Murray-Darling Basin Royal Commission & the Law-Science Linkage

Part 4: The Basin Plan & Ecologically Sustainable Development – An Achievable Long-term Solution or an Illusory Bargain?

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Disclosure Statement

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Key Issue to be Reviewed: *Ecologically Sustainable Development ("ESD")*

The release of the Murray-Darling Basin Royal Commission's Report in January 2019 - and the response to the Commission's findings by the Murray-Darling Basin Authority in February 2019 – ignited public concern over some of the Murray-Darling Basin Plan's outcomes.

The following scenarios identify economic and environmental ***concerns some regional communities*** have arising from Basin Plan outcomes: Victorian farmers failing, shops closing and real estate signs going up; whether the Goulburn Valley will slowly move from 'the 'food bowl' to 'the dust bowl'.

The following statement by ***Nick James***, the *Chair of the newly-formed Northern Victoria Irrigation Communities* gives insight into community Basin Plan concerns; especially, for finding solutions for Basin Plan's outcomes to meet the needs the community seeks to resolve their concerns in:

"We're not looking for a short-term fix.
We're not looking for a good rain
or some environmental water to come on the market.
That's just a band aid to fix cancer.
We're looking for long-term solutions
to make it sustainable for the next generations."

In this regard, the Federal Water Act 2007 **[at ss. 21(4)(a)**] is relevant as it imposes a legal obligation that resonates with community needs for achieving sustainable long-term solutions in the Basin Plan.

In developing the Basin Plan,

the MDB Authority must take into account

the ***principles of ecologically sustainable development ("ESD")***.

There are ***five principles for ESD***[1] specified in the Water Act; all five principles are relevant considerations that must be assessed in order for the Basin Plan to achieve sustainable long-term solutions.

The first principle for ESD prescribed in the Water Act is the most widely recognized. It is often described by science in an accepted "shorthand form" that reflects the multiple and competing objectives of ESD – *environmental, economic* and *social (including cultural)* - as ***"the triple bottom line"*:**

- ***"Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations": Subsection 4(2)(a).***

Developing the Basin Plan is a classic sustainable development issue? The controversy to achieve it is a feature of public interest environmental conflicts!

But ***the author's review*** indicates some uncertainty between MDB Royal Commission findings, the MDB Authority's response and ESD outcomes.

Specifically, whether Basin Plan outcomes provides a framework for achieving sustainable long-term solutions in accordance with the statutory meaning of *ecologically sustainable development* in the Federal Water Act?

MDB Plan: Areas of Uncertainty

ISSUE 1: *Basin Plan decision-making and primacy under the Water Act: The sequence for setting environmentally sustainable limits and evaluating ESD's multiple and competing objectives.*

"The ***central legal requirement of the Basin Plan*** is to set *environmentally sustainable limits* on the amount of water that can be taken from the Basin's water resources [streams, rivers and aquifers] into the future".

The limits prescribed by the Water Act for the Basin Plan are:

(a) A long-term *Sustainable Diversion Limit* ("SDL"): **Section 22**; and

(b) For the SDL to reflect an *Environmentally Sustainable Level of Take* ("ESLT"): **Subsection 23(1).**

The issue for Basin Plan decision-making that arises is:

Whether the assessment and balancing (or "optimisation")
of all multiple and competing objectives for ESD
should be undertaken simultaneously
as the determinations that set an SDL or an ESLT;
alternatively, to follow after the SDL or ESLT have been set?

ISSUE 2: *The scientific methodology used by the MDB Authority to derive ESD outcomes in developing the Basin Plan.*

The issue for Basin Plan decision-making that arises is:

Whether the methodology adopted by the MDB Authority
forms part of a body of knowledge
which is sufficiently organised, or recognised,
to be generally accepted as a reliable body of knowledge
in environmental management and environmental planning to
facilitate decision-making when the environment is in issue?

Understanding ESD in a Nutshell

Preparing the Murray-Darling Basin Plan imposes complex, difficult environmental issues for achieving sustainable outcomes – in terms of time, scale, extent, and risk of potential environmental impacts.

To achieve sustainable long-term solutions,
the goal of the Basin Plan should be to secure,
at the very least,
as much available value as possible
for MDB communities (both local and Indigenous),
irrigators (both upstream and downstream),
environmentalists, recreation users
and Government.

The framework to avoid potential future conflicts over Basin Plan outcomes prepared under the Water Act is crucial. In this regard: -

- **All multiple and competing objectives of *ecologically sustainable development – environmental, economic, social (including cultural)* - must be assessed and balanced, *equitably.***
- **Decision-making processes should effectively integrate both long-term and short-term considerations.**
- **A sustainable solution is not weighted in favour of only one of the multiple and competing objectives of ESD.**

Equity is a legal obligation under the Water Act and an integral element of the statutory meaning for the ESD concept.

The plain and legal meanings
of 'equity' are similar:
"fairness", "justice."

Equity is also a cornerstone of the "*fair treatment*" element of the concept of ***environmental justice***. It is a relevant consideration for understanding the application of the linkage between equity and ESD for decision-making when determining Basin Plan outcomes.

Basin Plan outcomes
should minimise the extent
to which environmental costs and benefits
are shared disproportionately between
MDB communities (both local and Indigenous),
irrigators (both upstream and downstream),
environmentalists, recreation users
and Government.

Issue 1~ Review
Water Act – Primacy - Setting Environmentally Sustainable Limits – ESD

There would be little dispute that "*the **Basin Plan, at its core**, is about reducing the amount of water that can be extracted from its streams, rivers and aquifers":* The limits prescribed by the Water Act are the SDL and ESLT.

But the issue under review is a question of primacy: The integration and sequencing between the decision-making processes for setting environmentally sustainable limits and evaluating ESD options? The information conflict is:

- **Whether, or not, decision-making for setting environmentally sustainable limits should procced concurrently with the evaluation of ESD options?**

An appropriate pathway to review
for going forward to resolve this issue for the Basin Plan
can be derived by reference to the UN model
to address the global problem of climate change -
where the equivalent issue confronting the MDB exists.

The core of the UN's *Paris Agreement (2015)* is to significantly reduce the risks and impacts of climate change by setting long-term temperature goals to hold the increase in global temperature rise to well below 2°C above pre-industrial levels; and to pursue efforts to limit the increase to 1.5°C.

These temperature goals were not prescribed as legal obligations under the three climate change treaties: *UNFCCC (1992), Kyoto Protocol (1997), or the Paris Agreement*.

Rather, the setting of the temperature goals were reached by agreement by the almost 200 nations that are signatories to the climate change treaties – following extensive global scientific research undertaken on behalf of the UN.

However, the Paris Agreement (Article 4) imposes legal obligations on nations that have ratified the Agreement to meet its long-temperature goals:

- ***Obligations that require the reduction of GHG emissions, to be made on the basis of equity and in the context of sustainable development.***

Comment:

(i) Long-term temperature goals that have been set by signatories to the UN Climate Treaties, based on relevant and reliable science, are the core of the UN Paris Agreement for addressing global climate change.

Nationally Determined Contributions to reduce emissions then follow, composed of mitigation measures undertaken on the basis of equity, and in the context of sustainable development. Each nation's mitigation measures represents their contribution for emissions reduction to meet the long-term temperature goals.

(ii) The core of the Basin Plan are the environmentally sustainable limits that are set; they have the equivalent role to the Paris Agreement's long-term temperature goals.

Adopting the "Paris Agreement model" for the Basin Plan would mean decision-making for setting environmentally sustainable limits would have primacy over ESD.

Decision-making for setting environmentally sustainable limits, based on relevant and reliable science, would be agreed to and set before the evaluation of ESD "scenarios" commenced.

(iii) The methodology used to facilitate decision-making for the Basin Plan to achieve ESD outcomes is crucial. Under the Water Act, it must be based on the "best available scientific knowledge".

What alternative models for methodology to the MDB Authority model could be used to evaluate ESD that would be consistent with the standards and criteria of science e.g. a "methodology that is generally accepted as a reliable body of knowledge for environmental management and planning as a decision-making aid when the environment is in issue?

Issue 2~ Review

Methodology for Achieving ESD: The Case for Multi-Objective Analysis

Multi-objective methodology is a well-accepted procedure that has long been used as a decision-making aid for public-sector environmental and planning issues.

Its application has evolved over time
from conflicts involving a single land use
such as a dam project –
to more complex conflicts,
such as multiple and competing uses of natural resources,
where the evaluation of sustainable development was in issue.

Established concepts and principles from conflict resolution and environmental management and protection are the foundation for the methodology. Two key elements of "***Principled Negotiation***" are the cornerstones for the use of multi-objective analysis as an environmental decision-making aid for finding sustainable solutions: -

(i) Constructing options ("creative scenarios") for mutual gain; and

(ii) Reliance on the use of the same objective criteria to evaluate all scenarios.

An Outline of Multi-Objective Analysis Methodology

- A scenario is a hypothetical construction of the conflict *e.g. developing SDLs as part of the Basin Plan*. The methodology requires several ***scenarios*** along a "continuum of sustainability" by varying the weight and mix given to the environmental, economic and social (including cultural) objectives.

- All scenarios must comply with the *environmentally sustainable limits* set under the Water Act for the amount of water that can be taken from the Basin's water resources. Scenarios requiring an ESD solution under the MDB Plan, could then be constructed based on the ***Commonwealth water reform investments*** for the Murray– Darling Basin.

  The Commonwealth water reform funding provides a package for 37 State-run supply and constraint measures, to select from, to enable the construction of relevant scenarios. These measures aim to secure a long-term sustainable future for irrigated agriculture and communities through more efficient use of the Basin's water resources.

- An innumerable number of scenarios could be constructed. But a finite number of scenarios is required - with one proviso: All feasible supply and constraint measures are to be included in at least one scenario.

- Where scientific uncertainty exists in the application of a supply and constraint measure it would only be included in a scenario when the uncertainty/environmental risk for the application had been resolved.

- Framing ***multiple objectives for sustainable development*** provides the cornerstones for evaluating each scenario for its compatibility with sustainable development. This step is crucial if the methodology is to be an effective decision-making aid.

  As an example, ***Environmental Objectives*** *could be framed based on appropriate legal obligations prescribed by the Water Act:*

  (i) Ensuring that key environmental assets and ecosystem functions are not endangered or exposed to unacceptable risk;

  (ii) Managing the Basin's natural resources to embrace sustainable use, preservation, restoration and enhancement.

- To remove any subjectivity in the evaluation of scenarios, the multiple objectives for sustainable development must be able to be measured
- Selection of the ***criteria to evaluate each objective*** is also a key to success. All criteria have equal weight in the evaluation process. The same criteria are used to evaluate all scenarios. The criteria need to be selected should be based on standards such as: scientific merit or equity; and to be legitimate and practical standards.
- The continuum of scenarios is not fixed - but may change after evaluation commences.
- The ***preferred scenario*** is one that most effectively balances the multiple and conflicting objectives for sustainability; and which secures as much available value as possible. It may be one of the original scenarios evaluated.
- In the situation that no single scenario is clearly superior, a new scenario could be constructed based on the best features of one, or more, or all the scenarios evaluated to become the preferred scenario. It must then be evaluated for its compatibility with sustainable development.

Comment

(i) One view of the multi-objective analysis methodology is that because most public-sector problems involve multiple conflicting objectives — whether in environmental policy, water resources, energy or public health — the opportunity for the methodology is unlimited.

(ii) Problems that must be avoided are using unnecessarily complex objective criteria; or objectives that cannot be measured or quantified; and, of overriding importance, criteria that cannot be evaluated because of the absence of a suitable scientific data or information base.

A model template, developed by the author, for resolving conflict over co-existence between competing land use interests can be downloaded on the following LINK.

NOTE: The multiple objectives for sustainable development, and the objective criteria used to evaluate each objective that were framed, can be modified to apply, as appropriate, to the specific environmental conflict.

End Note

[1] **The *Federal Water Act 2007*, Subsection 21(2):**
The following principles are *principles of ecologically sustainable development* :
(a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;
(b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation [*the 'Precautionary Principle'*];
(c) the principle of inter-generational equity--that the present generation should ensure that the health, biodiversity and productivity of the environment is maintained or enhanced for the benefit of future generations;
(d) the conservation of biodiversity and ecological integrity should be a fundamental consideration in decision-making;
(e) improved valuation, pricing and incentive mechanisms should be promoted.