

A Human Health Submission to the Draft Lake Eyre Basin Strategic Plan

From Professor David Shearman

Bio of Professor David Shearman AM MB, ChB, PhD, FRACP, FRCPE

David Shearman is Emeritus Professor of Medicine at Adelaide University and previously held senior positions at Edinburgh and Yale Universities. He has qualification in medicine and biological science. He has authored many books on climate change, its science, consequences and democratic and other solutions; he served on the IPCC for two terms on health and environmental science sections. He was President of Conservation Council of South Australia and, with the late Professor Tony McMichael, he founded Doctors for the Environment Australia in 2001, serving as Hon Secretary for 16 years. He is author and co-author of several hundred scientific and medical papers and writes frequently for the media. He was awarded an AM for service to medicine and climate change.

Introduction

This is a submission based on human health and environmental sustainability which are closely linked and could deliver a sustainable future for human habitation of the Lake Eyre Basin (LEB). Human health depends ultimately on life support systems of stable climate, water and food which in turn require a stable ecological system to maintain food productivity. These life support systems must be at the forefront of the LEB assessments.

A search of the document finds no mention of human health. The words sustainable and sustainability are used only 3 or 4 times in relation to environment and economics.

Indeed, the Draft Lake Eyre Basin Strategic Plan is a brief sketch of the facts and issues of the basin and the ultimate picture will need to be based on environmental and ecological science and the knowledge gained by Indigenous inhabitants over millennia.

The vital importance of this review is signalled by the failure of COP 27 and previous COPs which indicate to the majority of scientists that world temperatures rises of 2-3 degrees C will occur this century. Accordingly whilst we must continue to reduce emissions, our main effort should be in stabilising a fast deteriorating environments. The LEB is vital to this effort for it represents one sixth of the land area of Australia and may not have yet suffered the environmental damage documented in most other regions.

I endorse the following submission, https://assets.nationbuilder.com/aridlands/pages/57/attachments/original/1668384959/QCC_ALEC_CCSA_LEBSP_Submission%28F%29.pdf?1668384959

My submission attempts to complement its findings in the important context of human health and sustainability within the LEB.

I am grateful for permission to make this submission two weeks late because of illness. I apologise that it is not fully referenced and lacks some detail. I am willing to help by further developing any of the themes.

Human health and sustainability in the LEB

The health issues which are essential in the future report are **Water**, its sustainability, purity and freedom from future contamination, and the **physical and mental health of the inhabitants** and their future sustainability in the LEB environment, which requires focussing predominantly on Aboriginal health.

Establishment of water Priorities

Water resource management in the LEB should be based upon a simple understanding of priorities which requires a change in current thinking and attitudes.

As a first priority water must be provided for the basic needs of people, particularly considering the physiological requirement for water in high temperatures. At the same time water is vital for the sustainability of the biodiversity and ecological services and for food production.

As the third priority the remaining water can be used for economic activity but will require its own list of proprieties based on usage and its economic importance to the nation.

The need for water is a human right, and this right also indicates it should not be contaminated.

The Great Artesian Basin

The Basin spans almost 1.7 million square km (over one-fifth of the Australian continent) and has a storage capacity of 64,900 million ML. It connects with the Murray–Darling Basin and the Lake Eyre Basin and lies beneath parts of the Northern Territory, Queensland, South Australia and New South Wales. It includes the Eromanga, Surat and Carpentaria geological basins.

It should be crystal clear to Australian governments that the Great Artesian Basin (GAB) must be preserved as a secure source of potable water for human use within and beyond LEB needs during the emerging climate crisis this century,

Yet, health and wellbeing are still ignored in water planning. For example, the Draft Great Artesian Basin Strategic Management Plan 2019 lists seven guiding principles, none of which mention human health or sustainability. However, the Plan did contain one paragraph of reality.

“Groundwater in the basin although substantial is finite. In most parts of the Basin recharge rates have declined over geological time so the reuse is in natural decline. This means that, even if humans were not extracting water the volume of water and water pressure in the basin would continue falling. As the extraction of water has significantly increased the speed of this decline, the plan seeks to encourage actions which ensure judicious use of water”

Threats to the GAB

These are of paramount importance because they are threats to the sustainability of the LEB.

Current Water overuse is a significant threat. Existing evidence suggests a decline in storage and this is confirmed by the continuing decline of the Mound Springs with significant ecological consequences.

Implicated in this decline is industrial use and pastoral grazing.

The national usage of GAB water tells us much about the philosophy of current water usage.

For example BHP’s proposed expansion of the Olympic Dam copper-uranium mine recently included a request to increase extraction of water from the Great Artesian Basin to provide an annual average rate of 50 million litres a day (Ml/d), an increase from the current maximum of 42 Ml/day. This has now been disallowed.

An Indenture from 1982 provided for priority GAB water extraction by BHP far ahead of the start of mining in 1988. In fact the Indenture was passed to overrule opposition on environmental and other grounds such as future human needs and any future objections in advance of mining operations.

On reflection the Indenture Act overruling human need in the driest state in Australia was a disgrace. Today this philosophy remains though rarely stated. It has been applied in the case of GAB water use in the Carmichael and Surat Basins and in many other GAB regions.

The same errant philosophy on water usage applies to exploration and mining for gas with a succession of approvals culminating in the November 2022 approval at Eromanga. Gas mining has a prodigious use of water and there are many health dangers as listed below. Authority from the Queensland Government Department of Environment and science has been granted for

'prospecting' at Eromanga within the LEB. To facilitate exploration state governments use such a perfunctory assessment. Then the state approves subsequent recourse development under the Regional Planning Interests. This is a more thorough assessment - which is under pressure to accede because the state wants the development. In this regard we must note Professor Graeme Samuel in his review of the EPBC Act said very circumspectly;-

"The proportion of projects covered by an assessment bilateral agreement is limited, because not all State and Territory processes can deliver an adequate assessment of matters that are protected under the EPBC Act. This is largely due to a lower standard, or absence, of a process for certain impacts, in State and Territory arrangements".

It is important to recognise that this inadequate assessment by states includes their frequent avoidance of Health Impact Assessment (HIA) which would register Aboriginal health concerns. This is explained in the following article <https://johnmenadue.com/beetaloo-shows-its-time-to-resurrect-health-impact-assessments-and-save-lives/>

All gas developments in the LEB carry significant risk to the secure water of the GAB and related aquifers. Indeed water is being used for many developments in a way that transgresses many of the existing current requirements in the National Water Initiative. This is particularly the case in Queensland where the overuse of is dismissed, for example this is demonstrated in this study of the Underground Water Impact for the Surat Cumulative Management Area <https://dea.org.au/underground-water-impact-report-for-the-surat-cumulative-management-area-july-2019/>

The main health concern is the potential contamination by Endocrine Disrupting Chemicals (which have similarities to PFAS), Polycyclic Aromatic Hydrocarbons (PAHs) and other chemicals from gas mining which may be the cause of many diseases such as cancer and birth defects increasingly reported in US gas fields. Evidence of poor health outcomes among those living near to gas developments is getting stronger every month, especially those affecting unborn babies and an increase in childhood leukaemia.

For extensive review see <https://apo.org.au/node/208281> and <https://apo.org.au/sites/default/files/resource-files//apo-nid319415.pdf>

The progression of gas industry development presents a huge threat to its future sustainability as detailed by one of Australia's leading scientists. <https://theconversation.com/the-magnificent-lake-eyre-basin-is-threatened-by-831-oil-and-gas-wells-and-more-are-planned-is-that-what-australians-really-want-191078>

Many of these chemicals do not degrade and remain in water and soil for decades. Within the LEB the inland drainage of rivers and water courses

ensures these chemicals are retained and we have a situation where pollution for Queensland gas fields can flow into SA and be retained there.

Pastoral activity

Pastoral activity is a major threat to the LEB because its sustainability is not known. Governments have shown disregard, indeed the previous SA government intended to increase pastoral leases to 100 years and to give graziers more responsibility for stocking levels. This was scrapped by the incoming government which moved responsibility from the Pastoral to the Environment department <https://www.abc.net.au/news/2022-04-09/proposed-pastoral-land-reforms-scrapped/100979582>

The report from the Conservation Councils and Arid Lands Council appropriately states "the short section on land and water degradation fails to clearly acknowledge the following "higher risk threats"

- High total grazing pressure from livestock, feral pests and native graziers, or in combination,
- Disturbance to water features by feral animals and livestock and,
- Lack of data, information and certainty

On the first two of the above points, the draft LEB SP simply notes that "pastoral leaseholders are required to manage land in ways that prevent further land degradation", which completely ignores the fact that the abovementioned threats are not currently being adequately managed under such legislation

Aboriginal inhabitation and its implications

The Australian white community has yet to recognise the dependence of Aboriginal health and well being on their close relationship to the land and to nature. Health and the environment in their stewardship of land are indivisible and have remained so in the Aboriginal mind, but which our western culture has divorced from our concept of "progress" which involves consumption of the natural environment. This has led to Australia having one of the fastest deteriorating environments in any developed country.

The Uluru Statement from the Heart says this sovereignty of the Aboriginal and Torres Strait Islander nations is a "spiritual notion: the ancestral tie between the land, or 'mother nature', and the Aboriginal and Torres Strait Islander peoples who were born there-from, remain attached thereto, and must one day return thither to be united with our ancestors. This link is the basis of the ownership of the soil, or better, of sovereignty. It has never been ceded or extinguished, and co-exists with the sovereignty of the Crown".

<https://fromtheheart.com.au/uluru-statement/the-statement/>

It is also becoming recognised that this stewardship is needed for environmental recovery <https://theconversation.com/recognising-indigenous-knowledges-is-not-just-culturally-sound-its-good-science-184444> and it should be applied to the LEB which is under assault by several degrading forces, water extraction and pollutions, an aggressive gas industry and pastoral activity.

A commencement of a much needed journey should be by adopting and using in the LEB the principles of The United Nations Declaration on the Rights of Indigenous Peoples. These were adopted by the General Assembly on Thursday, 13 September 2007 and endorsed by Australia in 2009. The failure to honour this agreement in practice is detailed in this submission to parliament with detail of several instances where positive environmental outcomes might otherwise have been achieved. https://assets.nationbuilder.com/aridlands/pages/57/attachments/original/1668384959/QCC_ALEC_CCSA_LEBSP_Submission%28F%29.pdf?1668384959

Aboriginal leadership is essential <https://theconversation.com/without-indigenous-leadership-attempts-to-stop-the-tide-of-destruction-against-nature-will-fail-196208> and yet Aboriginal opinion is dismissed, evaded by gas companies and its importance remains unrecognised by governments.

Aboriginal health is also damaged by distress and disturbance to psychological, social and spiritual health, from despair at loss of heritage and environmental integrity particularly by the gas industry. This issue is compounded by government failures to use Health Impact assessments as detailed above.

The way forward with appropriate forms of interaction is described in this recent study. <https://www.croakey.org/from-the-torres-strait-a-call-for-community-leaders-to-be-at-the-centre-of-loss-and-damage-reparations-and-climate-action/>

We must also detail the physical health needs of all inhabitants of the LEB which under progression of climate change which will become an increasing threat from extreme heat. These needs are considerable as detailed here <https://johnmenadue.com/deaths-from-heat-waves-and-their-prevention-by-community-shelters/>

Recommendations

It is not apparent from the draft plan what process is envisaged to develop a cohesive plan which expands the scientific knowledge so that a 50 year or end of century vision is developed.

However, whatever process is selected a widening of expertise is needed;-

1 Expert water science is needed to increase the knowledge about groundwater and aquifers and their communication with the GAB. Also a more detailed study of GAB replenishment is required. The scientific expertise similar to that of The Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development is needed both in relation for the needs of the entire LEB but also in the areas already subject to gas development

2 Bureau of Meteorology expertise is needed to interpret water studies in the light of progressing climate change. This data is also required in relation to the understanding of stresses to ecological systems.

3 Pastoral activity and its control must be included in all future studies. It is essential that selective areas be destocked, fenced and feral animals and buffel grass removed. These areas should be studied over years for regeneration.

The rationale is as follows; - the ecological systems of the LEB clearly have adaptive systems for extreme heat and drought and very occasional flood. It is likely we can learn ecological lessons which may well apply to other degraded arid areas in the world which are rapidly undergoing desertification. The ecosystems of the LEB are likely to teach us how adaptation to heat occurs which are relevant to food productivity.

<https://www.sciencedaily.com/releases/2022/12/221219094915.htm>

Such studies in fenced areas may take 50 years but could be vital to sustainability in Australia.

4 Health expertise is needed to document and explain the health hazards from gas mining; there is a rapidly increasing documentation of these in the scientific literature. Living in LEB will need special health and wellbeing expertise some of which is already available from Aboriginal wisdom; we need to learn to connect with it and bring to it through special consultation processes together with our technological skill to withstand hot climates.

Accordingly health expertise is vital in future deliberation which will be a blend of public health and Aboriginal wisdom as explained by the essence of this submission- human health and the natural environment are indivisible.

Professor David Shearman AM PhD FRACP FRCPE, E/Professor of Medicine,
University of Adelaide, South Australia
Website/blog www.davidshearman.org
Co-Founder, Doctors for the Environment Australia

2 Reynolds Drive Crafers 5152 SA
22 December 2022