



Public Health Association
AUSTRALIA

**Submission from the Public Health Association of Australia on
the Sustainable Population Strategy**

The Public Health Association of Australia (PHAA) believes the idea of a sustainable population can only have meaning within a broad context where measures to address both environmental and social determinants of health, human wellbeing and ecological sustainability are placed at the heart of any future government policy agenda. On a finite planet ongoing successful human survival depends, at the most fundamental level, on a functioning ecosystem that delivers the ecosystem services that we rely on for fresh air, clean water, and agriculture and food security.

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Background

The Public Health Association of Australia (PHAA) provides forums for discussions on public health in Australia and a voice that advocates through a strong membership (1800 in January 2011) of professional public health workers which span the health spectrum for better public health research, policies, programs and funding.

PHAA is founded on values of social justice and a focus on addressing the environmental and social determinants of health and wellbeing, social injustice, health inequalities and inequities¹.

PHAA policies and position statements form the basis for public health action for the association and cover a wide range of public health issues including a sustainable population for Australia (see Attachment 1) and primary health care (Attachment 2).

PHAA believes that this is a very timely discussion and appreciates the opportunity to make a submission to the inquiry. The submission is in two parts. The first part addresses some broad strategic issues which impact on social and environmental sustainability. The second responds in more detail to the questions raised in the Discussion Paper¹.

Introduction

The PHAA has a Sustainable Population for Australia Policy which is attached². This Policy document sets out the issues that PHAA believes are important factors in this discussion. These include: services and infrastructure impacts, food security and nutrition, housing, education and training, environmental damage and international development responsibilities. This policy document should be read in conjunction with this submission.

For the purposes of this submission, “[a] sustainable human society is one that provides food, settlements, energy, transport and leisure within the ecological boundaries of the planet for the present while also allowing for the needs of future generations”³.

PART 1 – Establishing the principles

1st principle - Ecologically sustainable population

PHAA would like to establish the primary principle that the idea of a sustainable population can only have meaning within a broad context where measures to address both environmental and social determinants of health, human wellbeing and ecological sustainability are placed at the heart of any future government policy agenda. On a finite planet ongoing successful human survival depends at the most fundamental level on a

¹ Public Health Association of Australia Incorporated 7 Constitution and Rules (as of September 2010) <http://www.phaa.net.au/documents/101221%20Final%20Constitution.pdf> <accessed February 21st 2011>

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functioning ecosystem that delivers the ecosystem services that we rely on for fresh air, clean water, and agriculture and food security. These resources and nutrients are recycled through the ecosystem. The buffering capacity of the environment to attenuate toxic human waste is essential to human life. Increased population burden and consequent decreased ecosystem resilience will compromise this buffering capacity and, therefore, human well-being. This principle must be the foundation for all other aspects of human social and economic endeavour. A sustainable population can therefore only occur in the context of ecological sustainability. In this discussion a sustainable population is an ecologically sustainable population.

2nd principle – Share resource and energy fairly

As a second fundamental principle, resource and energy use on the planet should be fairly and equitably distributed among all people. Similarly use of waste sinks should be shared. An increasing population at whatever scale reduces the per capita share each of us can have. If this share is less than required for a reasonable livelihood then all suffer. Additionally increasing numbers of people will tend to increase the amount of resource, energy and waste sink requirements and are more likely to overwhelm natural limits⁴.

The health of the environment is inextricably linked to human health and wellbeing and the fair distribution of health, well-being and sustainability are important social goals for both humans and the environment⁵. PHAA would advocate that tackling social inequalities in health and tackling sustainability and climate change are inextricably linked.

3rd Principle – Build social capital

Third, societies with high levels of social capital encompassing reciprocity and trust, civic engagement, social networks, social policies investing in development of the early years, education and balanced income distribution, enjoy the best health and wellbeing⁶. In contrast to this, in societies where inequities exist, there have been found to be weaker social networks, more aggressive behaviour⁷, increased rates of violent crimes⁸, racial prejudice, a lower social status of women⁹ and higher mortality rates particularly from heart disease and cancers^{10,11}.

4th Principle – Limit of continuous population growth

A fourth principle is that the present and future sustainability and prosperity of other species are important in and of themselves at philosophical and moral levels as much as for services they provide humanity¹².

PHAA supports the thrust and general conclusions of the Demographic Change and Liveability and the Sustainable Development Committees but we think that the Productivity and Prosperity Committee takes an overly optimistic and, by ignoring the fundamental environmental and natural boundaries, environmentally unrealistic approach and ignores the social determinants of health. For instance they still anticipate a negligible environmental impact from a growing population.

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PHAA would also like to establish early on the absurdity of the concept of continuous population growth of any magnitude as a basis for planning socio-economically from here on. A simple exercise can illustrate this.

Assuming no other physical or social factors, two growth rates, one at just below replacement at 19 per cent per decade (~1.9% per annum) and one slightly above replacement rate at 22 per cent per decade (~2.2% per annum), will eventually mean an Australian population of 3.5 billion (plus/minus 10 million) people in 2300. By 2500 population will rise to 112.4 or 115.3 billion for the low and high growth scenarios. In terms of available area and including Australians not actually living on mainland Australia and Tasmania, currently there are about 340 square meters per person for living, working, growing food and leisure activity. In fact the net per person area is much less because of uninhabitable and inaccessible parts of the landmass. By 2350 this will be less than 1 square meter per person and by 2390 it will be less than half a square meter. While this make believe scenario is unlikely, since other factors will come into play sooner to curb population growth, clearly the logic of continuous growth is deeply flawed and the sooner we remove this assumption from our planning the better.

5th Principle – Growth limits on a finite planet

Besides population, PHAA would like the Inquiry to recognise as a fifth principle that there are fundamental and non-negotiable limits to growth on a finite planet with finite resources and finite capacity in ecosystem / natural cycles for supporting human habitation. These spatial, resource and ecosystem limits provide the upper boundary to human expansion. Further expansion of human impact beyond these limits, in particular to exceeding several critical 'planetary boundaries', may undermine the capacity of the planet to support complex industrial human society and in the event of severe escalating climate change, ocean acidification and capacity to grow food may render the planet uninhabitable to the human species¹³. Living within these boundaries is a primary condition for continuing human survival.

PHAA agrees with the report that a single optimal population number is not attainable. However the conditions of planetary boundaries set an upper, albeit not strictly definable limit, to population. Within this upper boundary, there is a considerable range in how many people our planet can sustain. While a single carrying capacity number is not identifiable at global, national and regional scales the concept of carrying capacity is not redundant. A reconfiguration of the Ehrlich-Holdren equation $I=f(PAT)$ to the function $P=f(IAT)$ allows discussion of various options for population levels given a variety of resource and energy use and technology scenarios. In this function, P is population or population carrying capacity, I is human impact, A and T are the resource/energy use and technological situation of society.

Thus $P=f(IAT)$ means that population carrying capacity is a function of human environmental impact, the material and energy resource use and technological aspects of society, which include waste generated. All three factors are inter-related in that each is affected by the others. Assuming that the prerequisite condition of living within the environmental boundaries of the planet are met, a society with low environmental impacts, less energy and materials throughput, and technology that more efficiently uses resources may permit a

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higher population than one with higher material use and more wasteful technologies. However this balance between energy and material inputs and waste outputs is configured, it does not remove the fact that there is ultimately a limit to population for human society to live within our planetary means.

Discussing population in this manner permits research, analysis and discussion of the factors that impinge on population and our ecologically sustainable or unsustainable impact on the environment. Key questions about what sort of human society (whose objective focus on environmental and socio-economic determinants of health and sustainability) we want to live in and what are the best methods for bringing about that society can be asked and answered. PHAA suggests the government may wish to establish a group to identify and define the boundary conditions for Australia under various resource use and technological scenarios.

6th Principle – Impact on social systems

Beside the environmental effects of population, PHAA suggests that a sixth principle involves recognising the scale effects of increasing population on social systems need to be taken into account. These include: psychosocial effects of crowding on social cohesion¹⁴, (die young), demands on infrastructure, capacity to grow and distribute enough food, ability to access and enjoy 'nature' and leisure, challenges to participatory democracy, among others. PHAA agrees with the coverage of these aspects on pages 10 and 19 of the Discussion Paper. In parallel there are impacts from widening economic disparity within and between countries that also have flow on adverse health and societal effects on cohesion¹⁵.

An example of the critical adverse impacts on food security is in South-East Queensland, where population growth has seen fertile 'food bowls' to the East (Redlands) and South (Logan) giving way to urban development. Thus, local food production has deteriorated and a large majority of food is transported long distances via the major population centre of Brisbane. In the early days of the settlement of Sydney, Parramatta was a similar site of food production, in contrast to its present urban form. This has substantial implications for sustainability. In the early half of the 20th century, expansion of food production relied on expansion of arable land, in contrast to the past 60 years which has increasingly relied on enhanced crop yields through intensive fossil fuel based farming using irrigation, chemical fertilisers, pesticides and plant breeding. These contribute to carbon emissions. In the context of 'peaking' of food producing capacity, population limitation is critical for sustaining arable land.

PHAA would also draw the Inquiry's attention to the effects of progressively more expensive and less available petroleum resources (so called peak oil) on Australia's capacity to grow food, on transport and on industry reliant on petrochemical substrates¹⁶.

7th Principle – International role for Australia

As a seventh principle, on an international level, Australia has a role in stabilising international population in developing countries by recognising the key contributions of education generally and particularly for women, female empowerment in the political and economic systems, and access to the full range of reproductive services including

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contraception. For both pragmatic and moral reasons Australia needs to support overseas sustainable economic development through its aid programs and support for the Millennium Development Goals to achieve these outcomes. By doing this future pressure for immigration to Australia will be reduced.

PART 2 – Responding to the detailed questions

The second part of this submission deals with the questions in more detail.

Q1: What issues do you think a Sustainable Population Strategy for Australia should address?

A Sustainable Population Strategy for Australia has to address the principles outlined above, namely a focus on the social and environmental determinants of health within a broad context of human and environmental ecological sustainability placed at the heart of any future government policy agenda. A sustainable Australian population has also to be located in a global context.

The Discussion Paper defines “sustainable population” as one “where changes in the population’s size, distribution or composition are managed to provide for positive economic, environmental and social outcomes” PHAA would dispute that a population can be sustainable without also having “sustainability” founded in an ecological and social health context.

The Strategy should include a clear rationale for sustainability, so that users of the strategy, and the general population of Australia, can understand and contribute to discussion on the issue.

The Strategy should be clear which issues are under debate, and why. Currently debate is based on different interpretation of facts and projections of likely outcomes. There may also be debate about relative importance of protection of ecosystems for their own sake compared with importance for utility by humans. Debate also surrounds the importance and significance of Australia’s role in global affairs. Various options for achieving desired outcomes are also articles for debate. There should be no debate about the need for ecological sustainability.

The Strategy should provide a range of available options based in the type of analysis suggested above for achieving preferred outcomes, for information, debate and discussion among the Australian public. The analysis should produce estimates of the range of population which Australia can sustainably support for extended periods with currently available levels of soil, water, and necessary reductions in greenhouse gas emissions to mitigate global warming.

The Strategy needs to have a method for regular review as our situation evolves.

Q2: What do you think are the key indicators of an environmentally sustainable community?

PHAA has no ready set of precise indicators. We believe however that the current set of indicators of national prosperity based solely on economic and financial items are a poor reflection of social and environmental wellbeing and health. Indeed construction of

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indicators such as GDP actually record environmental destruction and illness as positive ¹⁷. Further, any set of indicators will need regular revision because of new knowledge and progression of environmental and social change.

Sustainability of an environment or a community implies, at bare minimum, a lack of deterioration over time so that both the environment and society are sustained. Based in the definition of ecologically (or environmental) sustainability, indicators of such a society, rather than community,² would broadly be those that measure:

- society's impact on the environment from resource and energy use,
- occupancy of land and sea,
- impact on other species
- impacts from waste both intended and unintended ³.

Items that may be covered in a set of indicators include: ecosystem services required for our basic needs (air quality, clean water, quality and stability of agricultural land, forests and water ways, and status of biological diversity); for regulating our environment (waste treatment, prevention of erosion, and disease and hazard regulation); for supporting nutrient cycles and crop pollination; for cultural services, including spiritual, aesthetic and recreation services; and for preservation services such as the maintenance of biodiversity ¹⁸, p124 and Table FB1 page 125. A focus on management and protection of ecosystems and societies, rather than of species or regions, ensures that people are not vulnerable to stresses on small numbers of species, interactions or local environments any of which are easily lost or destroyed (Chopra et al 2005).

Existing indicator sets that may be modified include:

Australian Bureau of Statistics' Measure of Australia's Progress ¹⁹. This includes measures in the dimensions of *Individuals, Economy and Economic Resources, The Environment and Living Together*.

The Australia Institute's Genuine Progress Indicator: A new index of changes in well-being for Australia is another attempt to build economic, social and environmental factors into a more meaningful indicator of wellbeing ²⁰.

The New Economics Foundation in UK has developed two indices, the Healthy Planet and National Well-being Index, which the efficiency with which countries are able to achieve levels of well-being, as determined by life expectancy and life satisfaction ^{21, 22}. Australia does poorly, rated 102 out of 143 nations, and our low score reflects our huge environmental footprint.

We note that these indices are less focused on environmental quality but would provide the starting point for a more complete index.

² The term society is used rather than community because it captures the broad systemic nature of the matter in contrast to a geographic area.

³ Intended waste is that which is known to occur such as effluent from factories; pharmaceutical agents and personal care products in sewerage that enters the biosphere is an example of unintended waste.

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These criteria and results should be publicised, debated and given wide attention to balance the current emphasis on economic measures alone.

Q3: How have changes in the population impacted on your local environment?

PHAA considers that this question is a distraction from the overall issue of a sustainable population. Any local population may appear relatively sustainable and liveable; however if each is extracting and depleting resources from an overall environment greater than it is replacing then the whole population and the local population are fundamentally unsustainable.

Q4: How might technological or governance improvements mitigate the environmental impacts of population growth?

Governance and technological issues are quite separate. Governance that recognises the principles listed in the first section of this submission is a key requirement. Leadership grounded in what is necessary for the long term wellbeing of the whole community at national and global levels beyond triennial election cycles essential. Governance that recognises the need to cap population growth in the immediate future is important. Governance, while providing leadership, must include the members of Australian society in policy formulation. The final Strategy would do well to incorporate an information and social marketing strategy to promote Australian society's understanding on the situation and what needs to be done to maintain and develop our prosperity.

A whole of government approach incorporating environmental concern and social determinants of health and wellbeing in all portfolio areas is required. One example approaching this is a manual produced by NSW Health for determining the impact of developments on people²³. This draws attention to the range of needs of human settlements. As outlined in the manual these needs are food, physical activity, housing, transport and physical connectivity, employment, safety and security, public open space, social infrastructure, social cohesion and social connectivity, and environment and health. These complement possible indicators given above.

Ecological sustainability can be enhanced by designing urban (and other) localities to be as close to food production and waste management facilities as possible. This promotes local resilience and reduces transport costs and emissions.

The technological subject is covered in the first section of the submission; how we develop our technology for extracting and converting energy and resources for producing the goods and services we need will flow on to the population carrying capacity that is sustainable. Technology that is more efficient and less polluting will contribute more to supporting a sustainable population.

Additional to the technology itself, people's behaviour in using of that technology is critical to its operation. Thus all technological development needs support from a social marketing campaign to ensure optimal use of the technology.

Q5: How do population driven changes in your local economy affect your environment?

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As with question 3, a local assessment and analysis is unlikely to give reliable information. However at a national level there are several policies and program areas where population affects Australia's environment.

At a purely environmental level, degradation and urbanisation of the farmland, crowding and environmental degradation along the coastal fringe, depleting our underground water supply, increased levels of pollution, toxins and other wastes have a large component of population pressure in their origins.

Socially increasing population may lead to increasing transport congestion, loss of social cohesion, loss of opportunities for physical activity and deteriorating infrastructure. Many of these changes are occurring at our current population, and this reflects the lack of sustainability of our lifestyles.

Population increases in the context of more frequent extreme weather events with climate change will further tax the capacities emergency services and increase costs of clean up operations.

Q6: What lessons have we learnt that will help us to better manage the impacts of population change on the environment?

A fundamental weakness of the Discussion Paper is a failure to examine the historical basis of human population growth beyond the recent past. Hunter-gatherer societies maintained relatively static population numbers. Exponential growth in human populations started with the Neolithic revolution and the adoption of agriculture approximately 10 000 years ago. Subsequent technological advances such as the Norfolk revolution (crop rotation), chemical fertilisers and the combustion engine have contributed spikes to the upwards population trajectory since that time. It is the latter that is of particular concern, since current world population depends extensively on food production which is reliant on a declining resource (fossil fuels). As fuel prices, and therefore food prices, increase, there will be substantial disparity in access to food security even within the Australian population. (The enormous expansion of the middle classes on China and India will add further price pressure.) This phenomenon is likely to occur with the population at current levels, let alone if the population increases further.

The essential lessons relate to the size and scale impacts on the environment and society for a population increasing to or even potentially at the level of carrying capacity. The important message here is that we need to ascertain for Australia the carrying capacity given current and likely immediate future resource, energy, waste and habitation impacts balanced with the technological and social arrangements forecast.

More specifically we know that government policy can affect behaviour to promote or inhibit population growth. The Baby Bonus has led to an increase in numbers of women bearing children, especially older and better off women^{24, 25}. The neglect of preceding upgrading hospitals, child care services or schools has increased pressure on these services. While Australia is one of few countries that has been able to reduce its fall in fertility, we have now learnt that financial measures can be effective in increasing fertility. Therefore there should be active preparation for an effect. With the paid parental leave introduced at

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the beginning of 2011, further increases in fertility should be expected, and infrastructure development is urgently required. This form of leadership by government with inadequate times for service development can have adverse effects on people and communities.

Secondly, changes in Australia's immigration scheme which have led to increasing numbers of immigrants in uncapped groups (temporary visas, and student visas) have reduced the capacity to monitor our program. While PHAA supports the concept of the right to freedom of movement, it is important that Australia is able to provide services for people here in an equitable and environmentally sustainable manner. To do so requires us to have accurate demographic information of present and future migrant streams, and policy principles founded on social justice, equity and equality.

A Sustainable Population Strategy should specifically address the potential future contribution to population growth through immigration, a source of tension and debate within the Australian community. Population movement has always been an important determinant of both human and ecosystem well-being. However migration can bring about both positive and negative impacts in environments where people leave, pass through and arrive. Migrants can continue to promote the development of their place of origin when they provide remittances and other contributions. They can transfer knowledge, experience and other human resources to their destination²⁶. Migrants bring their own ecological and environmental beliefs and practices and in a sustainable Australia may need support with adopting local practices.

There may be many reasons for migration in the current and future planetary environment. These include declining access to arable land, decreasing productivity, less liveable urban environments, natural and man-made disasters, degraded resources, and poor employment prospects when people leave their traditional lands²⁷. Australia has accepted international obligations to provide asylum to refugees and PHAA recognises and supports this obligation.

Thus given the human right to movement, the resource implications of Australia's environment and ecosystems, infrastructure and industries, and the variable effects on of people moving to Australia, the overall global impact of movement of people to Australia will be relevant in determining a sustainable population level for Australia. The Sustainable Population Strategy should discuss this issue, rather than leave people wondering.

Q7: What do you see as the defining characteristics of a flourishing and sustainable economy?

As covered already in questions 1 and 2, the defining characteristics of a flourishing economy are those of a sustainable and equitable society, one that puts environmental protection front and centre, together with social wellbeing, and economic prosperity to enable but not undermine the first two elements.

Addressing the social determinants of health and wellbeing will also address economic benefits for the whole of Australian society. Reducing health inequalities will have economic benefits for reducing losses from illness associated with health inequalities through:

- productivity losses,

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- reduced tax revenue,
- higher welfare payments and
- increased treatment costs⁵.

The PHAA does not recommend that economic growth should be the measure of Australia's success.

Defining characteristics for a more equitable and inclusive society have been outlined in the social inclusion policy²⁸ and are fully supported by the PHAA. The PHAA recommends that the following, extracted from the social inclusion principles, should be considered as part of the Strategy.

- reducing disadvantage
- increasing social, civic and economic participation
- developing a greater voice, combined with greater responsibility
- building on individual and community strengths
- building partnerships with key stakeholders
- developing tailored services
- giving high priority to early intervention and prevention
- building joined-up services and whole of government(s) solutions
- using evidence and integrated data to inform policy
- using locational approaches
- planning for sustainability

Q8: Is your community, business or industry facing skills shortages or other immediate economic pressures, and how are these best managed?

The health sector is facing workforce shortages in primary health care and public health. Public health and hospital infrastructure is becoming overloaded. These are not only due to neglect of developing these capacities before increasing population, but also due to other policies and programs successive governments have made over the past four decades.

Strong public health and primary health care principles (disease prevention, health promotion, equity, access and quality of care) should form the basis of any health professional training program and foster interdisciplinary networks.

A reduction in population increase will enable infrastructure development to catch up and to then expand to accommodate existing and future need.

Q9: In the decades to come, what challenges and opportunities will our economy face, and how will they interact with changes in our population?

The Appendices to the discussion paper argue contradictory responses to the effects of population increase and migrants to housing and infrastructure, employment and other needs. Clearly more effective evidence is required, informed through building evidence, community consultation, planning and preparing for future scenarios.

The major transitions mentioned previously are the ones most likely to impact on Australian society and economy; these include the transfer from fossil fuel generated energy to

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renewables with changes in energy and resource consumption and waste production. Population affects these factors by its multiplier pressure. Moving from petroleum based to electric and active transport options will assist emission reductions and increased physical fitness.

Models of climate change show increasing risks of catastrophic events including drought, flood and fire. Preparation for these together with efforts to reduce our greenhouse gas emissions is critical to environmental sustainability, which is core to a surviving economy. The scale effects of a larger population and pressure to live in less safe areas such as flood and storm surge zones will again scale up these effects.

According to the Carbon Pollution Reduction Scheme White Paper ²⁹, Australia's expected population growth to 2020 means that a 34% per capita reduction in greenhouse pollution is needed to achieve only 4% national reduction from 1990 levels. Europe, with slower growth, can achieve 30% total reduction for the same 34% per capita. If we achieve a 34% per capita reduction by 2020, a slight increase in our [population] growth rate could wipe out the gain altogether, whereas immediate adoption of population stabilization strategies could turn 4% into 20% or more [emissions reduction] ... population stabilization adds value to all other efforts, and it is unlikely that effective climate change mitigation will be achieved without it ^{2, p.5}.

Q10: How should we measure the sustainability of our local, regional and national economies?

See Questions 1, 2, 7 and 11.

Q11: What are the things that make your community a good place to live?

A society that is arranged to promote health ^{30, (4)} and lives sustainably in its environment. A set of challenges and opportunities to provide sustainable health and wellbeing for Australians are outlined in the three principles for action in the Commission on Social Determinants of Health *Closing the Gap in a Generation* report ³¹. These are:

1. Improve daily living conditions
2. Tackle the inequitable distribution of power, money and resources
3. Measure and understand the problem and assess the impact of action

The three principles for action also align with reducing health inequalities as outlined in the Marmot review *Fair Society Healthy Lives* ⁵ will require action on six policy objectives:

1. Give every child the best start in life
2. Enable all children young people and adults to maximise their capabilities and have control over their lives
3. Create fair employment and good work for all
4. Ensure healthy standard of living for all
5. Create and develop healthy and sustainable places and communities
6. Strengthen the role and impact of ill health prevention

⁴ See <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>

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Q12: How have changes in the population changed the way you live your life?

While there is no evidence that population increases in industrialised nations are contributing to increased socioeconomic inequity, there is a stronger case for developing nations. Inequity leads to higher rates of morbidity, mortality and disability than the rest of the population³². Less controversially, as discussed before, increased populations are one factor putting increasing pressure on the environment.

Q13: What sustainability issues need to be addressed in order for your community to accommodate a changing Australian population?

These have been listed and discussed previously.

Q14: What are some useful indicators to help measure the liveability and sustainability of our communities?

See Questions 1, 2, 7 and 11.

Conclusion

The PHAA believes that addressing population sustainability must be done within the context of environmental and social determinants of health, human wellbeing and ecological sustainability.

In setting out the seven principles at Part 1 of this response we have attempted to build a sound base upon which policy can be developed. In Part 2 of the response we have attempted to use those principles to address the questions that have been presented in the discussion paper.

We are pleased to have had this opportunity to comment and would be happy to provide any further information or to elaborate on our submission if it was considered helpful.

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Attachments:

1. Sustainable Population for Australia Policy
2. Primary Health Care Policy
3. Preparing for Peak Oil Policy

Submission of the PHAA on the Sustainable Population Strategy

4. Safe Climate Policy
5. Health Inequities Policy

