from a move to more ecologically sustainable lifestyles. Walking more and eating less meat and more vegetables has benefits for people as well as the environment.

h) The role of the ACT in the region in relation to population and resource use

Many natural resource issues in the ACT are strongly linked with the wider region and we strongly support actions to develop more consistent natural resource management approaches across borders.